

**B. Sc. BOTANY**

**Syllabus**

**(With effect from 2022-2023 on wards)**

**Programme Code: 3SB**



**PROVIDENCE COLLEGE FOR WOMEN, COONOOR  
(AUTONOMOUS)**

**PROVIDENCE COLLEGE FOR WOMEN, COONOR**  
**(AUTONOMOUS)**

**Vision**

- Quality Education And Excellence
- Holistic Personality
- Service

**Mission**

- To Quench The Students' Intellectual Thirst For Learning And Research
- Exploring And Nurturing Their Potentiality And Personality
- Moulding Integrated Persons
- Transforming Family, Society And Nation Through Quality Education

## DEPARTMENT OF BOTANY



### **Vision**

- To develop scientific and technological capabilities.
- To encourage students to bring out their hidden talents by instilling values in budding botanists so that the college will step in to getting one of the centres of Excellence in Botany.
- To prepare the students holistically by imparting profound knowledge and various life skills through modern technology in the burgeoning areas of Plant sciences.

### **Mission**

- To strengthen the teaching, learning and research process through herbarium, botanical tours, field and nursery trips, industrial / institutional visits etc.
- To generate wisdom and produce good future scientists, environmentalists and nature lovers by applying both conventional and non conventional tools.

## Instruction: PEOs are

- **Statements of areas or fields where the graduates find employment**
- **Aliveness of Graduates to take up Higher studies**

<b>Programme Educational Objectives (PEOs)</b>	
PEO1	Good scientific knowledge in Biology.
PEO2	Critical thinking and problem solving ability.
PEO3	Analytical ability and administrative skills.
PEO4	Design & development of solutions in day to days life through botanical knowledge
PEO5	Effective functioning in Personal aspects and Team works.
PEO6	Project Management.
PEO7	Leadership qualities.
PEO8	Effective communication skills
PEO9	Intellectual skills in various horizons.
PEO10	Application of ethical principles in work.

## Introduction: Programme Specific Outcomes (PSOs)

The PSOs are programme specific. PSOs are written by the Department offering programme. There are usually 5-7 PSOs for the Department

<b>Programme Specific Outcomes (PSOs)</b>	
After the successful completion of B.Sc. Botany programme, the students are expected to	
PSO1	Attain subject knowledge in terms of individual course as well as holistic programme.
PSO2	Diagnose, scrutinise and distinguish the various features of plant groups.
PSO3	Analytical reasoning through practical skills
PSO4	Acquire knowledge and apply different advanced techniques in Plant science.
PSO5	Able to present scientific hypothesis and data.

**Instruction: Programme Outcomes (POs)** are narrow statements that describe what the students are expected to cognize upon graduation. This also helps the students to gain skills, acquire knowledge and behaviour through the programme.

<b>Programme Outcomes (POs)</b>	
On successful completion of the B.Sc. Botany programme	
PO1	The students could work in research institutes and raise various crop varieties
PO2	The students become an Entrepreneur in Nurseries, Green house farming and in Tissue culture labs
PO3	The students become an Environmental Consultant and help in developing a pollution free environment
PO4	After completing the course, the student will be efficient in medical coding and become Pharmacognosy consultant and help in designing and developing new drugs.
PO5	The students could be employed as Plant Biochemist, Entomologist and analyse biochemical processes with reference to biological systems through their knowledge gained in allied subjects, Chemistry & Zoology
PO6	The students can become a farming consultant by using their acquired knowledge in scientifically improving the existing agriculture practices
PO7	They can become a Plant Pathologist to identify and analyse the plant diseases and pests affecting the crops
PO8	They can become a good Geneticist or Plant Breeding Officers and help in producing genetically modified crops in catering the needs of the society
PO9	They can become an effective Plant Explorer in identifying and classifying new species of plants and maintain a proper herbarium of unexplored areas.
PO10	The students get opportunities of becoming an efficient Forest Ranger, Park Manager, Herbarium keeper etc.

# PROVIDENCE COLLEGE FOR WOMEN, COONOR

## (AUTONOMOUS)

### B.Sc. BOTANY

(Syllabus for the students those who are admitted from the Academic year 2022-2023 onwards)

#### SCHEME OF EXAMINATION

Part	Study Components	Course Title	Ins.hrs/ week	Examinations				Credits
				Dur.	CIA	Mark	Total Mark	
<b>SEMESTER I</b>								
I	Language – I- <b>21U1LT01/ 21U1LH01/ 21U1LF01</b>		6	3	50	50	100	4
II	English – I- <b>21U1GE01</b>		6	3	50	50	100	4
III	Core Paper I– Plant diversity I (Algae, Fungi, Lichen and Plant Pathology) <b>21U1CT01</b>		8	3	50	50	100	4
	Core Practical – I		2	-	-	-	-	-
	Allied -I – Chemistry (Paper I)- <b>21U1AT01</b>		4	3	30	45	75	3
	Allied Practical.		2	-	-	-	-	-
IV	Environmental Studies - <b>21U1ES01</b>		2	3	-	50	50	2
<b>Total</b>			<b>30</b>	<b>15</b>	<b>180</b>	<b>245</b>	<b>425</b>	<b>17</b>
<b>SEMESTER II</b>								
I	Language – II- <b>21U2LT02/ 21U2LH02/ 21U2LF02</b>		6	3	50	50	100	4
II	English – II- <b>21U2GE02</b>		6	3	50	50	100	4
III	Core Paper II - Plant diversity II (Bryophytes, Pteridophytes, Gymnosperms & Palaeobotany)- <b>21U2CT01</b>		8	3	50	50	100	4
	Core Practical- (Paper I and II) - <b>21U2CP02</b>		2	3	50	50	100	4
	Allied – Chemistry ( Paper II) – <b>21U2AT02</b>		4	3	30	45	75	3
	Allied I Practical – <b>21U2AP01</b>		2	3	25	25	50	2
IV	Value Education – Human Rights - <b>21U2HR01</b>		2	3	-	50	50	2
<b>Total</b>			<b>30</b>	<b>21</b>	<b>255</b>	<b>320</b>	<b>575</b>	<b>23</b>

<b>SEMESTER III</b>							
I	Language – III	6	3	50	50	100	4
II	English – III	6	3	50	50	100	4
III	Core Paper III Cell Biology & <b>Biotechniques.</b>	5	3	50	50	100	4
	Core practical	2	-	-	-	-	-
	Allied – Zoology – (Paper I)	4	3	30	45	75	3
	Allied Practical	2	-	-	-	-	-
	Skill based Subject Paper I – <b>Mushroom Cultivation and Techniques</b>	3	3	30	45	75	3
	Tamil @ / Advanced Tamil# (OR) Non-major elective - I (Yoga for Human Excellence)	2	3	-	50	50	2
	<b>Total</b>	<b>30</b>	<b>18</b>	<b>210</b>	<b>290</b>	<b>500</b>	<b>20</b>
<b>SEMESTER – IV</b>							
I	Language – IV	6	3	50	50	100	4
II	English – IV	6	3	50	50	100	4
III	Core Paper IV-Anatomy& Embryology	5	3	50	50	100	4
	Core Practical II - Paper III & IV	2	3	50	50	100	4
	Allied - Zoology- (Paper II)	4	3	30	45	75	3
	Allied – (Zoology) Practical	2	3	25	25	50	2
IV	Skill based subject( Paper II – Computing Skills for Industry 4.0)	3	3	30	45	75	3
	Tamil @ /Advanced Tamil # (OR) Non-major elective -II (General Awareness #)	2	3	-	50	50	2
	<b>Total</b>	<b>30</b>	<b>24</b>	<b>285</b>	<b>365</b>	<b>650</b>	<b>26</b>
<b>SEMESTER – V</b>							
III	Core Paper V - Taxonomy of Angiosperms and Economic Botany.	5	3	50	50	100	4
	Core Paper VI – Genetics, Plant Breeding, Evolution and Biostatistics.	4	3	50	50	100	4
	Core Paper VII -Ecology & Phytogeography.	4	3	50	50	100	4

	Core Paper VIII- <b>Fundamentals of Microbiology.</b>	4	3	50	50	100	4
	Core Practical-III ( Papers V,VI, VII & VIII)	4	-	-	-	-	-
	Elective – I	4	3	50	50	100	4
	Elective Practical	2	-	-	-	-	-
IV	Skill based Subject Paper III - <b>Horticulture</b>	3	3	30	45	75	3
	<b>Total</b>	<b>30</b>	<b>18</b>	<b>280</b>	<b>295</b>	<b>575</b>	<b>23</b>
	<b>SEMESTER – VI</b>						
III	Core Paper IX <b>Plant Physiology, Biochemistry &amp; Biophysics</b>	5	3	50	50	100	4
	Core Paper- X <b>Medicinal Botany &amp; Human Welfare</b>	5	3	50	50	100	4
	Elective – II	5	3	50	50	100	4
	Elective – III	5	3	50	50	100	4
	Core Practical III- Paper V, VI , VII		3	50	50	100	4
	Core Practical- IV - Paper IX & X	4	3	30	45	75	3
	Elective Practical - Practical for Elective subjects I, II & III	3	3	30	45	75	3
	Skill based Subject Practical – for SBS Papers I, II & III	3	3	30	45	75	3
	Extension Activities @	-	-	50	-	50	2
	<b>Total</b>	<b>30</b>	<b>24</b>	<b>390</b>	<b>385</b>	<b>775</b>	<b>31</b>
	<b>Total</b>	<b>180</b>	<b>120</b>	<b>1600</b>	<b>1900</b>	<b>3500</b>	<b>140</b>

@ No Examinations. Only Continuous Internal Assessment (CIA)

#No Continuous Internal Assessment (CIA). Only Examinations.



**List of Elective papers**

<b>Elective – I</b>	<b>A</b>	Applied Microbiology
	<b>B</b>	Plant Pathology
	<b>C</b>	<b>Economic Botany</b>
<b>Elective – II</b>	<b>A</b>	Biotechnology – Concepts & Techniques
	<b>B</b>	Seed Biology
	<b>C</b>	<b>Pomology</b>
<b>Elective - III</b>	<b>A</b>	Applied biotechnology
	<b>B</b>	<b>Ethnobotany</b>
	<b>C</b>	Bioinformatics

Course code		<b><u>PLANT DIVERSITY - I</u></b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core paper - I</b>	<b>120</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Algae, Fungi and Lichens and basic knowledge in host-pathogen interaction gained in previous classes.</b>		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>1. To obtain a thorough knowledge of general characters of algae and life cycle of Chlorophycean members.</li> <li>2. To study a detailed structure of <i>Navicula</i>, <i>Sargassum</i>, <i>Polysiphonia</i> and <i>Nostoc</i>.</li> <li>3. To acquire knowledge about general characters of fungi and structure and reproduction of type specimens.</li> <li>4. To understand the types, distribution, structure and reproduction of Lichens.</li> <li>5. To learn the different plant diseases &amp; pathogenic organisms with their symptoms and control measures</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able :						
1	To understand the thallus structure, reproduction and classification of various Chlorophycean members					K2
2	To get clear idea about members of Bacillariophyceae, Phaeophyceae, Rhodophyceae and Cyanophyceae					K2
3	To classify and bring out the salient features of Fungi					K4
4	To overview the structure and reproduction of various types of Lichens.					K3
5	To Implement knowledge on management of plant diseases to increase crop yield.					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>Algae</b>	<b>20 hours</b>
Classification of Algae - <b>G.M. Smith</b> , a general account of algae-thallus structure, pigmentation, reserve food and reproduction, study of the structure, reproduction and life cycle of <i>Volvox</i> , <i>Ulva</i> , <i>Spirogyra</i> and <i>Caulerpa</i> .		
<b>Unit:2</b>	<b>Algae II</b>	<b>25 hours</b>
Structure, reproduction and life cycle of <i>Navicula</i> , <i>Sargassum</i> , <i>Polysiphonia</i> and <i>Nostoc</i> , <b>economic importance of algae-role in soil fertility, agriculture, nitrogen fixation, symbiosis, biofuels, nanotechnology and algae as research tools and as pollution indicators</b>		
<b>Unit:3</b>	<b>Fungi</b>	<b>25 hours</b>
Fungi and Lichen: Classification of fungi ( <b>Alexopoulos &amp; Mims 1973</b> ): A general account of Fungi- thallus structure, nutrition and reproduction; structure and reproduction of <i>Albugo</i> , <i>Saccharomyces</i> and <i>Aspergillus</i>		
<b>Unit:4</b>	<b>Fungi &amp; Lichens</b>	<b>35 hours</b>
Structure and reproduction of <i>Puccinia</i> , <i>Polyporus</i> and <i>Fusarium</i> ; Lichens-introduction, structure and reproduction of crustose, foliose and fruticose; Lichens as indicators of pollution; <b>Economic importance of fungi-Role of fungi in agriculture, medicine, food and industries, antibiotics and probiotics, harmful effects of fungi on man and plants</b>		
<b>Unit:5</b>	<b>Plant pathology</b>	<b>15 hours</b>
Plant Pathology: Study of the following plant diseases with special reference to the symptoms, causal organism, disease cycle and control measures of 1. Blast of paddy 2. Red rot of sugarcane 3. Tikka disease 4. Citrus canker 5. TMV		
<b>Total Lecture hours</b>		<b>120 hours</b>
<b>Practicals:</b>		
Study of the types mentioned in Algae, Fungi, Lichen, and Plant Pathology		
<b>Text Books</b>		
1	Vashishta, B.R., Sinha, A.K. and Singh, V.P. (2008) Botany for Degree Students: Algae. S. Chand & Company Ltd., New Delhi.	
2	Vashishta, B.R. (1990). Botany for Degree Students: Fungi. S. Chand & Company Ltd., New Delhi.	
3	Sambamurthy, A.V.S.S. (2006). A Textbook of Algae. I.K. International Pvt. Ltd., New Delhi.	

<b>Reference Books</b>	
1	Mehrotra, RS & Aneja, KR. 1999. An Introduction to Mycology, 2nd Ed. New Age International Publishers, New Delhi.
2	Hale, 1996. The biology of Lichens, New Age International Publishers, New Delhi.
3	Sharma OP. 1989. Text Book of fungi. Tata McGraw Hill, New York.
4	Alexopoulos, C.J., Mims, C.W. and Blackwell, M. (1996). Introductory Mycology (4th edition). John Wiley and Sons (Asia), Singapore.
5	Sethi, I.K. and Walia, S.K. (2011). Text book of Fungi & Their Allies. MacMillan Publishers Pvt. Ltd., Delhi.
4	Pandey, B.P. (2001). College Botany Vol. I: Algae, Fungi, Lichens, Bacteria, Viruses, Plant Pathology, Industrial Microbiology and Bryophyta. S. Chand & Company Ltd., New Delhi.

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt11/preview">https://swayam.gov.in/nd2_cec20_bt11/preview</a>
2	<a href="https://www.mooc-list.com/course/introduction-algae-coursera">https://www.mooc-list.com/course/introduction-algae-coursera</a>
3	<a href="https://swayam.gov.in/nd2_cec20_bt13/preview">https://swayam.gov.in/nd2_cec20_bt13/preview</a>
4	<a href="https://www.youtube.com/watch?v=Dd8heneTj9I">https://www.youtube.com/watch?v=Dd8heneTj9I</a>
5	<a href="https://www.youtube.com/watch?v=5ogUuEwjRT8">https://www.youtube.com/watch?v=5ogUuEwjRT8</a>
6	<a href="https://www.youtube.com/watch?v=HRcPh7DwcY0">https://www.youtube.com/watch?v=HRcPh7DwcY0</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	S	S	S	M	M
<b>CO2</b>	M	S	M	M	S	S	S	S	S	S
<b>CO3</b>	S	S	M	M	S	S	M	S	M	S
<b>CO4</b>	M	S	S	S	M	S	S	M	S	S
<b>CO5</b>	S	M	S	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b><u>PLANT DIVERSITY - II</u></b> <b><u>(Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany)</u></b>	L	T	P	C
Core/Elective/Supportive		Core paper - II	120			4
Pre-requisite		Knowledge gained in structure reproduction and economic importance of Bryophytes, Pteridophytes and Gymnosperms. Basic knowledge about fossilization studied in H.Sc.	Syllabus Version			2022-2023
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>1. To understand the classification of Bryophytes and structure and reproduction of few members.</li> <li>2. To learn about the classification of Pteridophytes, evolution of stele and life cycle of <i>Selaginella</i> and <i>Equisetum</i>.</li> <li>3. To Study the Heterospory and seed habit and members of Pteropsida.</li> <li>4. To gain knowledge about the classification of Gymnosperm and general characters of <i>Cycas</i>, <i>Pinus</i> and <i>Gnetum</i>.</li> <li>5. To Explore Paleobotany, Geological time scale, fossil studies, techniques of carbon dating and few types.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Get an overview about classification of Bryophytes and their representative members.					K2
2	Gain knowledge in depth about Pteridophytes, classification, evolution of stele, and life cycle of <i>Selaginella</i> and <i>Equisetum</i> .					K2
3	Gain knowledge in identification and life cycle of <i>Dicranopteris</i> and <i>Marselia</i> .					K3
4	Overall view about Gymnosperms and their three major genera and angiospermic affinities					K2
5	Understand Palaeobotany, types of fossils and analysis of fossil age with few examples					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>Bryophytes</b>	<b>15 hours</b>
Classification of Bryophytes (Rothmaler), Structure and reproduction of <i>Marchantia</i> , <i>Anthoceros</i> and <i>Polytrichum</i> , <b>economic importance of bryophytes</b>		
<b>Unit:2</b>	<b>Pteridophytes - I</b>	<b>30 hours</b>
Classification of Pteridophytes (K.R.Sporne) Stellar evolution, Structure and Reproduction of <i>Selaginella</i> and <i>Equisetum</i> , economic importance of Pteridophytes, stellar evolution, Heterospory and Seed Habit		
<b>Unit:3</b>	<b>Pteridophytes - II</b>	<b>25 hours</b>
Structure and reproduction of <i>Dicranopteris</i> and <i>Marsilea</i> , <b>economic importance of Pteridophytes</b>		
<b>Unit:4</b>	<b>Gymnosperms</b>	<b>35 hours</b>
Classification of Gymnosperms (K.R.Sporne) Structure and Reproduction of <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> , <b>angiospermic affinities and economic importance of Gymnosperms</b>		
<b>Unit:5</b>	<b>Palaeobotany</b>	<b>15 hours</b>
Fossils and fossilization, types of fossils, Study of the following: <i>Lepidodendron</i> (Stem), <i>Lepidocarpon</i> (Fruit) and <i>Williamsonia</i> , Geological time scale, radio carbon dating.		
<b>Total Lecture hours</b>		<b>120 hours</b>
<b>Practicals:</b>		
Study of the types mentioned below: <b>Bryophytes:</b> <i>Marchantia</i> , <i>Anthoceros</i> and <i>Polytrichum</i> . <b>Pteridophytes:</b> <i>Selaginella</i> , <i>Equisetum</i> , <i>Dicranopteris</i> and <i>Marsilea</i> . <b>Gymnosperms:</b> <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> . <b>Palaeobotany:</b> <i>Lepidodendron</i> , <i>Lepidocarpon</i> and <i>Williamsonia</i> .		

<b>Text Books</b>	
1	Palaniyappan, S. (1988). Bryophyta ( In Tamil). T.K. Publishing House, Chennai.
2	Rashid, A. (1998). An Introduction to Bryophyta. Vikas Publishing House (P) Ltd., New Delhi.
3	Vashista, P.C. (1997). Botany for Degree Students Pteridophyta. S. Chand and Company Ltd., New Delhi.
4	Vashishta, P.C. (1996). Botany for Degree Students-Gymnosperms (2 <sup>nd</sup> Edn.), S. Chand and Company Ltd., New Delhi.
5	Sporne, K.R. (1971). The Morphology of Gymnosperms (The Structure and Evolution of Primitive seed Plants). Hutchinson University Library, London.
6	Venkatachala, B.S., Shukla, M. and Sharma, M. (1992). Plant Fossils-a Link with the Past (A Birbal Sahni Birth Centenary Tribute). Birbal Sahni Institute of Paleobotany, Lucknow.

<b>Reference books</b>	
1	Smith, G.M. (1955). Cryptogamic Botany Vol. II Bryophytes and Pteridophytes (2 <sup>nd</sup> edn.). Tata McGraw Hill Publishing Co., New Delhi.
2	Rashhed, A. (1999). An Introduction to Pteridophyta. Vikas Publishing House (P) Ltd., New Delhi.
3	Sporne, K.R. (1970). The Morphology of Pteridophytes (The Structure of Ferns and Allied Plants). Hutchinson University Library, London.
4	Srivastava, H.N. (1998). Gymnosperms. Pradeep Publications, Jalandhar.
5	Pandey et al., 1998. A Text Book of Botany Vol. II. S. Chand & Co. Ltd. 1980.
6	Arnold, 2019, An Introduction to Paleobotany
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt11/preview">https://swayam.gov.in/nd2_cec20_bt11/preview</a>
2	<a href="https://www.youtube.com/watch?v=sEEVVCQKx68">https://www.youtube.com/watch?v=sEEVVCQKx68</a>
3	<a href="https://www.youtube.com/watch?v=avK7hGnaRAY">https://www.youtube.com/watch?v=avK7hGnaRAY</a>
4	<a href="https://www.youtube.com/watch?v=zZ6XPDDDeVwk">https://www.youtube.com/watch?v=zZ6XPDDDeVwk</a>
5	<a href="https://www.youtube.com/watch?v=aNsFLFh--vI">https://www.youtube.com/watch?v=aNsFLFh--vI</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	S	S	M	M	M	M	M	S	S
<b>CO2</b>	M	S	S	M	S	S	M	M	M	S
<b>CO3</b>	S	S	S	M	M	S	M	M	S	S
<b>CO4</b>	M	S	S	M	M	S	S	S	S	S
<b>CO5</b>	S	M	S	M	M	M	M	S	S	M

\*S-Strong; M-Medium; L-Low

course code		CELL BIOLOGY AND BIOTECHNIQUES	L	T	P	C
Core/Elective/Supportive		Core paper - III	75			4
Pre-requisite		Basic knowledge about structure and function of cell organelle, cell cycle and instrumentation gained during Higher Secondary course	Syllabus Version	2022-2023		
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>To gain knowledge about cell structure, difference between Prokaryotic and Eukaryotic cell, structure and function of cell wall, plasma membrane and cell organelles including mitochondria, chloroplast, nucleus and chromosome</li> <li>To study about the cell division-both mitosis and meiosis, and to learn the DNA structure, its replication along with protein synthesis.</li> <li>To learn the principle of pH meter, colorimeter, spectrophotometer, centrifuge and microscopy.</li> <li>To study about Chromatography and Electrophoresis.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Get a thorough knowledge of cell, cell wall, plasma membrane and cell organelles.					K1
2	Gaining knowledge about mitochondria, chloroplast, nucleus and chromosome.					K2
3	Understand cell divisions, DNA structure, and its replication along with protein synthesis.					K3
4	Technically able to handle pH meter, colorimeter, spectrophotometer, centrifuge and the principles of microscopy					K3
5	Understand the principles and applications of Chromatography and Electrophoresis					K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						



<b>Unit:1</b>	<b>Cell Biology</b>	<b>20 hours</b>
Structure of Plant Cell – Prokaryotic and Eukaryotic cell, Structure and function of cellwall, plasma membrane (with models), endoplasmic reticulum, ribosomes, Golgi bodies and lysosomes.		
<b>Unit:2</b>	<b>Cell Organelles</b>	<b>15 hours</b>
Structure and function of Chloroplast, Mitochondria, Nucleus, Chromosome and giant chromosome		
<b>Unit:3</b>	<b>Cell Division</b>	<b>15 hours</b>
Cell division- Mitosis, Meiosis, Nucleic acid - Structure and function of DNA, Replication of DNA (Semi-conservative method). RNA – types and Protein synthesis.		
<b>Unit:4</b>	<b>Biotechniques I</b>	<b>15 hours</b>
Principles and operation techniques and uses of pH meter, Colorimeter, Spectrophotometer, Centrifuge, Microscopy – light, SEM and TEM.		
<b>Unit:5</b>	<b>Biotechniques II</b>	<b>10 hours</b>
Principles and basic knowledge of Chromatography (paper, T L C & Column), Electrophoresis PAGE (Basics).		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Practicals:</b>		
<ol style="list-style-type: none"> <li>1. Study of mitosis using Onion roots</li> <li>2. Study of cell organelles through slides and Photographs</li> <li>3. Demonstration of pH meter, Colorimeter, Spectrophotometer, centrifuge , chromatography (leaf pigments - paper only) and Electrophoresis PAGE only</li> </ol>		

<b>Text Books</b>	
1	Verma, P.S. and V.K. Agarwal, 2014, Cytology. S. Chand, New Delhi.
2	Verma, P.S. and Agarwal, V.K. (1986). Cell Biology and Molecular Biology (Cytology). S. Chand and Company Ltd., New Delhi.
3	N.Arumugam (2015),Cell Biology,Saras Publication.,Nagercoil., Tamil Nadu
4	L Veerkumari (2011), Bioinstrumentation, MJP Publishers Chennai
5	N.Arumugam and V.Kumaresan(2015), Biophysics and Bioinstrumentation ,Saras Publication.,Nagercoil., Tamil Nadu
6	Veer bala rastogi(2005),Introductory cytology,kedarnath ramnath,meerut

<b>Reference books</b>	
1	De Robertis, E.D.P. and De Robertis, E.M.F. Jr. (1980). Cell and Molecular Biology (7th Ed). Saunders College/Holt, Rinehart and Winson, Philadelphia.
2	Sharma, N.S. (2005). Molecular Cell Biology. International Book distributors, Dehra Dun.
3	Power, C.B. (1984). Cell Biology. Himalaya Publishing Co., Mumbai.
4	Skoog and Leary. 1992. Principles of Instrumental analysis, 4th Edition. Saunder's College Publishing, New York.
5	Wilson, K. and Walker, J. 2000. Principles and Techniques of Practical Biochemistry, 5th edition, Cambridge University Press, Cambridge.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec19_bt12/preview">https://swayam.gov.in/nd2_cec19_bt12/preview</a>
2	<a href="https://www.google.com/search?q=neela+bakore+tutorials+cell+the+unit+of+life&amp;oq=neela+bakore+tutorials">https://www.google.com/search?q=neela+bakore+tutorials+cell+the+unit+of+life&amp;oq=neela+bakore+tutorials</a>
3	<a href="https://nptel.ac.in/courses/102/103/102103012/">https://nptel.ac.in/courses/102/103/102103012/</a>
4	<a href="https://www.youtube.com/watch?v=zufaN_aetZI">https://www.youtube.com/watch?v=zufaN_aetZI</a>
5	<a href="https://www.youtube.com/watch?v=NFdeXi9Gfpc">https://www.youtube.com/watch?v=NFdeXi9Gfpc</a>
6	<a href="https://swayam.gov.in/nd1_noc20_bt31/preview">https://swayam.gov.in/nd1_noc20_bt31/preview</a>
7	<a href="http://www.bio-nica.info/Biblioteca/Bolsover2004CellBiology.pdf">http://www.bio-nica.info/Biblioteca/Bolsover2004CellBiology.pdf</a>
8	<a href="https://www.academia.edu/36419728/LECTURE_NOTES_CELL_BIOLOGY">https://www.academia.edu/36419728/LECTURE_NOTES_CELL_BIOLOGY</a>
9	<a href="https://www.google.com/search?q=meiosis+by+neela+bakore">https://www.google.com/search?q=meiosis+by+neela+bakore</a>
10	<a href="https://www.youtube.com/watch?v=VdNhREmkrmE">https://www.youtube.com/watch?v=VdNhREmkrmE</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	M	S	S	M	M
<b>CO2</b>	S	S	M	M	S	S	S	S	M	M
<b>CO3</b>	S	M	M	S	S	M	S	S	M	M
<b>CO4</b>	S	S	S	S	S	S	S	S	S	M
<b>CO5</b>	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

course code		<u><b>ANATOMY AND EMBRYOLOGY</b></u>	L	T	P	C
<b>Core/Elective/ Supportive</b>		<b>Core paper - IV</b>	<b>75</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in structure and function of tissues and its organisation, internal structure of plant parts, pollination and fertilization changes gained in lower classes.</b>		<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Learn about meristem and theories of meristems, simple and complex tissues and stomatal types</li> <li>2. Gain knowledge about anatomy of stem and root with their secondary growth</li> <li>3. Understand deviation in normal secondary growth in Dicots and few arborescent monocots</li> <li>4. Overview the structure of micro and mega sporangium and gametophytes</li> <li>5. Grasp the idea of double fertilization, types of endosperm, dicot embryo development along with Polyembryony, Parthenocarpy and Apomixis.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Gain knowledge about meristem and tissue types.					K1
2	Understand histology of stem, root and leaf and their secondary growth.					K2
3	Evaluate the anomalous secondary growth in dicots and monocots.					K5
4	Acquire knowledge on embryology, structure and development of male and female sporangium, micro and mega gametophyte.					K2
5	Get a thorough knowledge of fertilization, types of endosperm, dicot embryo, polyembryony, parthenocarpy and apomixis					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Unit:1</b>	<b>Tissues</b>	<b>20 hours</b>
Meristems- structure and function, root apex and shoot apex, theories of meristems, structure and function of simple and permanent tissues,		
<b>Unit:2</b>	<b>Anatomy of Plant Parts</b>	<b>20 hours</b>
Types of vascular bundles, Primary Structure of dicot and monocot root and stem, structure of dicot and monocot leaf, stomatal types, secondary growth in dicot stem and root.		
<b>Unit:3</b>	<b>Anomalous Secondary Growth</b>	<b>10 hours</b>
Anomalous secondary growth in dicots - successive rings of cambia, intraxylary phloem, cortical and medullary vascular bundles, arborescent growth in monocots.		
<b>Unit:4</b>	<b>Gametogenesis</b>	<b>15 hours</b>
Embryology- Structure and development of microsporangium, male gametophyte, types of ovules, mega sporangium, female gametophyte (Polygonum type)		
<b>Unit:5</b>	<b>Post Fertilization Changes</b>	<b>10 hours</b>
Double fertilization, endosperm - Structure, development and types of endosperm, structure and development of dicot and monocot embryo, Polyembryony, Parthenocarpy and Apomixis		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Practicals:</b>		
<b>Anatomy:</b>		
Study of tissues mentioned in the theory		
1. Identifying stomatal types using leaf peel method (Any one example for each type)		
2. Stem - Primary structure - <i>Tridax</i> , <i>Cucurbita</i> and <i>Sorghum</i>		
3. Root Primary structure - <i>Bean</i> , <i>Canna</i> and <i>Vanda</i>		
4. Leaf – <i>Nerium</i> .		
5. Anomalous Secondary thickening - <i>Boerhavia</i> , <i>Achyranthes</i> & <i>Nyctanthes</i>		
<b>Embryology:</b>		
1. T.S of anther.		
2. Various stages of development of male and female gametophyte, endosperm, embryo sac and polyembryony to be studied from permanent slides.		
3. Embryo Mounting – <i>Bidens/Cucumis/Cytisus</i>		

<b>Text Books</b>	
1	Vasishta, P.C. (1977). A Text Book of Plant Anatomy. S. Nagin and Co., New Delhi.
2	Pandey B.P. 2007 Plant Anatomy, S. Chand & Co. De, New Delhi.
3	Maheswari, P. (1985). An Introduction to the Embryology of Angiosperms. Tata McGraw Hill Publishing Co. Ltd., New Delhi.
4	Bhojwani, S.S. and Bhatnagar, S.P. (2000). The Embryology of Angiosperms (4th Edition). Vikas Publishing House (P) Ltd., UBS Publisher's Distributors, New Delhi.
5	Annie Regland. (2000). Developmental Botany -Saras Publication, Kanyakumari

<b>Reference Books</b>	
1	Fahn, A. (1997). Plant Anatomy. Pergamon Press, Oxford.
2	Esau, K. (1991). Plant Anatomy. Wiley Eastern Ltd. New Delhi. 7th Edition
3	Raghavan, V. (1997). Molecular Embryology of Flowering Plants. Cambridge University Press, Cambridge.
4	Singh, Pandey and Jain, (2007). Anatomy of Seed plants, Rastogi Publications. New Delhi.
5	Swamy, B.G.L. and Krishnamoorthy, K.V. (1980). From Flower to Fruit. Tata McGraw Hill Publishing Co. Ltd., New Delhi.

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://virtualplant.ru.ac.za/Main/ANATOMY/prac5.htm">http://virtualplant.ru.ac.za/Main/ANATOMY/prac5.htm</a>
2	<a href="https://www.youtube.com/watch?v=Q1VosdthSLM">https://www.youtube.com/watch?v=Q1VosdthSLM</a>
3	<a href="https://www.youtube.com/watch?v=WfURKyslthI">https://www.youtube.com/watch?v=WfURKyslthI</a>
4	<a href="https://www.youtube.com/watch?v=2_Kj_GtWBdU">https://www.youtube.com/watch?v=2_Kj_GtWBdU</a>
5	<a href="https://www.biologydiscussion.com/stems-2/dicot-stem/secondary-growth-in-dicot-stem-with-diagram/70397">https://www.biologydiscussion.com/stems-2/dicot-stem/secondary-growth-in-dicot-stem-with-diagram/70397</a>
6	<a href="https://www.google.com/search?q=neela+bakore+reproduction+in+flowering+plants">https://www.google.com/search?q=neela+bakore+reproduction+in+flowering+plants</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	M	M	S	S
<b>CO2</b>	S	S	M	M	M	S	M	M	M	M
<b>CO3</b>	M	M	S	M	S	M	S	M	S	S
<b>CO4</b>	S	S	S	M	M	M	S	S	S	S
<b>CO5</b>	S	S	S	M	M	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		TAXONOMY OF ANGIOSPERMS AND ECONOMIC BOTANY	L	T	P	C
Core/Elective/Supportive		Core paper -V	75			4
Pre-requisite		Basic knowledge in classification of plants, Morphology, Taxonomy and their indigenous uses gained during H.S.C level.	Syllabus Version			2022-2023
<b>Course Objectives:</b>						
The main objectives of this course are: <ol style="list-style-type: none"> <li>1. To learn morphology and classification of Angiosperms</li> <li>2. To understand herbarium techniques, nomenclature, publication and modern trends in taxonomy</li> <li>3. To describe the character and economic importance of families</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Get a thorough knowledge of descriptive term used in taxonomy and its classification					K1
2	Know about herbarium techniques, nomenclature, typification, author citation and modern trends in taxonomy					K2
3	Understand the descriptive characters of families, pollination mechanism of selected families of Polypetalae					K3
4	Understand the descriptive characters of families, pollination mechanism of selected families of Gamopetalae					K3
5	Understand the descriptive characters of families, pollination mechanism of selected families of Monochlamydeae and Monocots					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>Morphology and classification</b>	<b>20 hours</b>
Descriptive terms used in taxonomy –Parts of plant, Phyllotaxy, Inflorescence, floral parts and arrangement and fruits. Taxonomy and its significance. Systems of classification - Natural - Bentham & Hooker, Modern Takhtajan (outline only),APG System of plant classification (outline only).		
<b>Unit:2</b>	<b>Herbarium technique and Taxonomy</b>	<b>10 hours</b>
Herbarium techniques and uses, Nomenclature -ICBN, Priority, Typification, Effective and Valid publication, Author citation, Modern trends in Taxonomy		
<b>Unit:3</b>	<b>Families-Polypetalae</b>	<b>15 hours</b>
A detailed study of the following families and the economic importance of types and pollination mechanisms wherever applicable. <b>Magnoliaceae, Brassicaceae, Sterculiaceae, Rutaceae, Sapindaceae</b> Curcubitaceae and Apiaceae.		
<b>Unit:4</b>	<b>Gamopetalae</b>	<b>15 hours</b>
Rubiaceae, Asteraceae, <b>Apocynaceae, Scrophulariaceae</b> , Acanthaceae and Lamiaceae.		
<b>Unit:5</b>	<b>Monochlamydeae and Monocots</b>	<b>15 hours</b>
Amaranthaceae, <b>Euphorbiaceae</b> , Orchidaceae, <b>Liliaceae</b> and Poaceae.		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Practicals :</b>		
<ol style="list-style-type: none"> <li>1. Taxonomical studies of selected plant species included in the families mentioned in the theory syllabus.</li> <li>2. Study of economic products of the plants belonging to the families mentioned in the theory syllabus.</li> <li>3. Field trip for 5 days to study vegetation in Tamil Nadu and neighbouring states.</li> <li>4. Students should submit 20 herbarium sheets of local plants (weeds) along with tour/trip report and field note book at the time of practical examination.</li> </ol>		



<b>Text Books</b>	
1	Pandey, B.P. 1999. Taxonomy of Angiosperms, S. Chand, New Delhi
2	Singh, V. and D.K. Jain. (1997). Taxonomy of Angiosperms. Rastogi Publications, New Delhi.
3	Sharma, O.P. (1986). Modern taxonomy. Rastogi Publications, New Delhi.
4	Pandey, B.P. (2000). Economic Botany. S. Chand & Company Ltd., New Delhi.
5	Verma, V. (1974). A Text Book of Economic Botany. Emkay Publications, New Delhi.

<b>Reference Books</b>	
1	Lawrence, G.H.M. (1955). An Introduction to Plant Taxonomy. The Central Book Depot, Allahabad.
2	Mathews, K.M. (1987-90). Flora of Tamilnadu Carnatic (1-4vols.) Rapinat Herbarium, Trichy.
3	Naik, V.N. (1996). Taxonomy of Angiosperms (9th Ed.). Tata McGraw-Hill Publishing Co., (P) Ltd., New Delhi.
4	Narayanaswamy, R.V. and Rao, K.N. (1976). Outlines of Botany. S. Viswanathan Printers & Publishers, Chennai.
5	Sen, S. (1992). Economic Botany. New Central Book Agency, Calcutta.
6	Hill, A.W. (1952). Economic Botany. Tata McGraw–Hill Publishing Co., New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_ccc19_bt10/preview">https://swayam.gov.in/nd2_ccc19_bt10/preview</a>
2	<a href="https://nptel.ac.in/courses/102/107/102107075/">https://nptel.ac.in/courses/102/107/102107075/</a>
3	<a href="https://www.swayamprabha.gov.in/index.php/program/archive/9">https://www.swayamprabha.gov.in/index.php/program/archive/9</a>
4	<a href="https://www.youtube.com/watch?v=qIAoMgHtyOc">https://www.youtube.com/watch?v=qIAoMgHtyOc</a>
5	<a href="https://www.youtube.com/watch?v=vMs16X1H4tk">https://www.youtube.com/watch?v=vMs16X1H4tk</a>
6	<a href="https://www.youtube.com/watch?v=q3_8pvZebXQ">https://www.youtube.com/watch?v=q3_8pvZebXQ</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	S	S	S
<b>CO2</b>	S	S	S	S	M	S	M	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		<b>GENETICS, PLANT BREEDING , EVOLUTION AND BIOSTATISTICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core paper - VI</b>	<b>60</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge in structure and function of chromosomes, genes and mendelian inheritance gained in Std XII and II UG.</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Overview Mendelian inheritance, basic cross types and gene interaction						
2. Understand linkage and crossing over, multiple alleles, blood groups, polyploidy and sex determination						
3. Learn mutation types, mutagens, Cytoplasmic inheritance, Gene structure, Genetic code, DNA bar-coding.						
4. Impart knowledge about plant breeding methods and basic theories of evolution						
5. Learn basics of biostatics in biological context						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Learn Mendelian inheritance, monohybrid, dihybrid, back and test cross, incomplete dominance, gene interaction .					K2
2	Appreciate linkage and crossing order, multiple alleles, polyploidy and determination of sex.					K2
3	Get a thorough knowledge of mutation, cytoplasmic inheritance, gene structure, genetic code and DNA bar-coding.					K3
4	Gain knowledge of plant breeding and evolution.					K2
5	Enable to handle Biostatistics problems and analyze biological data.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>Classical Genetics-I</b>	<b>12 hours</b>
Mendelian inheritance, Monohybrid and Dihybrid cross, Test cross, Back cross, Incomplete dominance, Gene Interaction (Complementary, Supplementary, Duplicate and Inhibitory), Polygenic inheritance.		
<b>Unit:2</b>	<b>Classical Genetics-II</b>	<b>12 hours</b>
Linkages and crossing over multiples alleles - blood groups in man, mutation types, physical and chemical mutagens, sex determination in plants.		
<b>Unit:3</b>	<b>Cytogenetics</b>	<b>12 hours</b>
Polyploidy, cytoplasmic inheritance, population genetics, gene structure and function, genetic code, dna barcoding in plants.		
<b>Unit:4</b>	<b>Plant breeding and Evolution</b>	<b>12 hours</b>
Plant breeding - objectives, plant introduction, selection, hybridization, hybrid vigour, breeding for disease resistance. evolution – evolutionary theories- lamark, darwin, deviris, modern synthetic theory.		
<b>Unit:5</b>	<b>Biostatistics</b>	<b>12 hours</b>
Biostatistics data, types and methods of collection of data, sampling techniques, frequency distribution. presentation of data – tabulation – parts of table, types of table, graphic representation of data- histogram. measures of central tendency– arithmetic mean, median and mode. measures of dispersion – standard deviation and standard error. test of significance – chi-square test goodness of fit.		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<p><b>Practicals :</b></p> <ol style="list-style-type: none"> <li>1. Observation of charts for Mendelian ratios, Gene interaction, Linkage and crossing over,</li> <li>2. Simple Problems in genetics.</li> <li>3. Simple problems in Biostatistics-Mean, Median and Mode</li> </ol>		

<b>Text Books</b>	
1	Gupta, P.K. & M.S. Swaminathan. (2000). Cytology, genetics and Evolution. Rastogi Publication, Meerut.
2	Gupta, P.K. (2004). Elements of genetics. FNA 2nd Edition.
3	Fundamentals of Genetics, Singh, B.D, S.Chand & Co, New Delhi
4	Chaudhari, H.K. (2005). Elementary principles of plant breeding (25th Ed.). Oxford & IBH Publishing Co. (P) Ltd., New Delhi.
5	Arumugam, N. (2003). Basic concepts of Biostatistics. Saras Publications, Nagarcoil.
6	Palanichamy, S & M. Manoharan. (1994). Statistical methods for biologists. Paramount Publication, Palani.
7	Introduction to Biostatistics, Pranab Kumar Banerjee, S.Chand & Co, New Delhi
8	Plant Breeding, Singh B.D. S.Chand & Co

<b>Reference Books</b>	
1	Sinha, U. and Sinha, S. (1989). Cytogenetics, Plant Breeding & Evolution. Vikas Publishing House, New Delhi.
2	S.P. Gupta, S.P. (2001). Statistical methods. Sultan Chand & Sons, Educational Publishers, New Delhi.
3	Verma, P.S. and Agarwal, V.K. (1999). Concepts of Evolution. S. Chand & Company Ltd., New Delhi.
4	. Sinnott, E.W., Dunn, L.C. and Dobshansky, J. (1958). Principles of Genetics (5th Edition) McGraw Hill Publishing Co., New York.
5	Strickberger, M.W. (1976). Genetics (2nd Ed.). MacMillan Publishing Co. Inc., New York.
6	Shukla, R.S. and Chandel, P.S. (1996). Cytogenetics, Evolution & Plant Breeding. S. Chand & Company Ltd., New Delhi.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	<a href="https://swayam.gov.in/nd2_cec20_bt03/preview">https://swayam.gov.in/nd2_cec20_bt03/preview</a>
2	<a href="https://swayam.gov.in/nd2_cec20_bt07/preview">https://swayam.gov.in/nd2_cec20_bt07/preview</a>
3	<a href="https://swayam.gov.in/nd2_cec20_bt06/preview">https://swayam.gov.in/nd2_cec20_bt06/preview</a>
4	<a href="https://www.youtube.com/watch?v=8ATRfaiaOLg">https://www.youtube.com/watch?v=8ATRfaiaOLg</a>
5	<a href="https://www.google.com/search?q=genetics+principles+of+inheritance+and+variation+neela+bakore">https://www.google.com/search?q=genetics+principles+of+inheritance+and+variation+neela+bakore</a>

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	S	S	S	S	S	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		<b><u>ECOLOGY AND PHYTOGEOGRAPHY</u></b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core paper - VII</b>	<b>60</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge in structure and function of eco system, and types of forests in India</b>	<b>Syllabus Version</b>			<b>2022-2023</b>
<b>Course Objectives:</b>						
<p>The main objectives of this course are :</p> <ol style="list-style-type: none"> <li>1. To understand principles of ecology, structure and function of ecosystem, Biogeochemical cycles.</li> <li>2. To gain knowledge about Autecology and synecology</li> <li>3. To realize about plant succession and ecological adaptations.</li> <li>4. To learn about forests and their types</li> <li>5. To highlight plant geography, phytogeographical regions of India, dispersal mechanism, migration, concept of Barriers, Continental drift, Endemism and Plant indicators.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Gain knowledge about ecological principles, ecosystem structure and function					K2
2	Understand units of vegetation, physiognomy, methods of studying vegetation					K2
3	Know about plant succession and ecological adaption					K4
4	Get better understanding of forests and forest resources, types of forests					K3
5	Overview dispersal mechanism, migration, concepts of barrier, continental drift, endemism, plant indicator and phytogeographical regions of India.					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>Fundamentals of Ecology</b>	<b>12 hours</b>
Ecology-Principles and approaches, structure and function of ecosystem, role of climatic, edaphic and biotic factors on plants, biogeochemical cycles (Nitrogen & Carbon).		
<b>Unit:2</b>	<b>Divisions of Ecology</b>	<b>12 hours</b>
Autecology and synecology-vegetation-physiognomy Raunkiaer s life form , units of vegetation (formation, association, consociation, fasciation and society). Methods of studying vegetation - Quadrat, Belt and Line transect.		
<b>Unit:3</b>	<b>Ecological Adaptations</b>	<b>12 hours</b>
Plant succession, Hydrophytes, Mesophytes , Xerophytes ,Halophytes and Epiphytes - morphological and Anatomical features in relation to their habitats (Adaptation)		
<b>Unit:4</b>	<b>Ecology-Forest types</b>	<b>12 hours</b>
Forests and forest resurces, types of forests-Tropical Rain forest, deciduous forest, shoals, sand dunes and mangroves, scrub jungle etc.		
<b>Unit:5</b>	<b>Phytogeography</b>	<b>12 hours</b>
Principles of Phytogeography, Dispersal and migration, concept of barriers, continental drift, endemism, phytogeographical regions of India, plants and plant communities as indictors, Introduction to GPRS and Remote sensing(basics only).		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Practicals:</b>		
1. Study of Morphological and Anatomical adaptations of Hydrophytes, Xerophytes, Halophytes and Epiphytes using representative samples.		
2. Determination of frequency and density constituent of plant species in a terrestrial community through quadrat and transect (line and belt)		
3. Enumerate 25 trees/shrubs (campus flora) with Botanical name, family and vernacular name.		
4. Phytogeographical regions of India.		



<b>Text Books</b>	
1	Plant Ecology, Agarwal A.KJ Agrobios Jodhpur
2	Verma, P.S. and Agarwal, V.K. (1999). Concept of Ecology (Environmental Biology). S. Chand & Co., New Delhi.
3	Vasishta, P.C. (1993). Plant Ecology. II Edition. Vishal Publications.
4	Sharma, P.D. (2000). Ecology & Environment. Rastogi Publications, Meerut, India.
5	Kumar, H.D. (1992). Modern Concepts of Ecology (7 <sup>th</sup> Edn.). Vikas Publishing Co., New Delhi.
6	Shukla. R.S. and P. S. Chandal. (2000). Plant Ecology and soil science. Chand & Co. Ltd., New Delhi.
7	Ecology & Plant Geography, Umesh Kumar, Ambiga Press

<b>Reference Books</b>	
1	Odum, E.P. 1983. Basic Ecology, Saunders, Philadelphia
2	Smith, R.L. 1996. Ecology and Field Biology, Harper Collins, New York.
3	Ambasht R.S. (1992). Text book of Plant Ecology, Students and Friends & Co. Varanashi.
4	Schimper, A.F. (1960). Plant geography. Lubrecht & Cramer Ltd., New York.
5	Mani, M.S. (1974). Ecology & Biogeography of India. Dr. W. Junk Publishers, The Haque.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cce19_hs10/preview">https://swayam.gov.in/nd2_cce19_hs10/preview</a>
2	<a href="https://swayam.gov.in/nd1_noc20_ge16/preview">https://swayam.gov.in/nd1_noc20_ge16/preview</a>
3	<a href="https://swayam.gov.in/nd1_noc20_hs77/preview">https://swayam.gov.in/nd1_noc20_hs77/preview</a>
4	<a href="https://www.youtube.com/watch?v=yXgUn794TVo">https://www.youtube.com/watch?v=yXgUn794TVo</a>
5	<a href="https://www.youtube.com/watch?v=0zctBpOxRi4">https://www.youtube.com/watch?v=0zctBpOxRi4</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	S	S	S
<b>CO2</b>	S	S	S	S	M	S	M	S	S	S
<b>CO3</b>	S	S	S	S	M	S	M	S	S	S
<b>CO4</b>	S	S	S	S	M	S	M	S	S	S
<b>CO5</b>	S	S	S	S	M	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b><u>FUNDAMENTALS OF MICROBIOLOGY</u></b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>Core paper - VIII</b>		<b>60</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on microbes and their applications gained during Class XII.</b>		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>1. To understand the scope and definition of Microbiology, historical aspects, classifications of microorganisms and sterilization methods</li> <li>2. To know soil microbes, types, their role in plant growth and the microbes in air . To overview detailed structure, growth and reproduction of Bacteria ,mycoplasma and Actinomycetes</li> <li>3. To study salient features of virus</li> <li>4. To experiment culture of microorganisms, maintenance and preservation .</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Gain knowledge about the scope of microbiology, historical aspects, classification of microbes and sterilization techniques					K1
2	Understand soil and air microbiology					K2
3	Have an insight on bacterial structure, growth and reproduction and features of Mycoplasma and Actinomycetes					K3
4	Study the structure, replication and classification of virus					K2
5	Develop the Skill in preparation of culture of microorganisms, its maintenance and preservation.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Unit:1</b>	<b>Basic Microbiology</b>	<b>12 hours</b>
Definition and scope of microbiology, historical development of industrial microbiology, concepts, characterization and classification of microorganisms, sterilization techniques.		
<b>Unit:2</b>	<b>Soil and Air Microbiology</b>	<b>12 hours</b>
Soil microbiology-types of microorganism in soil, role of microorganisms in plant growth, factors affecting microbial growth. Microbiology of air-role of microorganisms in air, methods of purification of air.		
<b>Unit:3</b>	<b>Bacteria</b>	<b>12 hours</b>
General characters of Bacteria- morphology, ultra structure, nutrition, growth and reproduction. Mycoplasma and actinomycetes		
<b>Unit:4</b>	<b>Viruses</b>	<b>12 hours</b>
General characters, morphology, ultra structure and replication of T2 phage, TMV, HIV, and transmission of viruses. Satellite virus.		
<b>Unit:5</b>	<b>Culture techniques of Microorganism</b>	<b>12 hours</b>
Culture of microorganisms (Bacteria, Fungi, Actinomycetes), pure culture, maintenance and preservation of culture. Gram staining.		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Practicals:</b>		
<ol style="list-style-type: none"> <li>1. A study of Rhizosphere and Mycorrhizae.</li> <li>2. Preparation of culture media for Bacteria, Fungi and Actinomycetes.</li> <li>3. Estimation of Bacteria, Fungi and Actinomycetes (plate count) from soil and water by serial dilution method.</li> <li>4. Sterilization and Inoculation, Preparation of agar streak and agar slants,</li> <li>5. Identification of bacteria using Gram staining in milk or curd.</li> <li>6. Observation of microbes using hanging – drop method.</li> </ol>		

<b>Text Books</b>	
1	Vijaya Ramesh K (2019), Environmental Microbiology, MJP Publisher.,Chennai.
2	TrivediPC (2008), Applied Microbiology, Agrobios., Jodhpur.
3	S.S. Purohit, (1994). Microbiology, Fundamentals and applications
4	Dubey, RC & Maheshwari, DK. 2004, Text book of microbiology. S. Chand, Delhi.

<b>Reference Books</b>	
1	Pelczar, J., Chan, ECS & Krieg, R.1999. Microbiology, Tata McGraw Hill, New Delhi.
2	Sullia, SB & Shantharam, S. 2005. General microbiology. Oxford & IBH, New Delhi.
3	Casida, LE.1989. Industrial microbiology, Wiley Eastern, New Delhi.
4	Dubey, RC & Maheshwari, DK. 2004, Text book of microbiology. S. Chand, Delhi.
5	Martin Alexander. 1978. Introduction to Soil Microbiol, Wiley Eastern, New Delhi.
6	Wintrien, G.M. and M.D. Lechtman, (1976). Microbiology, 3 <sup>rd</sup> Edition, Macmillan Publishing Co. London.
7	Food, feed and fuel from Biomass,Ed.D.S.Chahal, Oxford & IBH Publ. Ltd. New Delhi
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_ccc20_bt11/preview">https://swayam.gov.in/nd2_ccc20_bt11/preview</a>
2	<a href="https://swayam.gov.in/nd2_ccc19_bt11/preview">https://swayam.gov.in/nd2_ccc19_bt11/preview</a>
3	<a href="https://www.classcentral.com/course/swayam-general-microbiology-14088">https://www.classcentral.com/course/swayam-general-microbiology-14088</a>
4	<a href="https://www.swayamprabha.gov.in/index.php/program/archive/9">https://www.swayamprabha.gov.in/index.php/program/archive/9</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	M	S	S	S	S
<b>CO2</b>	S	S	M	S	S	M	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	M
<b>CO4</b>	S	S	M	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b>PHYSIOLOGY, BIOCHEMISTRY &amp; BIOPHYSICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core/Elective/Supportive		<b>Core paper - IX</b>	<b>75</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in plant metabolism and growth regulators , basic knowledge in laws of thermodynamics, structure and function of enzymes, proteins and lipids studied in the lower classes.</b>		<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>1. To overview Plant Physiology concepts, water relation, transpiration in detail</li> <li>2. To gain complete knowledge about photosynthesis and respiration</li> <li>3. To study about growth regulators and physiology of flowering</li> <li>4. To learn about basic concepts of Biophysics , electromagnetic radiation, laws of thermodynamics and bioenergetics</li> <li>5. To understand Biochemistry, enzyme study and biomolecules</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Gain knowledge about Plant Physiology concepts, water relationship and stomatal movement					K3
2	Learn photosynthesis and respiration					K4
3	Know about plant growth regulators and physiology of flowering					K2
4	Understand about the entire biochemistry, enzymes and biomolecules					K2
5	Get a thorough knowledge on concepts Biophysics, electromagnetic radiation, action and absorption spectra, laws of thermodynamics, high energy compounds and bioenergetics					K1
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Unit:1</b>	<b>Plant Physiology</b>	<b>15 hours</b>
Water relations - Osmosis, absorption of water, water potential and its components, active and passive absorption of water and minerals. Transpiration - kinds, significance and factors affecting transpiration, physiology of stomatal movement, ascent of sap and mechanism of phloem transport.		
<b>Unit:2</b>	<b>Plant Mechanisms</b>	<b>15 hours</b>
Photosynthesis - Pigments system, light and dark reactions. C4 and CAM Pathways. Photorespiration. Respiration - aerobic and anaerobic - Glycolysis, Kreb's cycle - electron transport system.		
<b>Unit:3</b>	<b>Growth Regulators</b>	<b>15 hours</b>
Growth regulators - auxins, gibberellins, kinetins, ethylene and ABA, physiology of flowering plants, photoperiodism		
<b>Unit:4</b>	<b>Biochemistry</b>	<b>15 hours</b>
Enzymes-characteristics, classification , mechanism of enzyme action (lock and key method), factors affecting enzyme activity, structure and functions of protein, lipids and carbohydrates		
<b>Unit:5</b>	<b>Biophysics</b>	<b>15 hours</b>
Electromagnetic radiation, absorption and action spectra, laws of thermodynamics (basics), high energy compounds, bioenergetics of mitochondria and chloroplast.		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Practicals :</b>		
<ol style="list-style-type: none"> <li>1. Effect of the Osmotic pressure of the cell sap by plasmolytic method</li> <li>2. Rate of respiration in flower buds/germinated seeds using simple respiroscope.</li> <li>3. Separation of plant pigments by paper chromatography</li> <li>4. Measurement of the rate of photosynthesis under various CO<sub>2</sub> concentration</li> <li>5. Effect of Light intensity on O<sub>2</sub> evolution during photosynthesis.</li> <li>6. Effect of light intensity on transpiration. Determining the rate of transpiration using Ganong's potometer.</li> <li>7. Quantitative estimation of carbohydrates and proteins</li> <li>8. Qualitative analysis of lipids</li> </ol>		



<b>Text Books</b>	
1	Palanichamy, S. (1986). Principles of biophysics. Paramount Publication, Palani.
2	Narayanan L.M., Dulsy Fathima, K.Nallasingam, R.P. Meyyan Pillai, N.Arumugam, S.Prasanna Kumar. (2010). Biochemistry. Saras Publication
3	Jain V.K. 2006. Fundamentals of Plant Physiology, S. Chand & Co, New Delhi.
4	Verma V. 2007. Text book of Plant Physiology, Ane Books India, New Delhi.
5	Pandey, SN & Sinha, BK. 2006. Plant Physiology, 4th Ed. Vikas Publishing, ND.
6	Annie Ragland, Rajkumar, Rajaatnam and Jayakumar. (2007). Plant Physiology. Saras Publications, Nagarcoil.

<b>Reference Books</b>	
1	Salil Bose. (1981). Elementary biophysics - Part 1. Vija Printers, Madurai.
2	Jain JL 2009 Fundamentals of Biochemistry S. Chand, New Delhi.
3	Albert L. Lehninger. (2002). Principles of Biochemistry. ICAR, Delhi.
4	Chopra. (1995). A text book of Plant Physiology. EMKAY Publications, New Delhi.
5	Malik. (2002). Plant physiology. Kalyani Publishers, New Delhi.
6	Devilin, (1986). Plant physiology. CBS Publishers and distributors, New Delhi.
7	Noggle and Fritz. (1992). Introductory plant physiology. Prentice Hall of India. Pvt. Ltd. New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt01/preview">https://swayam.gov.in/nd2_cec20_bt01/preview</a>
2	<a href="https://swayam.gov.in/nd2_cec19_bt09/preview">https://swayam.gov.in/nd2_cec19_bt09/preview</a>
3	<a href="https://swayam.gov.in/nd2_cec20_bt12/preview">https://swayam.gov.in/nd2_cec20_bt12/preview</a>
4	<a href="https://swayam.gov.in/nd2_cec20_bt19/preview">https://swayam.gov.in/nd2_cec20_bt19/preview</a>
5	<a href="https://swayam.gov.in/nd2_cec19_bt01/preview">https://swayam.gov.in/nd2_cec19_bt01/preview</a>
6	<a href="https://swayam.gov.in/nd1_noc19_bt17/preview">https://swayam.gov.in/nd1_noc19_bt17/preview</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	M	S	S	S	S
<b>CO2</b>	S	S	M	S	S	S	S	S	S	M
<b>CO3</b>	S	S	S	S	S	M	S	S	S	S
<b>CO4</b>	S	S	M	S	S	S	S	S	S	M
<b>CO5</b>	S	M	S	S	S	S	S	S	S	M

**\*S-Strong; M-Medium; L-Low**

Course code		Medicinal Botany & Human Welfare	L	T	P	C
Core/Elective/Supportive		<b>Core Paper X - MEDICINAL BOTANY &amp; HUMAN WELFARE</b>	75			4
Pre-requisite		<b>Basic knowledge about medicinal plants gained from XII STD &amp; other resources</b>	Syllabus Version		2022-2023	
<b>Course Objectives:</b>						
The main objectives of this course are :						
<ol style="list-style-type: none"> <li>1. To educate, study, develop, cultivate, benefit, market &amp; distribute the medicinal plants.</li> <li>2. To develop the awareness of local medicinal plants &amp; their conservation.</li> <li>3. To assess the demand &amp; supply of the medicinal plants.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Understand Pharmacognosy, different systems of Indian medicines, classification of drugs and chemistry of drugs					K2
2	Learn about Morphological and Histological studies along with chemical constituents and uses of few medicinal plants					K2
3	Study about drugs acting on the central nervous system, gastro intestinal disorders and cardio vascular system					K3
4	Overview of Medicinal plant Biotechnology					K4
5	Know about the drug research, identification, adulteration and drug evaluation.					K2
6	Gain about the Genetics & Breeding methods of medicinal plants.					K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						

<b>Unit:1</b>	<b>GENERAL ACCOUNT ON PHARMAGOGNOSY</b>	<b>15 hours</b>
Pharmacognosy - Definition and History, a general account of survey of different systems of medicines - Siddha, Ayurveda and Unani. Classification of drugs (elementary). Chemistry of Drugs (Basics)		
<b>Unit:2</b>	<b>MORPHOLOGY &amp; HISTOLOGICAL STUDY OF MEDICINAL PLANT PARTS</b>	<b>15 hours</b>
Morphological and histological studies, chemical constituents, therapeutic and other pharmaceutical uses of bark - <i>Cinchona</i> , leaves - <i>Adathoda</i> and <i>Eucalyptus</i> , flower - clove.		
<b>Unit:3</b>	<b>TYPES OF MEDICINAL PLANTS</b>	<b>15 hours</b>
Fruits and seed- <i>Limonia</i> (Wood apple), <i>Emblica</i> (Gooseberry) and <i>Papaver</i> (Poppy) seed, Underground stem - <i>Zingiber</i> (Ginger), Unorganized drugs. Gum - Acacia, Resin - Turpentine, Fixed oil - <i>Ricinus</i> (Castor oil).		
<b>Unit:4</b>	<b>THERAPEUTIC ASPECTS OF DRUGS</b>	<b>15 hours</b>
A brief account of the following: a) Drugs acting on the Central nervous system-Belladonna and Aswakantha b) Drugs used in the disorders of the Gastro intestinal tract, <i>Piper nigrum</i> (Pepper) and <i>Acorus</i> (vasumbu) c) Cardio vascular drugs - <i>Digitalis</i> and <i>Rawolfia</i> .		
<b>Unit:5</b>	<b>APPLIED ASPECTS OF MEDICINAL PLANTS</b>	<b>15 hours</b>
Medicinal plant Biotechnology - Genetics, Breeding methods applied to medicinal herbs, NMPB. Drug Adulteration and methods of drug evaluation.		
<b>Practical :</b>		
1. Study morphology and anatomy of medicinal plants mentioned in the syllabus.		
2. Identification of medicinal plant, uses and their active principles.		
3. Exhibit any 20 medicinally useful parts (at least 5 from the syllabus) with botanical name, family, common name, part used, and disease cured.		
	<b>Total Lecture hours</b>	<b>75 hours</b>

<b>Text Books</b>	
1	Kokate, C.K., Purokit A.P and Gokahale, 2008. Pharmacognosy, Nirali Prakashan, Pune
2	T.E. WALLIS (Fifth Edition 2005) Textbook of Pharmacognosy-. CBS Publishers and distributors Delhi.
3	R.S.Satoskar,Nirmala N Rege, Raakhi K. Tripathi and S.D.Bhandarkar (2017)Pharmacognosy & Pharmacotherapeutics.,Popular Pakashan pvt ltd, Bombay.
4	S.S.Handa and V.K.Kapoor(2003) second edition ,Pharmacognosy -. Vallabh Prakash, Delhi
5	Somasundaram, S. (1997). Medicinal Botany (Maruthuva Thavaraviyal) (Tamil Medium Book). Elangovan Publishers, Tirunelveli.
6	Pharmacognosy, G.E.Trease & W.C.Evans, ELB society, Baelliere Tindall, London

<b>Reference Books</b>	
1	Chopra, R.N., Chopra, I.C., Handa, K.L. and Kapur, L.D. (1994). Indigenous Drugs of India. IBH Publishing Co. Pvt. Ltd., New Delhi.
2	Purohit, S.S and S.P. Vyas (2005). Medicinal Plant Cultivation. A Scientific Approach. Agrobios Publishers,Jodhpur, India.
3	H. Panda, (2001) Hand book of herbal medicines. Asia Pacific Business Press, New Delhi.
4	D.J. Deshpande (2006) A Handbook of Medicinal Herbs, Agrobios (India)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.swayamprabha.gov.in/index.php/program/archive/9">https://www.swayamprabha.gov.in/index.php/program/archive/9</a>
2	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
3	<a href="http://nptel.ac.in">http://nptel.ac.in</a>
4	<a href="https://www.fs.fed.us">https://www.fs.fed.us</a>
5	<a href="https://nmpb.nic.in">https://nmpb.nic.in</a>
6	<a href="https://medicinalplants.insightconferences.com">https://medicinalplants.insightconferences.com</a>
7	<a href="https://en.m.wikipedia.org">https://en.m.wikipedia.org</a>
8	<a href="https://researchguides.uic.edu&gt;c.php">https://researchguides.uic.edu&gt;c.php</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S	M	S	S	S
<b>CO3</b>	S	S	M	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	M	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		SKILLED BASED SUBJECT	L	T	P	C
Core/Elective/Supportive		PAPER -1-Mushroom Cultivation Technique	45			3
Pre-requisite		Knowledge gained on structure, reproduction of mushrooms, as Agaricus is known at the Higher secondary level	Syllabus Version		2022-2023	
<b>Course Objectives:</b>						
The main objectives of this course are:						
<ol style="list-style-type: none"> <li>1. To know about mushrooms as they play a key role in human life.</li> <li>2. Gain knowledge on various production process of different kinds of mushrooms</li> <li>3. Encourage research and entrepreneur ideas about mushrooms &amp; their utilization in mankind.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Understand about the basic knowledge on various mushrooms					K1
2	Learn about culture and cultivation techniques of mushrooms					K2
3	Appreciate the enormous values of mushrooms in health and nutrition					K3
4	Study the role of mushrooms in food, medicine etc.,					K4
5	Explore the use of mushroom in day today's life as they are rich in SCP.					K5
<b>K1– Remember; K2– Understand; K3– Apply; K4– Analyze; K5– Evaluate; K6– Create</b>						

<b>Unit:1</b>	<b>MUSHROOMS</b>	<b>09 hours</b>
Mushrooms: Introduction, kinds – edible, poisonous, medicinal. Structure and life cycle of <i>Pleurotus</i> sp.(Oyster) and <i>Agaricus bisporus</i> (Button).		
<b>Unit:2</b>	<b>MUSHROOM CULTURE</b>	<b>09 hours</b>
Pure culture – medium preparation (PDA and Oat meal Agar), methods of sterilization, culturing in test tube slants and Petri plates, preparation and multiplication of mother spawn in bottles and bags.		
<b>Unit:3</b>	<b>CULTIVATION TECHNIQUES</b>	<b>09 hours</b>
Cultivation of mushrooms: locally available substrates, polythene bag, mushroom bed preparation, factors affecting the bed, spawn running. Harvesting of mushrooms – Button, Oyster and Paddy straw mushroom.		
<b>Unit:4</b>	<b>HARVESTING &amp; STORAGE</b>	<b>09 hours</b>
Harvesting: harvesting and post harvesting technology, marketing and packaging. Storage: short term storage (24hrs refrigeration), long term storage (canning, pickling and pappads), storage in salt solution and dry storage.		
<b>Unit:5</b>	<b>VALUE ADDED FOOD PREPARATION</b>	<b>07 hours</b>
Food preparation with mushrooms: mushroom pulao, curry, cutlet, munchedurian, soup, samosa, pickles, omelette, mushroom toast		
Expert Lecture/webinars/Seminar		<b>02 hours</b>
<b><u>Practicals</u></b>		
<ol style="list-style-type: none"> <li>1. Identification of edible mushrooms</li> <li>2. Cultivation of Button mushroom</li> <li>3. Preparation of mushroom recipes</li> </ol>		
<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Books</b>		
1	Marimuthu, T, A.S Krishnamoorthy, K. Sivaprakasam, R. Jayaraman (1991) Oyster mushrooms, Department of plant pathology, TNAU, Coimbatore.	
2	Swaminathan M., 1990 Food and Nutrition, Bappco, The Bangalore Printing and publishing Co. Ltd., Bangalore.	
3	Nita Bahl (1988) Hand book of mushrooms.(2 <sup>nd</sup> Edition )Vol I	



4	Mushroom cultivation, Revathy et al., 2020, Shanlax pub. Madhurai.
5	Aneja, K.R. 2005 Experiments in Microbiology, Plant Pathology and Biotechnology 4 <sup>th</sup> Edn, New Age International Publishers, N.Delhi

<b>Reference books</b>	
1	Nita Bahl (1988) Hand book of mushrooms.(2 <sup>nd</sup> Edition )Vol I
2	Tewari, Pankaj Kapoor S.C. 1988, Mushroom cultivation , Mittal Publications, Delhi.
3	A textbook on mushroom cultivation – theory and practice, Agarwal <i>et al.</i> , 2021, Newrays publishing house, India.
4	Kibby G.1979 Mushrooms & Toadstools-a field guide Oxford University Press, New York
5	Dey S.C. 2010 Mushroom Growing Agrobios, Jodhpur, India
6	Bahl N. 2018 Hand book on Mushrooms 4 <sup>th</sup> Edn. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.mooc-list.com/course/introduction-algae-coursera">https://www.mooc-list.com/course/introduction-algae-coursera</a>
2	<a href="https://swayam.gov.in/nd2_cce20_bt11/preview">https://swayam.gov.in/nd2_cce20_bt11/preview</a>
3	<a href="https://www.brainkart.com/article/Economic-importance-Plants---Food,-Rice,-Oil,-Fibre,-Timber-yielding-plant_1095/">https://www.brainkart.com/article/Economic-importance-Plants---Food,-Rice,-Oil,-Fibre,-Timber-yielding-plant_1095/</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	S	S	M	M	S	M
<b>CO2</b>	S	M	M	S	S	S	M	M	S	S
<b>CO3</b>	S	M	M	S	S	M	S	M	M	M
<b>CO4</b>	S	S	S	M	M	S	S	M	S	S
<b>CO5</b>	S	S	S	S	M	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	SKILL BASED SUBJECT			L	T	P	C
Core/Elective/ Supportive	PAPER-II COMPUTING SKILLS FOR INDUSTRY (4.0)			45			3
Pre-requisite	Basic Knowledge on computer gained through higher secondary class.			Syllabus Version		2022-2023	
<p><b>Course Objectives:</b></p> <p>The main objectives of this course are :</p> <ol style="list-style-type: none"> <li>1. To learn about the basics and functions of computer, internet and communication</li> <li>2. To facilitate students to learn about Microsoft Word and Excel.</li> <li>3. To find out more about Microsoft PowerPoint, database management systems and MS Access.</li> <li>4. To introduce AI and ML for Biology students.</li> <li>5. To know about big data and data analysis.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, students are able to:							
1	Learn how to use computer, Internet, e-mail, Web browser, Web server, and Search engines					K 2	
2	Create documents, tables and spreadsheets					K 6	
3	Know about creation and use of PowerPoint presentations, DBMS and MS Access					K 6	
4	Acquire knowledge about AI and ML					K 2	
5	Implement the knowledge in big data and data analysis					K 3	
<p><b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create</p>							

<b>Unit:1</b>	<b>BASICS OF COMPUTER</b>	<b>09 Hours</b>
Computer - functions and components of compute, operating system - windows – android – intranet & internet – www - browser - email - url -search engines - websites & web pages		
<b>Unit:2</b>	<b>MICROSOFT OFFICE - I</b>	<b>09 Hours</b>
Microsoft word: creation & formatting of document - page , paragraph ,text, table. Microsoft power point: creation and designing of slides , animation , applications of ms word and ms power point.		
<b>Unit:3</b>	<b>MICROSOFT OFFICE - II</b>	<b>09 Hours</b>
Microsoft Excel: workbook ,work sheet, Formatting of row, column and cell , creation and formatting of table & charts. Microsoft Access: Database Management System (DBMS) ,Creation and designing of form, Management of data in table , generation of report,applications of MS Excel and MS Access.		
<b>Unit:4</b>	<b>ARTIFICIAL INTELLIGENCE ( Industry 4.0)</b>	<b>09 Hours</b>
Artificial Intelligence: What and Why? , Foundation of AI , The AI-environment ,Social Influence of AI , applications and future prospects of AI.		
<b>Unit:5</b>	<b>BIG DATA AND DATA ANALYTICS</b>	<b>09 Hours</b>
Big Data: Evolution -data evolution , big data definitions , big data- advantages, characteristics and applications. Introduction to data analytics - data analysis vs. data analytics , types and applications of data analytics.		
<b><u>PRACTICAL</u></b>		
<ol style="list-style-type: none"> <li>1. Creating, editing and printing a document in MS-Word</li> <li>2. Creating a table in MS-Excel</li> <li>3. Creating a chart in MS-Excel</li> <li>4. Creating slide presentation in MS-Power-point</li> <li>5. Web Browsing</li> <li>6. E-Mailing</li> </ol>		
<b>Total Lecture hours</b>		<b>45 Hours</b>

<b>Text Books</b>	
1	V. Rajaraman and N. Adabala, (6th Edition, 2015.) Fundamentals of Computers, Prentice Hall of India Pvt. Ltd. New Delhi.
2	Anita Goel,(2010) Computer Fundamentals, Pearson Education.
3	P.K. Sinha, Computer Fundamentals, BPB Publications New Delhi 6th Edition, 2004.
4	Reema Thareja, Fundamentals of Computers, Oxford University Press, 2014.
5	Mooris mano “Digital Design” Prentice Hall of India PVT Ltd., New Delhi, 1996.

<b>Reference books</b>	
1	B. A. Forouzan. Data Communication and Networking, 5th Edition, TMH, 2013.
2	E.Balagurusamy (2011) Fundamentals of computers, Tata Mc Grw-Hill, New Delhi.
3	The Internet-Complete Reference, Harley Hahn, Tata Mc Grw-Hill, New Delhi.
4	Dr.P.Kaliraj, Dr.T.Devi (2020) Higher Education for Industry 4.0 and Transformation of Education 5.0.

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="http://swayam.gov.in/NPTEL">swayam.gov.in/NPTEL</a>
2	<a href="https://swayam.gov.in/nc_details/NPTEL">https://swayam.gov.in/nc_details/NPTEL</a>
3	<a href="https://www.classcentral.com/report/swayam-moocs-course-list">https://www.classcentral.com/report/swayam-moocs-course-list</a>
4	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
5	<a href="https://swayam.gov.in/nd1_noc20_cs52/preview">https://swayam.gov.in/nd1_noc20_cs52/preview</a>
6	<a href="https://nptel.ac.in/courses/106/105/106105183">https://nptel.ac.in/courses/106/105/106105183</a>
7	<a href="https://www.classcentral.com/institution/nptel">https://www.classcentral.com/institution/nptel</a>
8	<a href="https://nptel.ac.in">https://nptel.ac.in</a>

**Mapping with Programme Outcomes**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	S	S	S
CO2	S	S	S	S	S	M	M	S	S	S
CO3	S	S	S	S	S	S	M	S	S	S
CO4	S	S	S	S	S	M	M	S	S	S
CO5	S	S	S	S	S	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		SKILL BASED SUBJECT	L	T	P	C
Core/Elective/Supportive		PAPER III HORTICULTURE	45			3
Pre-requisite		Basic knowledge in vegetative reproduction of plants, various types of gardens and cultivation methods of various plants studied during previous classes.	Syllabus Version			2022-2023
<b>Course Objectives:</b>						
The main objectives of this course are to :						
<ol style="list-style-type: none"> <li>1. Learn about Horticulture, vegetative propagation, manures and irrigation</li> <li>2. Understand types of gardens and lawn making</li> <li>3. Know about cultivation techniques of vegetables, fruits, use of growth regulators and plant protection methods</li> <li>4. Study of commercial Horticulture like cultivation of flowers, plantation crops and medicinal plants</li> <li>5. Overview the extraction of Jasmine concrete and Papain, Bonsai, cut flowers and their preservation</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Understand basic horticulture methods, vegetative propagation, manures and irrigation					K2
2	Understand different types of gardens and lawn making					K3
3	Analyze the cultivation techniques of vegetables, fruits, use of growth regulators and plant protection methods					K3
4	Entrepreneur skill in flower cultivation ,plantation crops and medicinal plants					K3
5	Learn about extraction of Jasmine concrete and Papain, Bonsai, Cut flowers and preservation of fruits and vegetables					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Unit:1</b>	<b>Introduction to Horticulture</b>	<b>9 hours</b>
Scope and divisions of Horticulture, methods of vegetative propagation - cutting, layering and grafting, organic manures - fertilizers and irrigation.		
<b>Unit:2</b>	<b>Gardening</b>	<b>9 hours</b>
Types of gardens, indoor garden, kitchen garden and public garden. important ornamentals - habit and types , garden components - lawn making, glass house, green house, rockery, water garden, hydroponics and aeroponics, terrace gardening topiary and terrarium.		
<b>Unit:3</b>	<b>Production technology</b>	<b>9 hours</b>
Cultivation of vegetables - brinjal, tomato and onion. cultivation of fruits - banana, mango and apple .growth regulators in horticulture. plant protection measures for horticulture.		
<b>Unit:4</b>	<b>Commercial horticulture I</b>	<b>9 hours</b>
Cultivation of flowers - jasmine, rose, orchid, <i>Anthurium</i> . cultivation of plantation crops - tea, cardamom and coffee. Cultivation of medicinal plants - periwinkle, aloe and <i>Gloriosa</i> .		
<b>Unit:5</b>	<b>Commercial horticulture II</b>	<b>9 hours</b>
Extraction of jasmine concrete and papain. Bonsai, flower arrangement - cut flowers and its importance, Methods to prolong cut flower's life, preservation of fruits and vegetables.		
	<b>Total Lecture hours</b>	<b>45 hours</b>
<b><u>Practicals:</u></b>		
Demonstration of vegetative methods of propagation Flower arrangements with cut flowers.		
<b>Text Books</b>		
1	Kumar, N. (1999). An introduction to horticulture. Rajalakshmi Publication, Nagarcoil.	
2	Manibhusan Rao K (2005) Text book of Horticulture ., Macmillan india ltd.	
3	Prasad, 2005, Principles of Horticulture, International Book Dept., Deharadun	
4	Trivedi, Pratibha P (2010), Home Gardening, ICAR, New Delhi.	

<b>Reference books</b>	
1	Kumar N. (2006). Horticulture: Principles and practices. New India Publishing agency, New Delhi 88.
2	Sundararajan, J.S., Muthuswamy, J., Shanmugavelu, K.G. and Balakrishnan, R. A Guide to Horticulture. Thiruvankadam Printers, Coimbatore.
3	Bhattacharjee, S.K. (2006). Advances in Ornamental Horticulture. Pointer Publications, Jaipur.
4	Jitendra Singh. (2014). Basic Horticulture. Kalyani Publishers, Chennai.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_ag11/preview">https://swayam.gov.in/nd2_cec20_ag11/preview</a>
2	<a href="https://swayam.gov.in/nd2_cec20_bt13/preview">https://swayam.gov.in/nd2_cec20_bt13/preview</a>
3	<a href="https://swayam.gov.in/nd1_noc20_cell1/preview">https://swayam.gov.in/nd1_noc20_cell1/preview</a>
4	<a href="https://swayam.gov.in/nd1_noc19_ag04/preview">https://swayam.gov.in/nd1_noc19_ag04/preview</a>
5	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/50">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/50</a>
6	<a href="https://nptel.ac.in/courses/126/105/126105009/">https://nptel.ac.in/courses/126/105/126105009/</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	S	S	S	S	S
<b>CO2</b>	S	S	S	M	M	S	S	S	S	S
<b>CO3</b>	S	S	S	M	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



<b>Course code</b>	<b>ELECTIVE I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/ Supportive</b>	<b>A. APPLIED MICROBIOLOGY</b>	<b>60</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on Microbes, enzymes, and different techniques of the subjects gained during Class XII other sources.</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	

**Course Objectives:**

The main objectives of this course are to:

1. Learn about the various applied aspects of microbiology, special reference to fermentation and types of fermenters.
2. Find out about water microbiology, purification, antibiotics and mode of action (penicillin), immunology with reference to antigen and antibody reaction
3. Overview food microbiology: milk, pasteurization, cheese, microbial flora of fresh food and botulism.
4. Study about Industrial microbiology: Manufacture of alcohol, antibiotics, vitamins, enzyme, amino acids and organic acid.
5. Know about biocides for microbes, microbial biotechnology and pollution control.

**Expected Course Outcomes:**

On the successful completion of the course, students are able to:

1	Get a thorough knowledge about water microbiology, water sanitary quality, control of microbes through chemotherapy and antibiotics, basic principles of immunology.	K 1
2	Understand fermentation, kinds of fermenters, media and sterilization.	K 2
3	Know about food microbiology, dairy products, milk preservation, contamination of food and food poisoning.	K 2
4	Learn the methods of industrial production of ethanol, streptomycin, vitamin- B12, cellulose, glutamic acid and citric acid.	K 3
5	Figure out biocides for bacteria, protozoa, fungi, actinomycetes along with microbial biotechnology and pollution control.	K 5

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Course code	ELECTIVE I				L	T	P	C
Core/Elective/ Supportive	B. PLANT PATHOLOGY				60	-	-	4
Pre-requisite	Knowledge on host, pathogen, disease, symptoms, virulence and management of crops gained during Class XII.				Syllabus Version		2022-2023	
<p><b>Course Objectives:</b></p> <p>The main objectives of this course are to:</p> <ol style="list-style-type: none"> <li>1. Study about historical account of plant pathology, various definition and Koch's postulates.</li> <li>2. Learn about classification of plants diseases, pathogenesis and factors affecting infection.</li> <li>3. Gain knowledge about the role of enzymes and toxins in relation to plant diseases.</li> <li>4. Understand few fungal diseases and symptoms along with disease cycle and control measure.</li> <li>5. Discovery of disease management.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, students are able to:								
1	Learn the taxonomic characters and life cycle of pathogens.						K 3	
2	Understand and interpret scientific literature pertaining to plant pathology and related disciplines.						K 2	
3	Study of mechanism of disease development, host-pathogen interactions and pathogenesis.						K 3	
4	Analyze the dissemination of pathogens, factors governing outbreak of diseases and pathogenesis						K 4	
5	Know about the role of enzymes and toxins in relation to plant diseases						K 3	
6	Creating awareness on disease management methods, various control methods and produce disease resistant varieties.						K 5	
<p><b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create</p>								

<b>Unit:1</b>	<b>INTRODUCTION TO PLANT PATHOLOGY</b>	<b>12 Hours</b>
Introduction, historical account of plant pathology, definition- pathogen ,disease , virulence, resistance/ susceptibility, epidemics ;brief account of major epidemics, koch's postulates.		
<b>Unit:2</b>	<b>HOST PATHOGEN INTERACTION</b>	<b>12 Hours</b>
Classification of plant diseases, dissemination of propagules of pathogens, factors governing outbreak of diseases. Pathogenesis- inoculum, inoculum potential, host-pathogen interaction, factors affecting infections.		
<b>Unit:3</b>	<b>PATHOGENESIS</b>	<b>12 Hours</b>
Role of enzymes in disease development, cell wall degrading enzymes. Toxins in relation to plant diseases: general account, mode of action and types.		
<b>Unit:4</b>	<b>FUNGAL DISEASES</b>	<b>12 Hours</b>
Fungal diseases and deficiency symptoms: symptoms, causal organism, disease cycle and control measures of the following fungal diseases- club root of crucifers, powdery mildew of wheat, late blight of potato. deficiency symptoms - general account, measures to rectify.		
<b>Unit:5</b>	<b>DISEASE MANAGEMENT</b>	<b>12 Hours</b>
Disease management: Legislative methods, culture methods, soil and sand treatment, biological control, chemical control, control through resistant varieties.		
<b>PRACTICAL</b>		
Study of plant diseases mentioned in the theory- symptoms, causal organisms and control measures.		
	<b>Total Lecture hours</b>	<b>60 Hours</b>
<b>Text Books</b>		
1	Mehrotra, R.S. (2003). Plant Pathology (Second edition). Tata McGraw-Hill Education, New Delhi.	
2	Pandey, B.P. (2001). Plant Pathology. S. Chand & Company Limited, New Delhi	
3	Bilgrami, K.S. and Dubey, R.C. (1985). Text book of Modern Plant Pathology. Vikas Publishing House Private Limited, New Delhi.	
4	Rangaswamy, G. (1972). Diseases of crop plants in India. Prentice Hall of India. Pvt., Ltd., New Jersey.	

<b>Reference Books</b>	
5	Rangasami, G. and Mahadevan, A. (1998). Diseases of Crop Plants in India. Prentice Hall of India Ltd. New Delhi.
6	Bap Reddy, D. and Joshi, N.C. (1991). Plant Protection in India (Second Edition). Allied Publishers Ltd., New Delhi.
7	Vasishta BR & Sinha AK. 2003. Botany for degree students: Fungi. S Chand and Company Ltd., New Delhi.
8	Mehrotra, RS & Aneja, KR. 1999. An Introduction to Mycology, 2nd Ed. New Age International Publishers, New Delhi..

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="https://www.classcentral.com/course/swayam-plant">https://www.classcentral.com/course/swayam-plant</a> .
2	<a href="https://www.classcentral.com/report/swayam-moocs-course-list">https://www.classcentral.com/report/swayam-moocs-course-list</a>
3	<a href="https://bsppjournals.onlinelibrary.wiley.com/journal/13653059">https://bsppjournals.onlinelibrary.wiley.com/journal/13653059</a>
4	<a href="https://onlinefreecourse.com/a-complete-list-of..">https://onlinefreecourse.com/a-complete-list-of..</a>
5	<a href="https://www.acsedu.com/Courses/plant-pathology-481.aspx">https://www.acsedu.com/Courses/plant-pathology-481.aspx</a>
6	<a href="https://ugemoocs.inflibnet.ac.in/ugemoocs/moocs_courses...">https://ugemoocs.inflibnet.ac.in/ugemoocs/moocs_courses...</a>
7	<a href="https://epp-online.cals.ncsu.edu/plant-pathology">https://epp-online.cals.ncsu.edu/plant-pathology</a>
8	<a href="https://apniphysics.com/information/swayam-students-learning-portal">https://apniphysics.com/information/swayam-students-learning-portal</a>
9	<a href="https://nptel.ac.in/courses/102/103/102103016">https://nptel.ac.in/courses/102/103/102103016</a>

**Mapping with Programme Outcomes**

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	S	S	S	M	S
<b>CO2</b>	S	S	S	M	S	S	S	S	S	S
<b>CO3</b>	S	S	S	M	S	S	M	S	M	S
<b>CO4</b>	S	S	M	S	M	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	M	S	M	M	S
<b>CO6</b>	S	S	S	S	S	S	S	M	S	M

\*S-Strong;

M-Medium;

L-Low

Course code	ELECTIVE I				L	T	P	C
Core/Elective/ Supportive	C : ECONOMIC BOTANY				60	-	-	4
Pre-requisite	Basic knowledge of pulses, cereals, spices and medicinal plants gained during Class XII.				Syllabus Version		2022-2023	
<b>Course Objectives:</b>								
The main objectives of this course are :								
1. To introduce the students about origin of cultivated plants.								
2. To impart the values of cereals and legumes and sugar and starches.								
3. To introduce the students about spices, sources of oils and fats.								
4. Exposure to drug-yielding plants, bio fuels, natural rubbers.								
5. To impart knowledge on timber and fibre yielding plants.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, students are able to:								
1	Get a thorough knowledge about origin, distribution botanical name, family and economic importance of various plant resources.						K 1	
2	Understand plant morphology and identifying the plants based on that						K 2	
3	Recognize members of the major families by identifying their diagnostic features and economic importance.						K 3	
4	Get an idea about storage and preservation techniques.						K 4	
5	Evaluate the medicinal importance of certain plant groups.						K 5	
6	Inculcating trading, conservation and sustainable utilization of economically important products						K 4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								

<b>Unit:1</b>	<b>INTRODUCTION</b>	<b>12 Hours</b>
Scope of economic botany, origin, distribution, cultivation and economic importance of cereal - paddy, wheat; pulses- red gram, chick pea; oil crops -ground nut, sesame and nuts-almond, cashew.		
<b>Unit:2</b>	<b>PROCESSING OF PLANT PRODUCTS - I</b>	<b>12 Hours</b>
Origin, distribution, binomial, family, processing and uses of spices and condiments -cinnamon, mustard; cosmetics-henna, aloe; essential oils-clove oil; beverages- tea, coffee.		
<b>Unit:3</b>	<b>PROCESSING OF PLANT PRODUCTS - II</b>	<b>12 Hours</b>
Origin, distribution, binomial, family, processing and uses of timber-teak, fibres- jute, cotton; dyes – <i>Indigofera</i> ,sugar and rubber.		
<b>Unit:4</b>	<b>STORAGE OF PLANT PRODUCTS</b>	<b>12 Hours</b>
Storage facilities and post-harvest management of cereals, pulses, oil crops, nuts and spices and condiments.		
<b>Unit:5</b>	<b>TRADING AND CONSERVATION OF PLANT PRODUCTS</b>	<b>12 Hours</b>
Trading of economically important products. ( general account only) conservation and sustainable utilization of economically important products.		
<b>PRACTICAL</b>		
<ol style="list-style-type: none"> <li>1. Identification and study of economically useful plants mentioned in theory - common name, binomial name, family, useful parts and uses.</li> <li>2. Study of processing methods of products given in the syllabus (Aloe, tea, coffee, cotton, sugar and rubber).</li> </ol>		
<b>Total Lecture hours</b>		<b>60 Hours</b>

<b>Text books</b>	
1	Pandey, B.P. (2000). Economic Botany. S. Chand & Company Ltd., New Delhi.
2	Verma, V. (2006). A textbook of Economic Botany. Emky Publication, New Delhi.
3	Sambamoorthy A.V and N.S. Subramanyam. (1989). A text book of Economic Botany. Wilay Easters, New Delhi.
4	Ashok Bendre and Ashok Kumar (1998-99). Economic Botany. Rastogi Publications, Meerut
<b>References books</b>	
1	Hill, A.W. (1952). Economic Botany. Tata McGraw–Hill Publishing Co., New Delhi.

	Sen, S. (1992). Economic Botany. New Central Book Agency, Calcutta.
	Govinda Praksh and Sharma, S.K. (1975). Introductory Economic Botany. Jai Prakash Nath, Meerut.
	Gupta, S.K. and Kaushik, M.P. (1973). An Introduction to Economic Botany. K. Nath & Co., Meerut.
	<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>
	<a href="https://www.springer.com/journal/12231">https://www.springer.com/journal/12231</a>
	<a href="https://en.wikipedia.org/wiki/Santos_Museum_of_Economic_Botany">https://en.wikipedia.org/wiki/Santos_Museum_of_Economic_Botany</a>
	<a href="https://en.wikipedia.org/wiki/Economic_Botany_(journal)">https://en.wikipedia.org/wiki/Economic_Botany_(journal)</a>
	<a href="http://www.econbot.org/index.php?module=content&amp;type=user&amp;func=view&amp;pid=21">www.econbot.org/index.php?module=content&amp;type=user&amp;func=view&amp;pid=21.</a>
	<a href="https://swayam.gov.in/NPTEL">https://swayam.gov.in/NPTEL</a>
	<a href="https://swayam.gov.in/nc_details/NPTEL">https://swayam.gov.in/nc_details/NPTEL</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	S	M
<b>CO2</b>	S	S	M	S	M	S	S	M	S	M
<b>CO3</b>	S	S	M	S	S	M	S	M	M	M
<b>CO4</b>	S	S	S	S	M	S	S	M	M	M
<b>CO5</b>	S	S	M	S	S	S	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	ELECTIVE PAPER II			L	T	P	C
Core/Elective/ Supportive	A : CONCEPTS AND TECHNIQUES OF BIOTECHNOLOGY			75	-	-	4
Pre-requisite	Basic knowledge on structure and application of DNA, recombinant DNA technology and plant tissue culture techniques gained during Class XII.			Syllabus Version		2022-2023	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>Deal with definition, history and importance of Biotechnology and to learn the techniques in plant tissue culture.</li> <li>Learn about anther culture, cybrids, synthetic seeds and in vitro establishment of mycorrhizae.</li> <li>Understand various genetic engineering procedures.</li> <li>Study about RNDA technology</li> <li>Know about the principles and uses of molecular diagnostic tools and their applications.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, students are able to:							
1	Study about the development of Biotechnology and Plant tissue culture techniques.			K 1			
2	Understand anther culture, androgenic haploids, protoplast culture, somatic hybridization, cybrids, and mycorrhizae establishment.			K 2			
3	Understand various Genetic engineering techniques.			K 3			
4	Overview cloning vectors, Agrobacterium, Ti – Plasmid, direct gene transfer methods.			K 4			
5	Know the techniques of PCR, RFLP , DNA finger printing, blotting techniques and Electrophoresis.			K 5&K6			
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							



<b>Unit:1</b>	<b>INTRODUCTION TO BIOTECHNOLOGY</b>	<b>15 Hours</b>
Biotechnology - definition, history and importance, Plant tissue culture- concepts and techniques, constituents of MS and White's media. Sterilization techniques - Callogenesis, regeneration, micro propagation through somatic embryogenesis and suspension culture.		
<b>Unit:2</b>	<b>PLANT TISSUE CULTURE</b>	<b>15 Hours</b>
Anther culture, pollen culture (androgenic haploids), isolation and culture of protoplast, somaclonal variations, somatic hybridization, cybrids, synthetic seeds. In vitro establishment of mycorrhizae.		
<b>Unit:3</b>	<b>GENETIC ENGINEERING</b>	<b>15 Hours</b>
Genetic engineering - procedure for gene cloning, isolation of specific genes, enzymes used in gene cloning - polymerases, restriction endonucleases, ligases and reverse transcriptase. A brief account on genetically modified food plants		
<b>Unit:4</b>	<b>GENE CLONING IN PLANTS</b>	<b>15 Hours</b>
Cloning vectors - plasmids, phages, cosmids, transposons and YAC. Gene cloning in higher plants - use of CAMV and Agrobacterium, ti - plasmid as vehicle. Methods of direct gene transfer - electroporation, micro injection and liposomes. Isolation and screening of rDNA.		
<b>Unit:5</b>	<b>MOLECULAR DIAGNOSTIC TOOLS</b>	<b>15 Hours</b>
Principles of PCR and RFLP, Southern blotting, Applications of DNA fingerprinting techniques, Agarose gel electrophoresis.		
<b>PRACTICAL</b>		
1. Preparation of M.S. Medium-sterilization and inoculation of explants.		
2. Synthetic seed preparation.		
3. Isolation of protoplast – Mechanical method		
4. Spotters – Ti Plasmid, Agrobacterium , Agarose gel electrophoresis, PCR , Southern blotting - observation of photographs.		
<b>Total Lecture hours</b>		<b>75 Hours</b>

<b>Text books</b>	
1	Dubey. R.C. (1996). A Text Book of Biotechnology. Rastogi Publications, Meerut.
2	Kumaresan, V.K. (2003). Biotechnology. Saras Publications, Kanyakumari
3	Ignacimuthu, S. (1996). Applied Plant Biotechnology. Tata McGraw Hill Publishing Company Ltd., New Delhi.
4	Ignacimuthu, S. (1996). Basic Biotechnology. 1996. Tata McGraw Hill Publishing Company Ltd., New Delhi.
5	Gupta, P.K. (2004). Elements of Biotechnology, 2004. Rastogi Publications, Meerut.

<b>Reference books</b>	
1	Ignacimuthu, S. (1997). Plant Biotechnology. Tata McGraw Hill Publishing Company Ltd., New Delhi.
2	Chhatwal. (1995). Text book of Biotechnology. Anmol Publications Pvt. Ltd., New Delhi. .
3	Parihar, P. (2014). A Textbook of Biotechnology. Argobios Publications, Jodhpur
4	Kumar, H.D. (1991). A Textbook on Biotechnology. East west press, New Delhi.
5	Bernard R Glick & Jack J Pasternak. 2001. Molecular biotechnology principles and applications of recombinant DNA, (2nd Edition), ASM Press, Washington, D.C.
6	George, EF & Sherrington, PD. 1984. Plant propagation by Tissue culture, Exegetics, London.
7	Gamborg, OL & Phillips, GC. 1995. Plant cell, Tissue and Organ culture, Narosa , New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt07/preview">https://swayam.gov.in/nd2_cec20_bt07/preview</a>
2	<a href="https://www.classcentral.com/course/swayam-principles-of-biotechnology-17738">https://www.classcentral.com/course/swayam-principles-of-biotechnology-17738</a>
3	<a href="https://swayam.gov.in/nc_details/NPTEL">https://swayam.gov.in/nc_details/NPTEL</a>
4	<a href="https://www.classcentral.com/course/swayam..">https://www.classcentral.com/course/swayam..</a>
5	<a href="https://www.classcentral.com/report/list-of-mooc-based-microcredentials">https://www.classcentral.com/report/list-of-mooc-based-microcredentials</a>
6	<a href="https://nptel.ac.in/courses/102/103/102103015">https://nptel.ac.in/courses/102/103/102103015</a>
7	<a href="https://swayam.gov.in/NPTEL">https://swayam.gov.in/NPTEL</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>

\***S**-Strong; **M**-Medium; **L**-Low

Course code	ELECTIVE PAPER II			L	T	P	C
Core/Elective/ Supportive	B : SEED BIOLOGY			75	-	-	4
Pre-requisite	Knowledge on seeds, germination, viability and seed dormancy gained during lower classes.			Syllabus Version		2022-2023	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Study the morphology, structural details of economically important seeds .							
2. Know about chemical composition and seed germination techniques .							
3. Perform seed germination test							
4. Understand seed viability, tetrazolium test and seed vigour test							
5. Learn dormancy, kinds of dormancies and significant factors to break dormancy							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, students are able to:							
1	Understand seed biology and morphology of different seeds..			K 1 & K 2			
2	Learn about seed viability test (Tetrazolium test), seed vigour concepts .			K 3			
3	Know about chemical composition of the above seeds, their germination, factors affecting it and treatment to quicken germination.			K 4			
4	Gain knowledge on germination tests of various seeds and seed germination.			K 5			
5	Overview what is dormancy, significance and how to break it.			K 6			
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							

<b>Unit:1</b>	<b>INTRODUCTION TO SEED BIOLOGY</b>	<b>15 Hours</b>
Morphology and structural details of seeds: Cereals : Paddy / Wheat, Pulses : Dolichos /Glycine Oil seeds : Castor Fibers : Cotton Vegetables : Cucurbita Study on importance of seed.		
<b>Unit:2</b>	<b>SEED GERMINATION</b>	<b>15 Hours</b>
Chemical composition of seeds mentioned above. Germination - General account. Factors affecting germination. Changes that take place during germination (physical and chemical) Treatments given to quicken germination.		
<b>Unit:3</b>	<b>SEED GERMINATION TEST AND EVALUATION</b>	<b>15 Hours</b>
Seed germination test under laboratory conditions. Using paper (BP & TP) sand and soil. The environmental test conditions also are discussed. Evaluation of germination test.		
<b>Unit:4</b>	<b>SEED VIABILITY</b>	<b>15 Hours</b>
Seed viability; Topographical Tetrazolium Test. Preparation of solution and methods of application & evaluation. Seed vigour: Concept, Direct and Indirect vigour tests.		
<b>Unit:5</b>	<b>SEED DORMANCY</b>	<b>15 Hours</b>
Dormancy – Primary and secondary dormancies. Significance, factors involved, methods used to break dormancy.		
<b>PRACTICAL</b> 1. Seed germination test. 2. Evaluation of seedlings: Qualitative estimation of carbohydrates, proteins and lipids. 3. Tetrazolium test.		
<b>Total Lecture hours</b>		<b>75 Hours</b>
<b>Text Books</b>		
1	Germination of seeds – Mayer A. M & Poljakoff Mayer – 1975	
2	Seed physiology -Bryant J . A 1985 –Edward Arnold , London .	
3	Agarwal R. L. (1982). Seed Technology -. Oxford and IBH Publishing Company, New Delhi.	
4	Bewley, J.D and M. Black (1978). Seed Biology Vol. I & II Academic press, New York	

<b>References books</b>	
1	Mayer, AM and Poljakoff-Mayber, A (1989) The Germination of Seeds 4th edn. Pergamon Press, England.
2	Baskin, CC and Baskin, JM (2001). Seeds: Ecology, Biogeography and Evolution of Dormancy and Germination, Academic Press, San Diego.
3	Bedell, PE. (1998) Seed Science and Technology: Indian Forestry Species. Allied Publishers Limited, New Delhi.
4	Bewley, JD and Black M (1994) Seeds: Physiology of Development and Germination. 2nd edn. Plenum Press, New York.
5	Khan, A.A. (Latest Edition) (Ed.). The Physiology and Biochemistry of seed Dormancy and germination. North-Holland Publishing Company: Amsterdam New York- Oxford.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nc_details/NPTEL">https://swayam.gov.in/nc_details/NPTEL</a>
2	<a href="https://swayam.gov.in/NPTEL">https://swayam.gov.in/NPTEL</a>
3	<a href="https://swayam.gov.in/explorer">https://swayam.gov.in/explorer</a>
4	<a href="https://www.classcentral.com/course/swayam-principles-of-seed-technology-17741">https://www.classcentral.com/course/swayam-principles-of-seed-technology-17741</a>
5	<a href="https://www.classcentral.com/course/swayam-plant-groups-19787">https://www.classcentral.com/course/swayam-plant-groups-19787</a>
6	<a href="https://www.kanchiuniv.ac.in/assets/SWAYAM-BOOKLET.pdf">https://www.kanchiuniv.ac.in/assets/SWAYAM-BOOKLET.pdf</a>
7	<a href="https://www.hindiyojana.in/swayam-free-online-course-registration/">https://www.hindiyojana.in/swayam-free-online-course-registration/</a>
8	<a href="https://www.aicte-india.org/sites/default/files/SWAYAM_1.pdf">https://www.aicte-india.org/sites/default/files/SWAYAM_1.pdf</a>
9	<a href="https://www.swayamprabha.gov.in/">https://www.swayamprabha.gov.in/</a>

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>ELECTIVE II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/ Supportive</b>	<b>C: POMOLOGY</b>	<b>75</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on fruit cultivation, harvesting and disease management gained during Class XII.</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	

**Course Objectives:**

The main objectives of this course are to:

1. Understand Pomology, tropical fruit cultivation, its status, fruit growing regions of India and in Tamil Nadu
2. Find out the overall strategies and techniques to grow different commercial fruits.
3. Impart knowledge on cultivation methods of some prominent fruit varieties.
4. Learn about the cultivation methods of subtropical and tropical fruits.
5. Study about temperate fruits and their propagation methods.

**Expected Course Outcomes:**

On the successful completion of the course, students are able to:

1	Gain information about cultivation of Indian fruits	K 1
2	Understand pomology, tropical fruit cultivation of India.	K 2
3	Identify methods for producing subtropical humid zone fruits	K 3& K4
4	Get a thorough knowledge about classification and production methods of temperate fruits.	K 5
5	Learn about the production of export varieties of fruits.	K 5&K6

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

<b>Unit:1</b>	<b>INTRODUCTION TO TROPICAL FRUITS</b>	<b>15 Hours</b>
Tropical fruits cultivation - past and present status of tropical fruits in india, general appraisal of fruit growing regions / zones in India and Tamil Nadu.		
<b>Unit:2</b>	<b>TROPICAL FRUIT CULTIVATION</b>	<b>15 Hours</b>
Production, productivity, varieties- exportable varieties, climate and soil requirements - propagation techniques & planting. Nutrition-nutrient deficiency and management, flowering, fruit set, bearing problems , special horticultural technique. Harvesting techniques – post harvest handling & post-harvest treatments, ripening of fruits - storage and processing of Mango & Banana.		
<b>Unit:3</b>	<b>EDAPHIC FACTOR FOR FRUIT CULTIVATION</b>	<b>15 Hours</b>
Climate and soil environments- varieties- propagation-planting requirements, manures and manuring of papaya, guava, sapota, lemon, sweet orange, jack fruit and pine apple.		
<b>Unit:4</b>	<b>MANAGEMENT OF FRUIT CROPS</b>	<b>15 Hours</b>
Subtropical and humid zones of India and Tamil Nadu – importance and scope of fruit crops in these zones – varieties, propagation and planting and aftercare, management of nutrient – water needs – weed management – training and pruning method, physiology of flowering, use of plant growth regulators – harvesting procedures – post harvest aspects of the following crops: Mandarin, Avocado, Litchi, Carambola.		
<b>Unit:5</b>	<b>PRODUCTION AND POST HARVEST MANAGEMENT OF FRUIT CROPS</b>	<b>15 Hours</b>
Classification of temperate fruits, detailed study of area, production, varieties, climate and soil requirements, propagation , planting density , cropping systems, training and pruning, use of growth regulators, nutrient and weed management , harvesting – post harvest handling and storage in the following crops: Apple, Pear, Plum, Strawberry, Cherries.		
<b>PRACTICAL</b>		
Identify the fruits and their products mentioned in the syllabus with binomial, family and uses.		
<b>Total Lecture hours</b>		<b>75 Hours</b>



<b>Text books</b>	
1	Bose, T. K. S. K. Mitra, and D. S. Rathore. 1998. Temperate Fruits – Nayaprakash, Calcutta.
2	Bose, T. K. 1996. Fruits of India – Tropical and sub – tropical. Nayaprakash, Calcutta.
3	Bose T.K. S. K. Mitra and M. K. Sadhu. 1988 Mineral Nutrition of Fruit Crops. Naya Prokash, Calcutta.
4	Bose, T. K., S. K. Mitra and D. Sanyal, 2001. Fruits: Tropical and subtropical volume I. Naya Udyog, Calcutta.
5	Chattopadhyay, T. K. 1994. A text book of Pomology (Vol 1-3), Kalyani Publishers, New Delhi.
6	Dr. Rajaneesh Singh and Dr. Bijendrakumar Singh, 2020 Basic Horticulture and Fruit Production Technology, New India Publishing Agency, New Delhi.
7	Fruit culture in India (1967) Singh, S., Krishnamoorthy. S., and Katyal, S. L. ICAR, New Delhi.

<b>Reference books</b>	
1	Fruits: Tropical and subtropical (1990) T. K. Bose & S. K. Mitra, Nayaprakash, 206 Bidhan Saram, Calcutta – 700 116, India.
2	Temperate fruits (1990) – S. K. Mithra, T. K. Bose and D. S. Rathore. Horticulture and Allied Publisher.
3	Anil Kumar Shukla , et.,al 2020, Fuit Breeding, New India Publishing Agency, New Delhi.
4	Pal, J.S. 1997. Fruit Growing, Kalyani Publishers, New Delhi.
5	Shanmugavelu, K. G. 1987. Production technology of fruit crops SBA Publications, Calcutta.
6	Singh, S. S. Krishanmurthi and S. L Katyal 1967. Fruit culture in India, ICAR, New Delhi.
7	Singh, S. P. 1995. Commercial Fruits, Kalyan Publishers, Ludhiyana.

8	Veeraraghavathatham, D., M. Jawaharlal, S. Jeeva and S. Rabindran 1996. Scientific Fruit culture, Suri Associates, Coimbatore.
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**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="https://swayam.gov.in/nc_details/NPTEL">https://swayam.gov.in/nc_details/NPTEL</a>
2	<a href="https://swayam.gov.in/NPTEL">https://swayam.gov.in/NPTEL</a>
3	<a href="https://swayam.gov.in/">https://swayam.gov.in/</a>
4	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>
5	<a href="https://www.hindiyojana.in/swayam-free-online-course-registration/">https://www.hindiyojana.in/swayam-free-online-course-registration/</a>
6	<a href="http://www.openculture.com/free_certificate_courses">http://www.openculture.com/free_certificate_courses</a>
7	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php</a>
8	<a href="https://www.indiacustomercare.com/swayam-online-education-toll-free-number-18001219025">https://www.indiacustomercare.com/swayam-online-education-toll-free-number-18001219025</a>
9	<a href="https://www.britannica.com/science/pomology">https://www.britannica.com/science/pomology</a>
10	<a href="https://www.thefreedictionary.com/pomology">https://www.thefreedictionary.com/pomology</a>

**Mapping with Programme Outcomes**

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>

\*S-Strong; M-Medium; L-Low

Course code	ELECTIVE III				L	T	P	C
Core/Elective/ Supportive	A : APPLIED BIOTECHNOLOGY				75	-	-	4
Pre-requisite	Basic knowledge on Transgenic plants, hormones, vaccines, Antibiotics, Monoclonal antibodies, SCP, VAM, Bio-energy gained during Class XII.				Syllabus Version		2022-2023	
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Understand food Biotechnology, mass cultivation of SCP, mushrooms.</li> <li>2. Learn to produce Biofertilizers and its mass cultivation techniques.</li> <li>3. Study about application of genetic engineering in various fields.</li> <li>4. Able to understand biocontrol methods of pathogens and weeds.</li> <li>5. Understand the various Biofuels and its applications.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, students are able to:								
1	Gain knowledge about Applied Biotechnology.					K 1		
2	Understand about biofuels, microbial production of hydrogen, biogas, petrochemical plants and biodiesel plants.					K 2		
3	Gain knowledge about mass cultivation of <i>Rhizobium</i> , <i>Azospirillum</i> , BGA, <i>Phosphobacteria</i> and VAM.					K 3		
4	Overview transgenic plants- special importance in agriculture, production of insulin, hormones, vaccines, antibiotics, monoclonal antibodies and hybridoma techniques.					K 4		
5	Create biocides to control pathogens , weeds, production of secondary metabolites and enzymes engineering.					K 5&K6		
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create								

<b>Unit:1</b>	<b>FOOD TECHNOLOGY</b>	<b>15 Hours</b>
Food Technology - SCP as microbial food for future, mass cultivation and nutritional value of <i>Spirulina</i> , <i>Scenedesmus</i> , Yeast and <i>Methylophilus</i> . Mushroom Technology - Cultivation techniques and nutritional value of <i>Pleurotus sajor</i> and <i>Agaricus bisporus</i> .		
<b>Unit:2</b>	<b>BIOFERTILIZERS</b>	<b>15 Hours</b>
Biofertilizers - Advantages mass cultivation and application technique of <i>Rhizobium</i> , <i>Azospirillum</i> , Blue Green Algae (nitrogen fixers), <i>Phosphobacteria</i> , and VAM.		
<b>Unit:3</b>	<b>APPLICATION OF GENETIC ENGINEERING</b>	<b>15 Hours</b>
Application of genetic engineering in agriculture (transgenic plants) medicine and insulin, hormones, vaccines, antibiotics, monoclonal antibodies and hybridoma techniques.		
<b>Unit:4</b>	<b>BIOLOGICAL CONTROL OF PATHOGENS AND WEEDS</b>	<b>15 Hours</b>
Biological control of pathogens and weeds through engineered microbes - <i>Bacillus thuringiensis</i> , mycoherbicides and insects, production of secondary metabolites. Bacterial toxins and penicillin. Enzymes engineering and its uses.		
<b>Unit:5</b>	<b>BIOFUEL</b>	<b>15 Hours</b>
Biofuel. Biomass and bio-energy, production of hydrogen. Biogas. Petrochemical plants <i>Calotropis/Heavia</i> . Biodiesel- <i>Jatropha</i> - source of alternate fuel.		
<b>PRACTICAL</b>		
1. Cultivation of <i>Pleurotus sajor</i> . 2. Culture of Yeast, <i>Spirulina</i> , <i>Nostoc</i> and <i>Azolla</i> . 3. Demonstration of biofertilizers – <i>Azospirillum</i> ; <i>Agrobacterium</i> ; antibiotics - specimens or slides or photographs. 4. Petrochemical and biodiesel plants - specimens.		
<b>Total Lecture hours</b>		<b>75 Hours</b>
<b>Text books</b>		
1	Dubey. R.C. (1996). A Text Book of Biotechnology. Rastogi Publications, Meerut.	
2	Kumaresan, V.K. (2003). Biotechnology. Saras Publications, Kanyakumari	
3	Ignacimuthu, S. (1997). Plant Biotechnology. Tata McGraw Hill Publishing Company Ltd., New Delhi.	
4	Gupta, P.K. (2004). Elements of Biotechnology, 2004. Rastogi Publications, Meerut	

<b>References books</b>	
1	Parihar, P. (2014). A Textbook of Biotechnology. Argobios Publications, Jodhpur
2	Kumar, H.D. (1991). A Textbook on Biotechnology. East west press, New Delhi.
3	Ignacimuthu, S. (1996). Applied Plant Biotechnology. Tata McGraw Hill Publishing Company Ltd., New Delhi.
4	Ignacimuthu, S. (1996). Basic Biotechnology. 1996. Tata McGraw Hill Publishing Company Ltd., New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/explorer">https://swayam.gov.in/explorer</a>
2	<a href="https://swayam.gov.in/nd1_noc19_bt15/preview">https://swayam.gov.in/nd1_noc19_bt15/preview</a>
3	<a href="https://swayam.gov.in/nd1_noc19_bt20/preview">https://swayam.gov.in/nd1_noc19_bt20/preview</a>
4	<a href="https://nptel.ac.in/AICTE_FDP/">https://nptel.ac.in/AICTE_FDP/</a>
5	<a href="https://www.classcentral.com/report/swayam-moocs-course-list/">https://www.classcentral.com/report/swayam-moocs-course-list/</a>
6	<a href="https://iubmb.onlinelibrary.wiley.com/journal/14708744">https://iubmb.onlinelibrary.wiley.com/journal/14708744</a>
7	<a href="https://www.springer.com/journal/253">https://www.springer.com/journal/253</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>

\*S-Strong; M-Medium; L-Low

Course code	ELECTIVE III				L	T	P	C
Core/Elective/ Supportive	B : ETHNOBOTANY				75	--	-	4
Pre-requisite	Basic knowledge on interrelations between humans and plants. Indigenous knowledge of plants and classification, cultivation.				Syllabus Version		2022- 2023	
<p><b>Course Objectives:</b> The main objectives of this course are to:</p> <ol style="list-style-type: none"> <li>1. Learn about concepts, scope and objectives of Ethnobotany and ethnic groups.</li> <li>2. Study the methodology of Ethnobotany and plants used by Tribes.</li> <li>3. Appreciate Tribal medicines and its role in modern medicine.</li> <li>4. Role of Ethnic group in conservation.</li> <li>5. Inculcate Ethnobotany as a source of drugs.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, students are able to:								
1	Overview multidisciplinary aspects of Ethnobotany and have an idea about Ethnic groups.					K 1		
2	Understand significance of various Tribal medicines.					K 2		
3	Impart methodology of Ethnobotany and plants used by tribes.					K 3		
4	Know the responsibility of conservation of plant genetic resources by Tribes.					K 4		
5	Imbibe Ethnobotany as a definite source of drug.					K 5&K6		
<p><b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create</p>								

<b>Unit:1</b>	<b>INTRODUCTION</b>	<b>15 Hours</b>
Ethnobotany: Introduction, concept, scope and objectives. Ethnobotany as an interdisciplinary science. The relevance of Ethnobotany in the present context, major ethnic groups in Tamil Nadu. (Any five)		
<b>Unit:2</b>	<b>ETHNOBOTANICAL STUDIES</b>	<b>15 Hours</b>
Methodology of Ethnobotanical studies. a) field work b) herbarium c) ancient literature d) temples and sacred places, plants used by the tribals: a) food plants b) intoxicants and beverages c) resins and oils and miscellaneous uses.		
<b>Unit:3</b>	<b>PLANTS AND TRIBAL MEDICINE</b>	<b>15 Hours</b>
Plants and Tribal medicine: Significance of the following plants in ethno botanical practices (along with their habitat and morphology) a) <i>Azadiractha indica</i> b) <i>Ocimum sanctum</i> c) <i>Dodonaea viscosa</i> . d) <i>Gloriosa superba</i> e) <i>Ruta graveolens</i> f) <i>Pongamia pinnata</i> g) <i>Cassia auriculata</i> h) <i>Indigofera tinctoria</i> . Role of ethnobotany in modern medicine with special example <i>Rauwolfia serpentina</i> ., <i>Trichopus zeylanicus</i> .		
<b>Unit:4</b>	<b>ROLE OF ETHNOBOTANY</b>	<b>15 Hours</b>
Role of ethnic groups in conservation of plant genetic resources, Participatory forest management. Sharing of wealth concept with few examples from India.		
<b>Unit:5</b>	<b>ETHNOBOTANY AND DRUG DEVELOPMENT</b>	<b>15 Hours</b>
Ethnobotany as a source of drug. a) Reserpine b) Artemisin c) Gulipid d) Cocaine e) Strychnine.		
<b>PRACTICAL</b>		
Identify the plants and plant products mentioned in the syllabus with common name, binomial, family with ethnobotanical significance.		
<b>Total Lecture hours</b>		<b>75 Hours</b>
<b>Text books</b>		
1	S.K. Jain, Manual of Ethnobotany, Scientific Publishers, Jodhpur-1995.	
2	S.K. Jain (ed.) Glimpses of Indian. Ethnobotany, Oxford and I B H, New Delhi – 1981	
3	S.K. Jain (ed.) 1989. Methods and approaches in ethnobotany. Society of ethnobotanists, Lucknow	
4	S.K. Jain 1990. Contributions of Indian ethnobotny. Scientific publishers, Jodhpur, India.	

<b>Reference books</b>	
1	Cotton C.M. 1997. Ethnobotany – Principles and applications. John Wiley and sons – Chichester
2	Rajiv K. Sinha – Ethnobotany The Renaissance of Traditional Herbal Medicine – INA – SHREE Publishers, Jaipur-1996.
3	Faulks, P.J. 1958. An introduction to Ethnobotany, Moredale pub. Ltd. London.
4	Gary J Martin, 2008. Ethnobotany A Methods manual, Earth scan, London.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://www.herbs.org/links/linksethno.htm">www.herbs.org/links/linksethno.htm</a>
2	<a href="http://naeb.brit.org/">http://naeb.brit.org/</a>
3	<a href="https://www.starlink.com">https://www.starlink.com</a>
4	<a href="https://www.websiteplanet.com/webtools/sharelink">https://www.websiteplanet.com/webtools/sharelink</a>
5	<a href="https://phytochem.nal.usda.gov/phytochem">https://phytochem.nal.usda.gov/phytochem</a>
6	<a href="https://www.fs.fed.us/wildflowers/ethnobotany/index.shtml">https://www.fs.fed.us/wildflowers/ethnobotany/index.shtml</a>
7	<a href="https://link.springer.com/book/10.1007/978-1-4615-2496-0">https://link.springer.com/book/10.1007/978-1-4615-2496-0</a>
8	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
9	<a href="https://www.classcentral.com/report/mooc-providers-list">https://www.classcentral.com/report/mooc-providers-list</a>

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S	M	S	S	S
<b>CO3</b>	S	S	M	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	M	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



<b>Course code</b>	<b>ELECTIVE III</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/ Supportive</b>	<b>C : BIOINFORMATICS</b>	<b>75</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on Database, Proteomics and Genomics gained during Class XII.</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Study about Bioinformatics and its role in Biology and sequences used in Bioinformatics.</li> <li>2. Impart knowledge on Biological Database and its types.</li> <li>3. Learn about various Database of Bioinformatics.</li> <li>4. Know about Proteomics and Genomics.</li> <li>5. Understand gene finding, protein prediction, phylogenetic analysis and drug designing.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, students are able to:					
1	Know about basics of Bioinformatics and Information technology and their relationship with biology.				K 1
2	Gain knowledge about nucleotide sequence database.				K 2
3	Understand the usage of various biological Databases.				K 3
4	Insist Biological Databases.				K 4
5	Correlate the gene prediction, , biomolecular visualization, phylogenetic analysis and drug designing in future studies.				K 5&K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>INTRODUCTION TO BIOINFORMATICS</b>	<b>15 Hours</b>			
Introduction to Bioinformatics, knowledge base in biology, information technology in biology, types of sequences used in bioinformatics- DNA and RNA sequences, protein sequences, application of bioinformatics and fields related to Bioinformatics					
<b>Unit:2</b>	<b>BIOLOGICAL DATABASES</b>	<b>15 Hours</b>			
Biological databases and its significance - objectives, properties and classification of biological					

databases, hard – link relationships between databases, symbols used in databases		
<b>Unit:3</b>	<b>GENOMICS</b>	<b>15 Hours</b>
Nucleotide Sequence Databases, Nomenclature of DNA Sequences, Structure of Nucleotide Sequence Databases, GenBank format, Gene expression Databases.		
<b>Unit:4</b>	<b>PROTEOMICS AND GENOMICS.</b>	<b>15 Hours</b>
Proteomics - Classification based on shape, composition and function; Nomenclature of protein sequences, Genomics- Comparative Genomic Databases, organism specific Genomic databases.		
<b>Unit:5</b>	<b>DRUG DESIGNING</b>	<b>15 Hours</b>
Gene finding, protein prediction, biomolecular visualization, phylogenetic analysis & drug designing.		
<b>PRACTICAL</b>		
<ol style="list-style-type: none"> <li>1. Familiarizing with the different biological data bases mentioned in the syllabus.</li> <li>2. Retrieval of nucleotide and amino acid sequence, blast search of nucleotide sequence.</li> <li>3. Retrieval of 3D structure of protein, molecular visualization using Rasmol.</li> </ol>		
<b>Total Lecture hours</b>		<b>75 Hours</b>
<b>Text books</b>		
1	Arthur, M.L. (2005). Introduction to Bioinformatics (Ed:2). Oxford University Press, New York.	
2	Attwood, T.K. and Parrysmith, D.J. (2001). Introduction to Bioinformatics. Pearson Education, New Delhi.	
3	Mani, Kand N. Vijayaraj. 2002. Bioinformatics for beginners. Kalaikathir Achakam, Coimabtoe.	
4	David W. Mount. 2001. Bioinformatics sequence and Genome analysis, Cold spring Harber Laboratory press	
<b>Reference books</b>		
1	A.D.Baxevanis and B.J.Francis(Eds) “Bio-informatics”- A practical guide to the analyzing of gene protein”-john wiley and sons(1998).	
2	Missener and A.S.Krawetg,”Bio-informatics to bio-informatics” Addison Wesley Longman Ltd (1999).	
3	A.D. Baxeavains and B.J. Franchis (Eds.). 1998. Bioinformatics- A practical guide to the analyzing of gene protein. Joha Wiley and Sons.	
4	Bioinformatics- A biologists guide to bio-computing and the internet 2000.Stuart M.Brown.	
5	Bioinformatics”Sequence and Genome analysis.2001.David W.Mount.	

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://www.ii.uib.no/~inge/list.html">http://www.ii.uib.no/~inge/list.html</a>
2	<a href="https://www.researchgate.net/">https://www.researchgate.net/</a>
3	<a href="https://academic.oup.com/nar/article/33/suppl_2/W3/2505760">https://academic.oup.com/nar/article/33/suppl_2/W3/2505760</a>
4	<a href="https://www.bioinformatics.org/">https://www.bioinformatics.org/</a>
5	<a href="http://bioinfbook.com/bioinformatics/bioinf14_mainbioinf.htm">http://bioinfbook.com/bioinformatics/bioinf14_mainbioinf.htm</a>
6	<a href="https://www.ebi.ac.uk/">https://www.ebi.ac.uk/</a>
7	<a href="https://en.wikipedia.org/wiki/Bioinformatics">https://en.wikipedia.org/wiki/Bioinformatics</a>
8	<a href="https://www.classcentral.com/course/swayam-bio-informatics-algorithms-and-applications-12890">https://www.classcentral.com/course/swayam-bio-informatics-algorithms-and-applications-12890</a>
9	<a href="https://swayam.gov.in/nd1_noc20_bt10/preview">https://swayam.gov.in/nd1_noc20_bt10/preview</a>
10	<a href="http://www.dyatil.edu/schools/biotech-and-bioinformatics/swayam-nptel-local-chapter/">http://www.dyatil.edu/schools/biotech-and-bioinformatics/swayam-nptel-local-chapter/</a>

### Mapping with Programme Outcomes

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	M	S	S	S
<b>CO2</b>	S	S	S	S	S	M	M	S	S	S
<b>CO3</b>	S	S	S	S	S	S	M	S	S	S
<b>CO4</b>	S	S	S	S	S	M	M	S	S	S
<b>CO5</b>	S	S	S	S	S	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

**CORE PRACTICAL-I (Papers I & II)**

Course code		L	T	P	C
<b>Core/Elective/Supportive</b>	<b>Core practical – I (paper I &amp; II) (21P2CP02)</b> Plant Diversity I (Algae, Fungi, Lichens, Plant Pathology); Plant Diversity II (Bryophytes, Pteridophytes, Gymnosperms and Palaeobotany)			<b>50</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge about the type specimens studied in core paper I and core paper II</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to					
<ol style="list-style-type: none"> <li>1. Get knowledge on general characters of Algae, Fungi and Bryophytes.</li> <li>2. Understand the structure and reproduction of Pteridophytes and Gymnosperms.</li> <li>3. Acquire knowledge on types and structure of Lichens.</li> <li>4. Learn the different pathogenic organisms of plants causing various diseases.</li> <li>5. Obtain knowledge on different types of fossils.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, students are able to:					
1	Understand the thallus organization and reproduction of Thallophytes and Bryophytes.				K2
2	Gain knowledge on Pteridophytes and Gymnosperms.				K1
3	Overview the different types of Lichens and their mode of reproduction.				K3
4	Implement knowledge on management of plant diseases to increase crop yield.				K4
5	Differentiate different types of fossil plants.				K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>					

Time: 3 Hrs		Max. Marks: 50
1.	Make suitable micro preparations of A & B. Draw labeled sketches. Identify, give reasons and submit the slides for valuation	2x6 = 12
2.	Identify any TWO algal members from the algal mixture C	2x5 = 8
3.	Identify, draw diagrams and write notes on D, E, F,G, and I	5x4 = 20
	Practical =	40
	Record =	10
	Total Marks =	<b>50</b>

### **CORE PRACTICAL-I (Papers I & II)**

Plant Diversity I (Algae, Fungi, Lichens, Plant Pathology); Plant Diversity II  
( Bryophytes, Pteridophytes , Gymnosperms and Palaeobotany )

#### **Key**

1	A- Algae/ Fungi/ Bryophyte B- Pteridophytes/ Gymnosperms (Identification-1, slide-2, Sketch -2 and Reasons -1)	2x6= 12
2.	C- Algal Mixture (Identification-1, Sketch-1& Notes-2)	2x4= 08
3.	D- Fungi E- Lichen/ Plant pathology F- Bryophytes G- Pteridophytes H- Gymnosperms / Palaeobotany (Identification-1,Sketch-2,Notes-1)	5x4 = 20
	Practical =	40
	Record =	10
	Total Marks =	50

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	M	S	S	S	M	M	M
<b>CO2</b>	S	M	M	M	S	S	S	M	M	M
<b>CO3</b>	S	M	S	M	S	S	S	S	M	S
<b>CO4</b>	S	S	M	S	S	S	S	M	M	S
<b>CO5</b>	S	M	S	M	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



Course code			L	T	P	C
Core/Elective/Supportive	<b>Core practical –II (paper III &amp; IV)</b> [Cell Biology and Biotechniques, Anatomy and Embryology]				50	4
Pre-requisite	<b>Basic knowledge, lab instruments, anatomical structures of plants and embryology of plants.</b>		<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to						
<ol style="list-style-type: none"> <li>1. Train in micro preparation to be familiar with the stages of mitosis (Onion root tips) with permanent slides/photographs.</li> <li>2. Elucidate the plant parts based on anatomical features.</li> <li>3. Learn the developmental stages of dicot &amp; monocot embryo.</li> <li>4. Gain knowledge on structure and function of cell organelles.</li> <li>5. Equip with skills related to working procedures of instruments used in biological laboratory.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Distinguish the different stages of cell division.					K1
2	Identify the plant parts by observing anatomical features.					K3
3	Know the developmental stages of dicot & monocot embryo.					K2
4	Gain knowledge on cell organelles.					K2
5	Able to handle instruments used in biological studies.					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						



Time: 3 Hrs		Max. Marks: 50
1	Make squash of specimen A. draw sketches, identify any one stage. Submit the slide for valuation.	6
2	Make suitable micro preparation of B & C. Draw labelled sketches. Identify giving reasons & submit the slide for valuation.	2X5= 10
3	Mount the embryo of the given specimen D and submit the slide for Valuation.	4
4	Take the peel of given leaf and identify the stomatal type E . Draw diagram and write notes.	4
5	Identify F,G,H,I & J	4x4= 16
	Practical =	40
	Record =	10
	<b>Total Marks =</b>	<b>50</b>

## CORE PRACTICAL II (PAPERS III & IV)

[Cell biology and Biotechniques, Anatomy and Embryology]

### KEY

1	A: Squash [Identification-1, Slide-3, Sketch & Notes-2]	6
2	B & C: Anatomy [Identification-1, Slide-2, Sketch-1, Notes-1]	2x5=10
3	D: Embryo Mounting (Bidens / Crotalaria/Cucumis/Cytisus) [Slide-2, Sketch & Notes-2]	4
4	E: Leaf mounting. [Identification-1, slide-1, sketch & Notes-2]	4
5	F: Cell biology G: Bio techniques H: Anatomy I : Embryology [Identification-1, Sketch-2, & Notes-1]	4x4= 16
	Practical =	40
	Record =	10
	Total Marks =	50

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	S	M	M	S	S	L	S	L	L	M
<b>CO2</b>	S	S	S	M	S	M	M	M	S	M
<b>CO3</b>	S	M	L	S	S	M	S	L	M	M
<b>CO4</b>	S	M	S	S	S	S	S	M	M	M
<b>CO5</b>	S	S	S	S	S	S	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
<b>Core/Elective/Supportive</b>	<b>Core practical –III(paper V,VI &amp; VII &amp;VIII)</b> (Taxonomy of Angiosperms and Economic Botany; Genetics, Plant Breeding, Evolution Biostatistics; Ecology and Phytogeography & Fundamentals of Microbiology)				<b>50</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in plant morphology, taxonomy, adaptations of plants, basic knowledge in plant communities, and campus flora. They must also know the basic principles in Genetics, Biostatistics and Microbiology</b>	<b>Syllabus Version</b>			<b>2022-2023</b>	
<b>The main objectives of this course are to:</b>						
<ol style="list-style-type: none"> <li>1. Observe the morphological and reproductive features of angiosperms, analyze and ascertain angiosperms to their respective families with their economic importance.</li> <li>2. Employ Mendelian inheritance practically.</li> <li>3. Carry out methods of plant breeding techniques.</li> <li>4. Employ preliminary statistical analysis and interpret plant related parameters.</li> <li>5. Observe, understand and ascertain plants to their habitat and learn about the organization of plant communities.</li> <li>6. To experiment culture of microorganisms and to maintain &amp; preserve the microbes</li> </ol>						
<b>Expected Course outcomes are:</b>						
On the successful completion of the course, students are able to:						
1	Gain efficiency in understanding the taxonomic features of angiosperms and ascertain the plant members to their respective families. Recognize the economic values of plants studied.					K3
2	Critically analyze the heredity of characters in plants and employ simple plant breeding techniques to develop hybrid plants.					K4
3	Use simple statistical methods to understand plant/crop parameters.					K5
4	Recognize and analyse the various biotic and abiotic factors that affect the vegetational types.					K4

5	Study the structure, replication and classify the microbes	K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		

Time: 3 Hrs		Max. Marks 50
1	Assign specimen A and B to its respective family giving reasons	2x4=8
2	Describe specimen C in technical terms. Draw sketches of floral Parts, Construct floral diagram & write floral formula	6
3	Make micro preparations of D. Draw labeled sketches. Submit the slide for valuation. Write down its anatomical adaptations	3
4	Analyse the plant communities present in the constructed Quadrat /Line Transect/Belt transect E by Quantitative method. Present the data and give the inference	5
5	Identify the given twig. F .Write botanical name, family and vernacular name	2
6	Work out the given Problem G.	2
7	Work out the given Problem H.	2
8	Write short notes I	2
	Practical =	30
	Herbarium =	10
	Record =	10
	<b>Total Marks =</b>	<b>50</b>

**CORE PRACTICAL-III (Papers V, VI, & VII)**

(Taxonomy of Angiosperms and economic botany: Genetics, Plant Breeding, Evolution and Biostatistics; Ecology and Phytogeography & Fundamentals of Microbiology))

**KEY**

1	A&B Taxonomy (Identification -1 , Reasons -2)	2x3=6
2	C. Taxonomy (sketches-1,Floral diagram-1,Floral Formula-1,Notes-1)	4
3	D. Hydrophyte / Xerophyte (Identification -1, Slide-1 Sketch& Notes-1)	3
4	E. Quadrat / Line transect / Belt transect- (Identification-1,Graph & Notes-3)	4
5	Gram staining (F)	5
6	G. Genetics Problem	3
7	H. Biostatistics problem	3
8	I. Microbiology	2
	Practical =	30
	Herbarium =	10
	Record =	10
	Total Marks =	<b>50</b>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	S	M	S	S
<b>CO2</b>	S	S	S	S	M	S	M	S	S	S
<b>CO3</b>	S	S	M	M	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	M	M	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
<b>Core/Elective/Supportive</b>	<b>Core practical –IV (paper IX &amp; X)</b> ( Plant Physiology, Biochemistry & Biophysics and Medicinal Botany & Human Welfare)				<b>45</b>	<b>3</b>
<b>Pre-requisite</b>	<b>Basic knowledge I, Physiology, Biochemistry &amp; Biophysics, Biochemistry, and Medicinal Plants</b>	<b>Syllabus Version</b>	<b>2022-2023</b>			
<b>The main objectives of this course are to:</b>						
<ol style="list-style-type: none"> <li>1. Overview the concept of water relation and transpiration in plants.</li> <li>2. Gain complete knowledge on requirements and process of photosynthesis and respiration in plants.</li> <li>3. Estimate various biomolecule using quantitative methods in plant tissues.</li> <li>4. Learn about types of medicinal plants used in treating several diseases</li> <li>5. Get basic knowledge in identifying the medicinal plants with their medicinal values</li> </ol>						
<b>Expected Course outcomes are:</b>						
On the successful completion of the course, students are able to:						
1	Gain knowledge in water relation, process and factors affecting transpiration in plants					K1
2	Know about various requirements and processes involved in photosynthesis and respiration.					K3
3	Learn the techniques in estimation of biomolecules.					K3
4	Understand the basic active principles of medicinal plants					K2
5	Get practice in using local medicinal plants for various ailments					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						

Time: 3 Hrs		Max. Marks: 45
1	Write Procedure, apparatus required for the experiment A . Give the inference from the experiment and leave the setup for valuation	12
2.	Estimate the amount of Carbohydrate/Protein or identify the presence or absence of lipids in the given sample B	8
3	Write notes on C, D & E	3x5 = 15
	Practicals =	35
	-Record =	10
	Total Marks =	<b>45</b>

### **CORE PRACTICAL – IV (Papers IX & X)**

(Plant Physiology, Biochemistry Biophysics, and Medicinal Botany & Human Welfare)

#### **KEY**

1	Physiology A(Requirements-3, Procedure-3, Result-3	12
2.	Biochemistry B(Requirements-2, Procedure- 2, Result-2)	8
3	Medicinal Products- Leaf, stem, flower, fruit, / Unorganised drugs(C,D.E)	3x5 = 15
	Practical's =	35
	Record =	10
	Total Marks =	<b>45</b>



<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	S	S	M	M	M
<b>CO2</b>	S	S	S	M	S	S	S	M	M	M
<b>CO3</b>	S	S	S	M	S	S	M	L	S	S
<b>CO4</b>	S	S	S	L	S	S	M	M	S	S
<b>CO5</b>	S	S	S	M	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
Core/Elective/Supportive	<b>Elective practical</b> ( Elective papers I, II, &III) (Paper I Economic Botany, Paper II Pomology & Paper III Ethnobotany)				45	3
Pre-requisite	<b>Bsaic knowledge of economic products, cultivation &amp; harvesting of fruits, interrelationship of medicinal plants with human.</b>		Syllabus Version		2022-2023	
<b>Course Objectives:</b> The main objectives of this course are to <ol style="list-style-type: none"> <li>1. Introduce about origin &amp; cultivation of economically important plants including cereals, pulses, spices etc.</li> <li>2. Understand Pomology, and cultivation of both tropical &amp; temperate fruits</li> <li>3. Learn about tribal medicine and their use in traditional system of</li> <li>4. Analyse the role of ethnic group in conservation</li> <li>5. Inculcate ethnobotanical knowledge as source of drugs .</li> </ol>						
<b>Expected Course Outcomes:</b> On the successful completion of the course, students are able to:						
1	Include trading conservation and sustainable utilization of economically important products					K4
2	Recognize the members of major Angiosperm families by identifying their diagnostic features and economic importance					K3
3	Understand the various methods of cultivation of fruits					K2
4	Apply the important medicinal plant product of ethnic knowledge in curing the common ailments in day today's life					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						

Time: 3 Hrs		Max. Marks: 45
1	Write the economic importance of A & B	6
2.	Identify the fruits C & D mentioning their family, binomial & uses	6
3	Identify the plant and plant products E & F with binomial and ethnobotanical significance	2x4= 8
4	Write notes on G, H,I, J & K	5x3 = 15
	Practical =	35
	Record =	10
	Total Marks =	<b>45</b>

## ELECTIVE PRACTICAL

### CORE VIII Fundamentals of Microbiology, Elective papers I, II, &III

#### KEY

Time: 3 Hrs		Max. Marks: 45
1.	A & B – Economic products	6
2.	C & D - Pomology	6
3	E & F - ethnobotany	2x4=8
4	G,H,I,J & K ( Cereals, pulses,oil plants, Tropical & temperate fruits mentioned in the syllabus, Medicinal plants mentioned in the syllabus with their ethnobotanical significance)	5x3=15
	Practical =	35
	Record =	10
	Total Marks =	<b>45</b>

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	S	S	M	S	M	S	S	L	L	M
<b>CO2</b>	S	M	M	M	M	S	S	L	L	M
<b>CO3</b>	S	M	M	S	S	S	S	M	M	M
<b>CO4</b>	S	S	S	M	M	S	S	M	L	M
<b>CO5</b>	S	S	M	M	M	S	S	M	L	M

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
<b>Core/Elective/Supportive</b>		<b>SKILL BASED SUBJECT : PRACTICAL</b> Paper I, II & III (Mushroom cultivation Technology, Computing Skills in Industry 4.0) & Horticulture			45	3
<b>Pre-requisite</b>		<b>Basic knowledge about Mushroom cultivation computer (hardware and software) and Horticulture</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to						
<ol style="list-style-type: none"> <li>1. Analyze the various methods of cultivation of mushrooms</li> <li>2. Identify the edible and other kinds of mushrooms</li> <li>3. Understand types of gardens &amp; lawn making</li> <li>4. Learn to operate and apply various techniques of computer effectively</li> <li>5. Equip the skills learnt in Horticulture</li> <li>6. Overview the extraction of jasmine concrete &amp; papain</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students are able to:						
1	Apply various cultivation methods in mushroom production					K3
2	Understand the values of mushrooms and in making varieties of recipes					K2
2	Analyse different types of garden & lawn making					K4
3	Know about creation and use of power point presentations, DBMS and MS access					K6
4	Procure Entrepreneur skill in flower cultivation, plantation crops & medicinal					K4
5	Acquire knowledge about AI & ML					K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						

S.no	Time: 3Hrs	Max.Marks:45
1.	Write the protocol for cultivation of mushrooms	8
2.	Identify B .Draw sketches and write notes.	3
3.	Identify and write notes on C & D	4x2=8
4	Write down the importance of E	4
5	Identify F,G & H	3x4=12
	Practical =	35
	Medicinal plant parts exhibit =	5
	Record =	10
	Total Marks =	<b>45</b>

Paper I, II & III (Plant Bio resources, Medicinal botany and human welfare and computing skills in Industry 4.0)

**Key**

S.no	Time: 3 Hrs	Max.Marks:45
1	A. Protocol for mushroom cultivation	8
2	B-Type of mushroom	3
3	C & D Spotter- Computer Applications (Identification – 1, Diagram – 1, and Notes- 2 )	4x2=8
4	E- Horticulture techniques	4
5	F, G & H -Spotters ( Mushroom cultivation, Computing skills & Horticulture)	3x4=12
	Practical =	35
	Medicinal plant parts exhibit =	5
	Record =	10
	Total Marks =	<b>45</b>

**PROVIDENCE COLLEGE FOR WOMEN, COONOR (AUTONOMOUS)**

**UG MODEL QUESTION PAPER (Theory)**

**End semester Examination Question Paper Pattern**

(For the candidates admitted from the academic year 2022-23 onwards)

**Time: 3Hours**

**Max. Marks: 50**

**Section A (10x1 = 10 marks)**

**Choose the best answer pattern**

1. a. b. c. d.
2. a. b. c. d.
3. a. b. c. d.
4. a. b. c. d.
5. a. b. c. d.
6. a. b. c. d.
7. a. b. c. d.
8. a. b. c. d.
9. a. b. c. d.
10. a. b. c. d.

**Section B (5x3= 15 marks)**  
**Open Choice pattern**

- 11.a. (or)
- b.
- 12.a. (or)
- b.
- 13.a. (or)
- b.
- 14.a. (or)
- b.
- 15.a. (or)
- b.

**Section B (5 x 5= 25 marks)**  
**Open Choice pattern**

- 19.a. (or)
- b.
- 20.a. (or)
- b.
- 21.a. (or)
- b.
- 22.a. (or)
- b.
- 23.a. (or)
- b.



# **M. Sc. BOTANY**

## **Syllabus**

**(With effect from 2022-2023 on wards)**

**Programme Code: 4SB**



**PROVIDENCE COLLEGE FOR WOMEN, COONOOR- 643104  
(AUTONOMOUS)**

**PROVIDENCE COLLEGE FOR WOMEN, COONNOOR-643104  
(AUTONOMOUS)**

**DEPARTMENT OF BOTANY**



**Vision**

- To develop scientific and technological capabilities.
- To encourage students to bring out their hidden talents by instilling values in budding botanists so that the college will step in to getting one of the centres of Excellence in Botany.
- To prepare the students holistically by imparting profound knowledge and various life skills through modern technology in the burgeoning areas of Plant sciences.

**Mission**

- To strengthen the teaching, learning and research process through herbarium, botanical tours, field and nursery trips, industrial / institutional visits etc.
- To generate wisdom and produce good future scientists, environmentalists and nature lovers by applying both conventional and non conventional tools

<b>Program Educational Objectives (PEOs)</b>	
The <b>M. Sc. Botany</b> program describes accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	The courses have been designed to benefit all Botany students to study various aspects of Plant sciences including its practical applications.
PEO2	Keeping in mind that these students can take up teaching at different levels, research work in research institutes or industries, doctoral programme, floristic study, ecological survey, environment impact assessment, biodiversity studies, entrepreneurship, scientific report writing on various topics, have been included in the curriculum
PEO3	Students would be benefited with knowledge of core subjects like Plant diversity, Plant taxonomy, Medicinal botany, Physiology and Biochemistry, Molecular biology, Cytogenetics and application of statistics etc. which are offered in these subject modules. Analytical techniques, plant tissue culture and phytochemistry would make to obtain skills in doing research.
PEO4	All the courses in this programme are carefully designed to equip the students for competitive exams like CSIR NET, SET, UGC NET, GATE, IFS, UPSC, etc. and to write research proposals for getting grants.

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of PG Botany program, the students are expected to	
PSO1	Gain knowledge about the classification of plants from Cryptogams to Phanerogams, identify the plants in the field, study biodiversity in relation to habitat and correlate with climate change, land and forest degradation. Apply the knowledge of Botany in Agriculture through Phytopathological study. They also will be in a position to trace the evolution of plants through Paleobotany.
PSO2	Be familiar with external and internal characters of plants, identify and classify the plants and also to be familiar in all biochemical and pharmaceutical aspects.
PSO3	Know the fundamentals of Biostatistics and apply the Bioinformatic tools and biophysical principles in relevant biological situations and develop intellectual skills on biological data and databases.
PSO4	Acquire skills about the local, medicinal, rare, endangered, endemic and exotic plants in their original habitats and learn therapeutic values acquired through their physiological pathways and to implement the cultivation practices of plants for effective conservation and future use.

PSO5	To elucidate the molecular and physiological adaptations in plants in response to biotic and abiotic stress. Identify genes responsible for stress tolerance and genetic engineering of plants. Through microbiological concepts the students will be able to inter-relate integral and ubiquitous role of microbes with environment.
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## PROVIDENCE COLLEGE FOR WOMEN, COONOR (AUTONOMOUS)

<b>Program Outcomes (POs)</b>	
On successful completion of the <b>M. Sc. Botany</b> program the students will be in a position to	
PO1	Maintain a high level of scientific excellence in botanical research with specific emphasis on the role of plants, create, select and apply appropriate techniques, resources and modern technology in the plant sciences.
PO2	Logically think with the application of biotechnological innovations by implementing modern techniques and practical exposures in the field of Plant Molecular Biology, Plant Biotechnology and Plant Tissue Culture
PO3	Understand the issues of environmental contexts and sustainable development.
PO4	Enhance the therapeutic aspects of medicinal plants by traditional indigenous approaches and improve production of medicine, food and other plant products for the betterment of man's holistic development and welfare.
PO5	Acquire amplifying knowledge on basic scientific phenomena, fundamental, principles and applications of various mathematical tools and physical principles in relevant biological situations.
PO6	Able to execute their ideas, knowledge and concepts in current scenario and apply them in multidisciplinary ways

### M. Sc. BOTANY Curriculum

*(For the students admitted during the academic year 2022 – 23 onwards)*

**PROVIDENCE COLLEGE FOR WOMEN, COONOOR**  
**(AUTONOMOUS)**

**M.Sc. BOTANY**

(Syllabus for the students those who are admitted from the Academic year 2022-2023 onwards)

Course Code	Title of the Course with code	Credits	Hours (wk)		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	Core Paper I- Microbiology (21P1CT01)	4	5		50	50	100
	Core Paper – II Phycology, Mycology and Lichenology (21P1CT02)	4	5		50	50	100
	Core Paper – III Bryophytes, Pteridophytes, Gymnosperms and Paleobotany (21P1CT03)	4	5		50	50	100
	Core Paper – IV Plant Ecology and Environmental Sciences (21P1CT04)	4	5		50	50	100
	Elective – I Phytopathology ( Without practical examination) (21P1ET01)	4	4		50	50	100
	Core Practical – I (Comprised of Paper I, II, III and IV) (21P1CP01)	4		6	50	50	100
	<b>Total</b>	<b>24</b>	<b>24</b>	<b>6</b>	<b>300</b>	<b>300</b>	<b>600</b>
<b>SECOND SEMESTER</b>							
	Core Paper – V Cell and Molecular Biology (21P2CT01)	4	5		50	50	100
	Core Paper – VI Genetics, Evolution and Plant Breeding (21P2CT02)	4	5		50	50	100
	Core Paper – VII Anatomy, Embryology and Morphogenesis (21P2CT03)	4	5		50	50	100
	Core Paper – VIII Plant	4	5		50	50	100

	Tissue culture <b>(21P2CT04)</b>						
	Elective – II Horticulture ( Without practical examination) <b>(21P2ET02)</b>	4	4		50	50	100
	Core Practical – II (Comprised of Paper V, VI, VII and VIII. <b>(21P2CP02)</b>	4		6	50	50	100
<b>Total</b>		<b>24</b>	<b>24</b>	<b>6</b>	<b>300</b>	<b>300</b>	<b>600</b>
<b>THIRD SEMESTER</b>							
	Core Paper – IX Plant Taxonomy	4	5		50	50	100
	Core Paper – X Medicinal Botany	4	5		50	50	100
	Core Paper – XI Plant Physiology	4	5		50	50	100
	Core Paper – XII Phytochemistry	4	5		50	50	100
	Elective – III Bioinstrumentation and Biological techniques ( Without practical examination)	4	4		50	50	100
	Core Practical – III (Comprised of Paper IX and X)	4		6	50	50	100
<b>Total</b>		<b>24</b>	<b>24</b>	<b>6</b>	<b>300</b>	<b>300</b>	<b>600</b>
<b>FOURTH SEMESTER</b>							
	Core Paper – XIII Biotechnology & Genetic Engineering	4	6		50	50	100
	Elective – IV Bioinformatics and Biostatistics ( Without practical examination)	4	6		50	50	100
	Core Practical – IV (Comprised of Papers XI, XII and XIII)	4		6	50	50	100
	* Project & <i>viva-voce</i>	6	12		75	75	150

	Examination						
	<b>Total</b>	<b>18</b>	<b>24</b>	<b>6</b>	<b>225</b>	<b>225</b>	<b>450</b>
	<b>Grand Total</b>	<b>90</b>	<b>96</b>	<b>24</b>	<b>1125</b>	<b>1125</b>	<b>2250</b>

**\* Project report- 125 marks; viva voce 25 mark**

### **Method of implementation and evaluation of Project**

- ✓ Based on the strength, students will be allotted to staff members by lot in the first week (3<sup>rd</sup> Semester) after reopening the college.
- ✓ Student should present the proposed project work before Department council to get approval within one month of reopening the college.
- ✓ Students are permitted to collect relevant literature in the field concerned during working days without disturbing the normal classes.
- ✓ After making protocol, experiments in the respective fields will be conducted by students in the laboratory and field according to their need.
- ✓ Periodical review meetings will be conducted with the students by the faculty to assess the progress of the work.
- ✓ After getting the data of findings, students will be guided to write the dissertation.
- ✓ The dissertation will be corrected thoroughly by the respective guides and then permitted to submit in the first day of practical examination.
- ✓ It should be duly signed by the Research guide and the Head of the Department and submitted for evaluation.

The dissertation to be submitted should include:

- Introduction
- Objectives
- Materials and methods
- Results and discussion
- Summary and conclusion
- References

The dissertation will be evaluated as follows:

1. Internal evaluation by guide - **75 marks**
2. External evaluation by external examiner - **50 marks**
3. PowerPoint presentation of work done for open *viva-voce* examination - **25 marks**

<b>Course code</b>		<b>MICROBIOLOGY</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core Paper I</b>	<b>75</b>			<b>4</b>
<b>Pre-requisite</b>		Basic knowledge in Microbiology gained from	<b>Syllabus</b>	<b>2022-</b>		

	undergraduate programme, classification, structure and application of certain microbes such as bacteria, fungi and virus.	<b>Version</b>	<b>2023</b>
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<b>Course Objectives:</b>		
The main objectives of this course are to:		
<ul style="list-style-type: none"> <li>• Equip the students to gain biomolecular knowledge and analytical skills at an advanced level.</li> <li>• Apply knowledge acquired on prokaryotic and eukaryotic cellular processes, interaction of microorganisms among themselves and with physical and chemical agents and higher order organisms in environment and biological systems at various conditions.</li> <li>• Implement the skills for a broad range of positions in research, industry, consultancy, education and public administration and in doctoral program.</li> <li>• Address broad range of fields including biopolymer chemistry, marine, biochemistry, environmental biotechnology, food science, microbiology, microbial genetics, molecular biology and systems biology</li> </ul>		
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Understand research ethics involving microorganisms to contribute to application, advancement and to impart knowledge in the field of microbiology and molecular biology. The laboratory training will empower them to prepare for careers in broad range fields.	K1
2	Gain knowledge of the leading edge in a chosen specialized area of Microbiology, based on own research experience from PG project literature survey. Also to compete in all competitive exams like NET-JRF, GATE , GRE-TOEFEL etc. and pursue career in higher studies.	K2
3	Independently carry out a complete scientific work process, including the understanding of theoretical background, hypothesis generation, data collection, analysis, interpretation and in presentation of results.	K3
4	Evaluate and apply relevant theory, methods and analytic approaches within the specialized field of microbiology, including statistical methods.	K4
5	To gain a high competence and multidisciplinary project experience within selected topics related to microbiology.	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		

<b>Unit:1</b>	<b>INTRODUCTION TO MICROBIOLOGY-VIROLOGY</b>	<b>15 hours</b>
Five kingdom classification by Whittaker (1969), prokaryotic and eukaryotic microbes, general features of viruses - classification, characteristics and ultra structure, isolation, purification, chemical nature, replication, transmission and economic importance of viruses, studies on virions, prions, phytoplasma and mycoplasma.		



<b>Unit:2</b>	<b>BACTERIOLOGY</b>	<b>15 hours</b>
Bacterial classification (Bergey's system) general account, ultrastructure, bacterial culture technique and economic importance, molecular taxonomy of bacteria, species concept in bacteria, Eubacteria, Archaeobacteria, Cyanobacteria and Actinomycetes.		
<b>Unit:3</b>	<b>INDUSTRIAL FERMENTATION</b>	<b>15 hours</b>
History and scope of industrial microbiology, development of industrial fermentation process, isolation, screening, production strains, production media, inoculum - preparation & development, industrial sterilization, scale up fermentations and downstream processing, fermenter & its types agitator and activator, product recovery.		
<b>Unit:4</b>	<b>INDUSTRIAL PRODUCTS</b>	<b>15 hours</b>
Industrial production of antibiotics: penicillin and streptomycin, organic acids: citric acid and lactic acid, enzymes: amylases and proteases, alcohol: acetone and butanol, aminoacids: L glutamic acid. Industrial production of vitamin B12. Immobilized cell technology, Industrial production of single cell proteins, biopolymers, bioplastics, biosurfactants, and biofertilizers.		
<b>Unit:5</b>	<b>ENVIRONMENTAL MICROBIOLOGY</b>	<b>13 hours</b>
Microorganisms in hydrocarbon system, leaching methods - role of microorganism in bioleaching. Microbiology of rhizosphere and mycorrhizae, types of microorganisms found on textile fibers Textile industry- effluent treatment with fungi, bacteria and microalgae		
Expert lectures, online seminars & webinars, wherever needed for certain topics		<b>2 hours</b>
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Carpenter, P. L. (1967). Microbiology. Saunders Co., Philadelphia, USA.	
2	Davis, B. D., Dulbecco, R., Eiser, H. N. and Grinsberg, H. S. (1980). Microbiology. Harper & Row, New York.	
3	Dubey, R. C. and Maheshwari, D. K. (2007). A Textbook of Microbiology. S. Chand and Co. Ltd., New Delhi.	
4	Edmond, P. (1978). Microbiology: An Environment Perspective. Macmillan & Co., New Delhi.	
5	Ketchum, P. A. (1988). Microbiology: Concepts and Applications. John Wiley & Sons, New York.	
6	Pelczar, M. J., Chan, E. C. S. and Krieg, N. R. (1993). Microbiology. Tata McGraw Hill Publishing Co. Ltd., New Delhi.	
<b>Reference Books</b>		
1	Sharma, P. D. (1992). Microbiology. Rastogi & Co., Meerut.	
2	Staley, J. T. <i>et al.</i> (1991). Bergey's Manual of Systematic Bacteriology. Vol. I to IV. Williams & Wilkins, London.	
3	Stanier, R. Y., Adelberg, E. A. and Ingram, J. L. (1978). General Microbiology. Mac Millan & Co., New Delhi.	
4	Casida, IC, 1968. Industrial microbiology Wiley Eastern Ltd.	

5	Chahal D.S. 1991. Food feed and fuel from Biomass, IBH. New Delhi.
6	Paul. A. Ketchum 1968. Microbiology, John Wiley & Sons USA.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://www.nos.org/media/documents/dmlt/microbiology">www.nos.org/media/documents/dmlt/microbiology</a>
2	<a href="http://www.columbia.edu/itc/hs/medical/pathophys/id/2009">www.columbia.edu/itc/hs/medical/pathophys/id/2009</a>
3	<a href="http://microbiologyinfo.com">http://microbiologyinfo.com</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M
CO5	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code		PHYCOLOGY, MYCOLOGY AND LICHENOLOGY	L	T	P	C
Core/Elective/Supportive		Core Paper II	75			4
Pre-requisite		Basic knowledge of Life Science	Syllabus Version			2022-2023
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>Acquire knowledge on diverse groups of Thallophytes.</li> <li>Gain knowledge on the diversity, structural organization and reproduction of algae, fungi and lichens.</li> <li>Understand the life cycle patterns of Thallophytes and their significance</li> </ul>						
<b>Expected Course Outcomes:</b>						

On the successful completion of the course, student will be able to:		
1	Grasp the basic concepts of lower life forms	K1
2	Understand the diversity in habits, habitats and organization of various groups of Angiosperms	K2
3	Inherit knowledge on the exploitation of useful products from lower forms for the betterment of human welfare	K3
4	Apply their acquired knowledge to improve the economic quality of the lower life forms.	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>		
<b>Unit:1</b>	<b>Classification and characteristics of Algae</b>	<b>15 hours</b>
Classification of Algae (Fritsch, 1945), salient features of major classes: Chlorophyta, Cyanophyta, Charophyta, Xanthophyta, Phaeophyta and Rhodophyta. Ultrastructure of prokaryotic and eukaryotic algal cells and their components. Economic importance of Algae.		
<b>Unit:2</b>	<b>Ecology, Cultivation and Life Cycle Patterns of Algae</b>	<b>15 hours</b>
Ecology of algae - algae as pollution indicators, algal blooms, algicides , culture and cultivation of fresh water and marine algae, Knop's solution and Chu-10 medium (1972), origin and evolution of sex in algae, phylogeny and interrelationships of algae, life cycle patterns in algae. Study of fossil algae.		
<b>Unit:3</b>	<b>Classification and Characteristics of Fungi</b>	<b>15 hours</b>
Classification of fungi (Alexopoulos and Mims, 1979), recent trends in classification of fungi, General characters of major classes: Mastigomycotina, Schizomycotina, Ascomycotina, Basidiomycotina and Deuteromycotina. Phylogeny and interrelationships of major groups of fungi. Economic importance of fungi.		
<b>Unit:4</b>	<b>Organization and Reproductions of Fungi</b>	<b>15 hours</b>
Thallus organization, reproduction, life cycle types, parasexual cycles, reduction in sexuality in fungi, physiological races in fungi, spore dispersal mechanisms and fungal genetics, study of fossil fungi.		
<b>Unit:5</b>	<b>Lichens</b>	<b>13 hours</b>
Classification of Lichens (Hale, 1969). Occurrence and interrelationship of phycobionts and mycobionts, structure and reproduction in Ascolichens, Basidiolichens and Deuterolichens. Lichens as indicators of pollution. Economic importance of Lichens.		
<b>Expert Lectures &amp; online seminars-webinars</b>		<b>2 hours</b>
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Round, F.E, (1973), The Biology of Algae.	
2	Kumar, H.D, (1988), Introductory Phycology.	
3	Fritsch, F.E. (1935-1945). Structure and reproduction of the Algae. Vol. II III & I.	
4	Alexopoulos, C.J. and C.W. Mims (1985). Introductory Mycology	
5	Smith, G.M. (1971). Cryptogamic Botany Vol. Algae and Fungi.	
6	Hale, M.E. (1961). A Hand Book of Lichens.	

<b>Reference Books</b>	
1	Bold. H.C. and H.J. Wyne (1978) Introduction to the Algal structure and reproduction, Prentice Hall, Englewood Cliffs, New Jersey.
2	Chapman. V.J and P.J. Chapman (1973). The algae. The English language book society and Macmillan.
3	Anisworth, S.C., Sparrow, F.E. and A.D. Sussman. 1965. The fungi and advanced treatise. Vol. I, II, III, IV A & IV B.
4	Bessey, E.A. (1950), Morphology and Taxonomy of Fungi.
5	Webster, J. (1985), Introduction to Fungi.
6	Hale, M.E. (1970). The Biology of Lichens.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt11/preview">https://swayam.gov.in/nd2_cec20_bt11/preview</a>
2	<a href="https://www.classcentral.com/course/swayam-plant-groups-19787">https://www.classcentral.com/course/swayam-plant-groups-19787</a>

<b>Mapping with Programme Outcomes</b>						
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CO1</b>	S	M	M	S	M	S
<b>CO3</b>	M	S	S	M	S	M
<b>CO3</b>	S	M	M	S	M	S
<b>CO4</b>	M	S	S	M	S	M

S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core Paper III</b>	<b>75</b>			<b>4</b>
<b>Pre-requisite</b>		Basic knowledge of Life Science	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>Gain a thorough knowledge on diverse groups of Bryophytes and Vascular cryptogams</li> <li>Procure wisdom on the diversity, structural organization and reproduction of Bryophytes, Pteridophytes and Gymnosperms.</li> <li>Comprehend the life cycle patterns of Bryophytes and Vascular plants with the economic importance</li> <li>Know about the values of fossils and relate to the past historical importance of various groups of plants</li> </ul>						

<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Grasp the knowledge on phylogeny of Bryophytes, Pteridophytes and Gymnosperms.	K1
2	Assume the alternation of generations of Vascular Cryptogams	K2
3	Appel the knowledge on identification of fossils and the role of fossils in oil exploration and coal excavation.	K3
4	Discriminate various kinds of fossilization process and Radio carbon dating.	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>		
<b>Unit:1</b>	<b>Bryophytes</b>	<b>15 hours</b>
Classification of Bryophytes (Smith 1964). Structure, reproduction and life cycle of Marchantiales, Jungermanniales, Anthocerotales and Bryales, fossil bryophytes, economic importance of bryophytes and bryophytes as indicators of water and air pollution.		
<b>Unit:2</b>	<b>Pterdiophytes-I</b>	<b>15 hours</b>
General features, origin and evolution of Pteridophytes, classification of Pteridophytes (Smith 1955), structure, reproduction and life cycle of Rhyniales, Psilotales, Pteridales, Selaginellales, Isoetales and Calamitales.		
<b>Unit:3</b>	<b>Pteridophytes-II</b>	<b>15 hours</b>
Structure and reproduction of the following orders: Ophioglossales, Marattiales, Osmundales, Filicales and Salviniales Stellar evolution in Pteridophytes, Heterospory and seed habit, spore germination patterns, economic importance of Pteridophytes.		
<b>Unit:4</b>	<b>Gymnosperms</b>	<b>15 hours</b>
Classification of Gymnosperms (Bierhorst 1971), general account of Pteridospermales, Cycadales, Coniferales, Bennettiales, Pentoxylales, Ginkgoales, Cordaitales, Taxales, Gnetales, phylogenetic evolution of angiosperms, economic importance of Gymnosperms.		
<b>Unit:5</b>	<b>Paleobotany</b>	<b>13 hours</b>
Concepts of Paleobotany - A general account on Geological time scale, techniques for paleobotanical study, fossilization & fossil types, age determination and methods of study of fossils, nomenclature of fossil plants, role of fossil in oil exploration and coal excavation, paleopalynology, radio carbon dating.		
<b>Expert Lectures, online seminar- webinars</b>		<b>2 hours</b>
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Shukla, A. C. and Mishra, S. P. (1982). Essentials of Paleobotany. 2nd ed. Vikas Publishing House Pvt. Ltd., New Delhi.	
2	Eames, A. J. (1936). Morphology of Vascular Plants - Lower Groups. Tata McGraw Hill, New Delhi.	
3	Parihar, N. S. (1985). The Biology and Morphology of Pteridophytes. Central Book Depot, Allahabad.	

4	Rashid, A. (1986). An Introduction to Pteridophyta. Vani Educational Books, New Delhi.
5	Sharma, O. P. (1990). Text Book of Pteridophyta. Macmillan India Ltd., India.
6	Smith, G. M. (1971). Cryptogamic Botany. Vol. II. Bryophytes and Pteridophytes. Tata McGraw Hill, New Delhi.
7	Sundararajan, S. (2007). Introduction to Pteridophyta. New Age International Publishers, New Delhi.
8	Vashishta, P. C. <i>et al.</i> (2008). Botany for Degree Students: Pteridophyta. S. Chand and Co. Ltd., New Delhi.
9	Vasishta, P. C. <i>et al.</i> (2006). Botany for Degree Students: Gymnosperms. S. Chand and Co. Ltd., New Delhi.

### Reference Books

1	Nikias, K. J. (1981). Paleobotany, Paleoecology and Evolution. Praeger Publishers, USA.
2	Seward, A. C. (1919). Fossil Plants. Vol. I, II, III and IV. Cambridge University Press, London.
3	Seward, A. C. (1931). Plant Life through the Ages. Cambridge University Press, London.
4	Ingold, C. T. (1939). Spore Discharge in Land Plants. Oxford, UK.
5	Coultar, J. M. and Chamberlin, C. J. (1967). Morphology of Gymnosperms. Central Book Depot, Allahabad.
6	Foster, A. S. and Gifford, E. M. (1965). Morphology and Evolution of Vascular Plants. W. H. Freeman & Co.
7	Maheswari, P. and Vasil, V. 1960. Gnetum: A Monograph. CSIR Publication, New Delhi.
8	Sporne, K. R. (1974). The Morphology of Gymnosperm. B.I. Publications, New Delhi.
9	Sporne, K. R. (1972). The Morphology of Pteridophytes. B. I. Publications, Madras

### Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	<a href="https://swayam.gov.in/nd2_cec20_bt11/preview">https://swayam.gov.in/nd2_cec20_bt11/preview</a>
2	<a href="https://www.classcentral.com/course/swayam-plant-groups-19787">https://www.classcentral.com/course/swayam-plant-groups-19787</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	PLANT ECOLOGY AND ECOSYSTEM CONSERVATION			L	T	P	C
Core/Elective/Supportive	Core Paper IV			75			4
Pre-requisite	To know about Ecology and Environment and conserve various ecosystems			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>Recognize the concept of ecosystem and cycling of elements between organism and environment.</li> <li>Understand the effect of pollution</li> <li>Obtain the knowledge on species conservation and their significance</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the concepts of ecosystem, biogeochemical cycle and species selection						K1
2	Realize the environmental deterioration and possible measures for their revival						K2
3	Use the modern techniques to conserve the species and natural resources						K3
4	Monitor and register the biodiversity changes through remote sensing						K4
5	Apply strategies for the conservation of germplasm						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>							
<b>Ecology</b>						<b>15 hours</b>	
History and scope of ecology, concept of ecosystem, autecology & synecology, modern concept of biotic community, major and minor communities, methods of studying plant community, biogeochemical cycling, cycling pattern in tropical and temperate regions, ecological indicators, genecology.							
<b>Unit:2</b>							
<b>Environmental Pollution &amp; Organizations</b>						<b>15 hours</b>	
Environmental pollution, plants- indicators of pollution, radiation and noise pollution - effects and control measures, environmental management and legislation in India. Environmental organizations and agencies - MAB national organization.							
<b>Unit:3</b>							
<b>Ecosystem Conservation</b>						<b>15 hours</b>	
Current practices in conservation, <i>In situ</i> and <i>ex situ</i> conservation, Forest conservation through laws, World conservation strategy (WCS) and National conservation strategy (NCS). Application of Remote sensing and GIS in Ecological Science.							
<b>Unit:4</b>							
<b>Resource Management</b>						<b>15 hours</b>	
Basic principles, management and classification of resources. sources of germplasm. centres of genetic diversity. concepts of de Candolle and Vavilov, current biodiversity loss, concept of endemism, rare, endangered and threatened species (RET), keystone species, IUCN-account of biodiversity, red data book and hot spots, reasons to stop extinction, methods to conserve species,							

ecotourism- positive and negative impacts.		
<b>Unit:5</b>	<b>Germplasm Maintenance</b>	<b>13 hours</b>
Germplasm maintenance of Rice and Sugarcane, the role of IBPGR (Rome, Italy) and NBPGR (New Delhi) in germplasm conservation, Plant germplasm resources, Intellectual Property Rights – intellectual property protection patent systems, Plant breeders rights and Farmers rights , a brief account on geographical indication (GI).		
<b>Expert Lectures/Seminar/Webinar</b>		<b>2 hours</b>
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Ambasht, R.S. (1988). A text books of plant ecology. Students, Friends & Co., Varanasi	
2	Edward J. Kormondy, (1996). Concept of Ecology, Prentice Hill of India Pvt, Ltd.New Delhi	
3	Sharma, P.D. (1991). Ecology and Environment, Rastogi Publishers, Meerut.	
4	Micheal. P. (1984). Ecological methods for field and laboratory investigations, Tata Mc Graw Hill publishing company Ltd., New Delhi.	
5	Misra, R. (1986). Ecology work book, Oxford and IBH publishing company, New Delhi	
6	Krishnamurthy, K. V. (2004). An Advanced Textbook on Biodiversity: Principles and Practice. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.	
7	Odum E.P. (1971). Fundamentals of ecology, W.B. Saunders Co., Philadephia, London.	
<b>Reference Books</b>		
1	Emil T. Charlett. 1973.Environmental protection Tata Mc graw Hill New Delhi.	
2	George L. Clarke (1954). Elements of Ecology. John Wiley & sons. Inc., New York	
3	Perkins H.C. (1974). Air pollution, Mc Graw Hill Kongotusta Ltd, Tokyo	
4	Robert Smith, (1977). Elements of ecology and field biology, Harper and RawPublishers, New York, London	
5	Frankel, O. H., Brown, A. H. D. and Burdon, J. J. (1995). The Conservation of Plant Diversity. Cambridge University Press, London	
6	Meffe, G. K. and Carroll, C. R. (1994). Principles of Conservation Biology. Sinauer Associates. Sunderland, Mass, USA.	
7	Joseph M. Moran, Micheal D. Morgan and jances H. Wiersing. 1980. Introduction to environmental science W.H. Freemar & Sam Francisco. U.S.A.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/">https://swayam.gov.in/</a>	
2	<a href="https://swayam.gov.in/nd1_noc19_ge23/preview">https://swayam.gov.in/nd1_noc19_ge23/preview</a>	
3	<a href="https://www.classcentral.com/course/swayam-ecology-and-environment-14021">https://www.classcentral.com/course/swayam-ecology-and-environment-14021</a>	



Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	S	S	M	S
CO3	M	S	S	M	S	S
CO3	S	M	S	S	S	S
CO4	S	S	S	M	S	M
CO5	S	M	S	S	M	S

**\*S-Strong; M-Medium; L-Low**

**Core Practical – I (Papers I, II, III and IV)**  
**(Microbiology, Phycology, Mycology and Lichenology, Bryophytes, Pteridophytes, Gymnosperms and Paleobotany and Plant Ecology and Ecosystem Conservation)**

**Course code:**

**Syllabus Version: 2022-2023**

**Course Objectives:**

The main objectives of this course are to:

- Investigate the microbial temperament
- Understand the diversity and distribution of lower life forms.
- Realize the diversity and organization of higher life forms.
- Analyse the physico-chemical nature of the soil.
- Prepare the Biosphere reserves, National parks and sanctuary location maps of India

<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Isolate, Identify and measure the microbes	K5
2	Acquire and analyze interrelationships between algae, fungi and lichen	K4
3	Gain the knowledge about morphology and anatomy organizations of Bryophytes, Pteridophytes, Gymnosperms and Fossils	K2

4	Encourage the young minds to conserve the environment	K6
5	Expertise and create biodiversity map in India	K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		

### Paper I – Microbiology

1. Isolation of microbes from soil - Serial dilution and Plating methods.
2. Gram staining of Bacteria from curd and root nodule.
3. Microbial analysis of milk samples by methylene blue reduction test.
4. Antibiotic disc assay and find out minimum inhibitory concentration for various bacteria.
5. Spawn production technique for the cultivation of *Agaricus bisporus*.
6. Micrometry- Measure the average length of bacteria and fungal spores.

### Paper II - Phycology, Mycology and Lichenology

Study of morphology, anatomy, vegetative and reproductive organs using clear whole mounts / sections of the following genera.

#### Phycology:

##### Algae:

**Cyanophyta** - *Gloeocapsa* and *Lyngbya*.

**Chlorophyta**- *Scenedesmus*, *Pediastrum*, *Pithophora*, *Bulbochaete* and *Nitella*.

**Phaeophyta**- *Padina* and *Turbinaria*.

**Rhodophyta**- *Batrachospermum*, *Ceramium*, *Amphiroa* and *Gelidium*.

#### Mycology:

**Mastigomycotina**: *Plasmodiophora* & *Peronospora*

**Ascomycotina**: *Phyllachora*

**Basidiomycotina**: *Ustilago*.

**Deutromycotina**: *Alternaria*

**Slide culture technique** for identification of fungi.

**Fungal spore count** using Haemocytometer.

**Microscopical analysis** of

- (a) Spoiled food stuff – Bread
- (b) Spoiled vegetables - Potato and Onion
- (c) Spoiled fruits – Apple, Bean and Tomato.

#### Lichens:

**Ascolichen**: *Parmelia*, *Cladonia* & *Xanthoria*

## **Paper III - Bryophytes, Pteridophytes, Gymnosperms and Paleobotany**

### **Bryophytes:**

**Marchantiales:** *Lunularia*, *Targionia* and *Reboulia*

**Jungermanniales:** *Aneura*

**Anthocerotales:** *Anthoceros*

**Sphagnidae:** *Sphagnum*

**Bryidae:** *Bryum*.

### **Pteridophytes:**

**Psilotales:** *Psilotum*

**Isotales:** *Isoetes*

**Marattiales:** *Angiopteris*

**Osmundales:** *Osmunda*

**Schizeales:** *Lygodium*

**Hymenophyllales:** *Trichomanes*

**Cyatheales:** *Cyathea*

**Filicales:** *Nephrolepis*

**Salviniales:** *Salvinia* and *Azolla*.

### **Gymnosperms**

**Coniferales:** *Cupressus*, *Podocarpus*, *Araucaria*

**Pinales:** *Pinus*

**Ephedrales:** *Ephedra*.

### **Paleobotany**

Anatomical study of the fossil specimens

**Rhyniales:** *Rhynia*

**Drephanophycales:** *Asteroxylon*

**Lyginopteridales:** *Lyginopteris*

**Equisetales:** *Calamites*

**Medullosales:** *Medullosa*

## **Paper IV. Plant Ecology & Ecosystem Conservation**

1. Forest soil analysis to determine soil texture.
2. Forest soil analysis to determine water holding capacity and field capacity.
3. Forest soil analysis to determine soil pH
4. Calculate the biomass of exotic and native trees and compare the results.
5. Identify and make a list of common forest plants with diagrams (Minimum 25).
6. Calculate plant frequency, abundance and biomass by quadrat/Line & Belt Transect method.
7. Estimate Alpha diversity, Evenness index and Beta diversity of a rare/ endangered species in MS XL sheet.
8. Find out "r- selection" and Disturbance Diversity Relationship of herbaceous plants in a forest ecosystem.

9. Find out “K-selection” and Disturbance Diversity Relationship of trees in a forest Ecosystem
10. Prepare a map of 18 Biosphere Reserves of India.
11. Prepare location maps of National Parks and Wildlife Sanctuaries in Tamilnadu.

Mapping with Program Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	M	S	S	S
CO2	M	S	S	S	S	S
CO3	S	S	S	S	M	S
CO4	S	M	S	S	S	S
CO5	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	PHYTOPATHOLOGY				L	T	P	C
Core/Elective/Supportive	Elective I				60			4
Pre-requisite	Fundamental knowledge about microbes and plant diseases				Syllabus Version	2022-2023		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ul style="list-style-type: none"> <li>Disperse knowledge on pathogenic group of organisms.</li> <li>Obtain knowledge on disease forecasting and management.</li> <li>Analyze the plant-pathogenic interaction.</li> </ul>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Recognize the host -pathogen interaction						K1	
2	Expertise through control of food and commercial crop pathogens						K2	
3	Handle disease free varieties.						K3	
4	Implement the disease management techniques in the fields.						K4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>								
<b>Concept and Classification of Plant diseases</b>						<b>12 hours</b>		
Plant pathology - its scope and relationships with other sciences, plant diseases, saprophytes and parasitism, pathogenicity. Classification of plant diseases, plant diseases control - principles and methods, Plant disease forecasting.								
<b>Unit:2</b>								
<b>Fungal Diseases</b>						<b>12 hours</b>		
Symptoms, causal organism, disease cycle and control of pathogenic diseases- club root of crucifers, black wart of potato, powdery mildew of wheat, brown spot of paddy, early blight								

of potato, angular leaf spot and black arm of cotton, bacterial blight of paddy, sandal spike and grassy shoot disease of sugarcane.		
<b>Unit:3</b>	<b>Mode and action of diseases</b>	<b>12 hours</b>
Host-pathogen interaction, factors affecting infection, enzymes in plant diseases -Cell wall degrading enzymes. Toxins in relation to plant diseases: a general account, mode of action and types.		
<b>Unit:4</b>	<b>Plant responses against diseases</b>	<b>12 hours</b>
Plant responses to post infectious agents; alteration in growth, photosynthesis, respiration, nitrogen metabolism, aromatic compounds, and growth regulators-vascular transport.		
<b>Unit:5</b>	<b>Defense Mechanism</b>	<b>12 hours</b>
Defense mechanism; Genetics of plant-pathogen interaction. Effect of environment on diseases development. Plant diseases, epidemiology, forms of epidemics and conditions governing some of the important crop diseases.		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Bilgrani, KG and Dubey HC 1980 a Text book of modern plant pathology.	
2	Butler EJ Jones 1986 Plant pathology periodical book agency, Delhi.	
3	Ganulco HC and KAR, AK 1986 College botany volume11. central book depot, Calcutta.	
4	Mehrotra, RS 1979, Plant pathology 2 <sup>nd</sup> Edition. Tata McGraw hill Publi. New Delhi.	
5	Singh, R.S.1975.Introduction to the Principles of plant pathology. Oxford and IBH Publishing company, New Delhi.	
6	Rangaswamy, G. and Mahadevan, A. (1999). Diseases of crop plant in India 4thEdition.	
<b>Reference Books</b>		
1	Agrios, Gergon, n 1988, Plant pathology academic press London	
2	Boicer, F and Cook RJ 1974 Biological control of plant pathogens, Sanfrancisco.	
3	Holliday, P, 1980 Fungal diseases of tropical crops. Cambridge University	
4	Manners JG 1982 Principles of plant pathology Cambridge University Press Cambridge	
5	Anega, KG, 1993, Experiments in microbiology, plant pathology, and tissue culture.Wishwz prakasam (willey esternlimited).	
6	Ganulco HC and KAR, AK 1986 College botany volume11. central book depot, Calcutta.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd2_cec20_bt13/preview">https://swayam.gov.in/nd2_cec20_bt13/preview</a>	

2	<a href="https://www.classcentral.com/report/swayam-moocs-course-list/">https://www.classcentral.com/report/swayam-moocs-course-list/</a>
3	<a href="https://www.classcentral.com/course/swayam-plant-pathology-and-soil-health-14236">https://www.classcentral.com/course/swayam-plant-pathology-and-soil-health-14236</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	S	S	M	S
CO3	M	S	S	M	S	S
CO3	S	M	S	S	S	S
CO4	S	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	CELL AND MOLECULAR BIOLOGY			L	T	P	C
Core/Elective/Supportive	Core Paper V			75			4
Pre-requisite	Familiarity with cell organelles, genetics, biochemistry and molecular biology and its application gained during undergraduate course.			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>Understand the structure and cellular components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles and how they generate and utilize energy in cells</li> <li>Comprehend the cellular components and processes underlying mitotic cell division.</li> <li>Apply the knowledge of cell biology to selected examples of changes or losses in case of mutation</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Facilitate the adequate knowledge about the cell biology and basic concepts of genetics, structure of organisms and advanced molecular techniques.						K1
2	Understand the structure and function of basic components of prokaryotic and eukaryotic cells						K2
3	Introduce the rapid contemporary changes witnessed in plant molecular biology.						K3
4	Organize genetic material and the realms of events associated with replication and examine the gene expression						K4

5	Provide knowledge about different techniques of Biology	K5
6	Gain knowledge about the fundamental organization of life and genetic material and their applications.	K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>		
<b>Unit:1</b>	<b>STRUCTURAL ORGANIZATION OF CELL</b>	<b>15 hours</b>
Structural organization and function of intracellular organelles, structure and function of cytoskeleton and its role in motility, membrane structure and function- model membrane, lipid bilayer and membrane protein diffusion, osmosis, ion channels and active transport.		
<b>Unit:2</b>	<b>MOLECULAR ORGANIZATION</b>	<b>15 hours</b>
Molecular organization of chromosomes and genes, cell cycle - stages in cell cycle, regulation and control of cell cycle - cyclins and cyclin dependent kinases, Cell division- mitosis, mitotic apparatus and its physicochemical characteristics and biochemical composition, theories and stages of meiosis, chromosomal aberrations.		
<b>Unit:3</b>	<b>DNA – Structure &amp; Replication</b>	<b>15 hours</b>
Nucleic acid - physical and chemical structure of DNA, types of DNA, DNA as genetic material, DNA replication in prokaryotes and eukaryotes, semi conservative mode of replication. Messelson – Stahl experiment, mechanism of DNA replication, enzymes and inhibitors in DNA replication.		
<b>Unit:4</b>	<b>GENE TRANSCRIPTION</b>	<b>15 hours</b>
Transcription of DNA in prokaryotes and eukaryotes, organization of transcriptional units, RNA synthesis and processing. TATA box, Pribnow box, role of DNA binding by transcription factors, sigma factor, promoters – important features of class I, II, & III promoters, enhancers and silencers. Britten and Davidson model for eukaryotic gene regulation, post transcriptional silencing, RNA editing, micro RNAs, RNA inhibition.		
<b>Unit:5</b>	<b>GENE TRANSLATION</b>	<b>13 hours</b>
Translation: Important features of mRNA – ORF, RBS, fine structure, composition and assembly of prokaryotic and eukaryotic ribosomes, stages in translation (prokaryotes and eukaryotes): Initiation – Elongation – Termination, Inhibitors of protein synthesis, important features of the genetic code, protein sorting and translocation, post-translational modification of proteins. protein folding.		
<b>Expert lectures/ webinars</b>		<b>2 hours</b>
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Freifelder, D. (1983).2nd Ed. Marosa publishing house.	
2	C.P. Swanson, T.Merz, W.J. Young. (1988). Cytogenetics. 2nd Ed. Prentice hall India. Pvt. Ltd.,	
3	Archana Sharma. (1985). 2nd Ed. Chromosomes. Oxoford and IBH Publishing Company.	
4	Arthur korenerg, W.H.1976. DNA Synthesis. Freeman and Company.	
5	David Freifelder (2000). Molecular Biology. 2nd ed. Narosa Publishing House, New Delhi.	
6	De Robertis, E. D. P. and De Robertis, E. M. F. (1980). Cell and Molecular Biology. Saunders International Education, Philadelphia.	

7	Verma, P. S. and Agarwal, V. K. (1998). Concept of Molecular Biology. S. Chand and Co. Ltd., New Delhi
<b>Reference Books</b>	
1	Gustafson, J. P. (1984). Gene Manipulation in Plant Improvement. Plenum Press, New York.
2	Leadbetter, M. C. (1970). Introduction to the Fine Structure of Plant Cells. Springer Verlag.
3	Levin, B. (1974). Gene Expression. Vol. I. Bacterial Genomes. Vol. II. Eucaryotic Chromosomes. Wiley Interscience. London.
4	Levin, B. (1998). Genes. VI. Oxford University Press, London.
5	Rastogi, S. C., Sharma, V. N. and Anuradha Tandon, V. N. (1993). Concepts in Molecular Biology. Wiley Eastern Ltd., New Delhi.
6	Rost, T. L., Gifford, Jr. and Ernest, M. (1977). Mechanism and Control of Cell Division. Academic Press, New York.
7	Segal, H. L. and Doyle, D. J. (1978). Protein Turnover and Lysosomal Functions. Academic Press, New York.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://www.cellmolbiol.org">http://www.cellmolbiol.org</a>
2	<a href="https://cml.biomedcentral.com">https://cml.biomedcentral.com</a>
3	<a href="https://www.omicsonline.org">https://www.omicsonline.org</a>
4	Cellbiol.com
5	https:mcb.asm.org
6	<a href="https://www.unom.ac.in">https://www.unom.ac.in</a>
7	<a href="https://publon.com">https://publon.com</a>
8	<a href="https://www.nature.com">https://www.nature.com</a>
9	<a href="https://cell.uark.edu">https://cell.uark.edu</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M
CO5	S	M	M	S	M	S
CO6	S	M	M	S	M	S

Course code		<b>GENETICS, EVOLUTION AND PLANT BREEDING</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
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Core/Elective/Supportive	Core Paper VI	75		4
<b>Pre-requisite</b>	Basic knowledge on Mendelian inheritance, structure of chromosome, origin and evolution of prokaryotes and eukaryotes, plant breeding methods and mutation gained during undergraduate course.	<b>Syllabus Version</b>		<b>2022-2023</b>
<b>Course Objectives:</b>				
The main objectives of this course are to:				
<ul style="list-style-type: none"> <li>• Apply quantitative problem-solving skills in genetics</li> <li>• Describe the chromosome theory, molecular genetics and quantitative and evolutionary genetics and natural selection and the theories</li> <li>• Explain how new species arise and construct a phylogenetic tree</li> <li>• Explain the mechanisms which underlie evolution at the molecular level.</li> <li>• Describe major evolutionary lineages of plants and their defining characteristics.</li> <li>• Discuss plants in the context of environmental concerns, such as climate change, habitat destruction, pollution, invasive species, and agriculture.</li> <li>• Plant breeding methods and role of molecular markers in plant breeding</li> </ul>				
<b>Expected Course Outcomes:</b>				
On the successful completion of the course, student will be able to:				
1	Demonstrate Mendelian and molecular genetic inheritance through the knowledge of cell structure, cell physiology, and molecular processes of cells, and understand the principles of evolution.			K1
2	Understand the role of genetic technologies in industries related to biotechnology, pharmaceuticals, energy, and other fields and implement different methods of plant breeding for the improvement of crop			K2
3	Recognize the experimental rationale of genetic studies in peer-reviewed research articles and grant proposals to federal and other funding agencies.			K3
4	Work effectively with molecular, computational, mathematical, and statistical approaches to acquire, analyze, and model experimental datasets and evaluate the genetic data.			K4
5	Acquire communication skills, and able to evaluate and do oral and poster presentations of research data, at conferences/seminars/workshops etc. and publish research articles in reputed journals			K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>				
<b>Unit:1</b>	<b>INTRODUCTION TO GENETICS</b>			<b>15 hours</b>
Mendel's law of inheritance, sex determination in plants and theories of sex determination, sex linked characters, chromosome theory of inheritance, multiple alleles and pseudoalleles, extrachromosomal inheritance, uniparental inheritance in <i>chlamydomonas</i> and male sterility. Population genetics.				
<b>Unit:2</b>	<b>GENE CONCEPTS AND MUTATION</b>			<b>15 hours</b>
Gene concept - Benzer's concepts, brief description of the following types of genes - smart genes, housekeeping genes, transposons, overlapping genes, split genes, homeotic genes,				

pseudogenes, orphan genes, selfish genes, gene cluster and gene families. Fine structure and analysis of the gene, Benzer's experiment in the rII locus of t4 phage, gene mutation - molecular basis of mutation and their mode of action, detection of mutation by CLB method.		
<b>Unit:3</b>	<b>LINKAGE AND GENETIC RECOMBINATION</b>	<b>15 hours</b>
Bateson's concept of coupling and repulsion, Morgan's concept of linkage, linear arrangement of genes, linkage groups, complete and partial linkage, linkage maps, three point test crosses, interference, coefficient of coincidence and negative interference. Recombination in fungi (tetrad analysis in <i>Neurospora</i> ) molecular mechanism of recombination, molecular markers and construction of linkage maps. Microbial genetics (outline only) Complementation tests.		
<b>Unit:4</b>	<b>EVOLUTION</b>	<b>15 hours</b>
Lamarck - Darwin-concepts, the origin and evolutionary synthesis, concept of Oparin and Haldane, Miller's experiment, origin and evolution of prokaryotes and eukaryotic cells, concepts of natural evolution, molecular divergence and molecular clocks, origin of new genes and proteins; Gene duplication and divergence, homology, orthology, paralogy and xenology.		
<b>Unit:5</b>	<b>PLANT BREEDING</b>	<b>15 hours</b>
Methods of breeding in plants, breeding plants for improving agronomic parameters, plant breeding work in India with special reference to rice, cotton and sugar cane, role of polyploidy and hybridization and mutation in plant improvement, breeding in plants including marker assisted selection, QTL mapping.		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Gardener, E.J. (1975). 5th Ed. Principles of Genetics, Johanwiley, New York.	
2	Gupta, P.K. (1994). Genetics. Rastogi Publication, Meerut, India.	
3	King, R.C. (1975). A Hand book of Genetics, Plenum Press, New York.	
4	Arnold, R.W. (1960). Principles of Plant Breeding. Jolin Wily & Sons, Inc, New York.	
5	Benjamin A Pierce (2008). <i>Genetics: A conceptual approach</i> (IV Edn). W H Freeman and Company.	
6	David R Hyde (2010). <i>Genetics and molecular biology</i> . Tata McGraw Hill.	
7	Daniel L Hartl, Elizabeth W Jones (2012). <i>Genetics: Analysis of genes and genomes</i> (VII Edn). Jones and Bartlett publishers.	
8	Sharma J R (1994). <i>Principles and practices of Plant Breeding</i> . Tata McGraw-Hill Publishers Company Ltd.	
<b>Reference Books</b>		
1	William S Klug, Michael R Cummings (2004). <i>Concepts of Genetics</i> (VII Edn). Pearson.	
2	Roderic D M Page, Edward C Holmes (1998). <i>Molecular Evolution: A phylogenetic approach</i> . Blackwell Science Ltd.	
3	Mxxtoshi Nei, Sudhir Kumar (2000). <i>Molecular Evolution and phylogenetics</i> . Oxford University Press.	
4	Gurbachan S Miglani (2002). <i>Modern Synthetic theory of evolution</i> .	

5	Allard R W (1995). <i>Principles of Plant Breeding</i> . John Wiley and Sons, Inc.
6	Ghahal G S and Gosal S S (2002). <i>Principles and procedures of Plant Breeding</i> . Narosa Publishing House.
7	Singh B D (1996). <i>Plant Breeding: Principles and methods</i> . Kalyani Publications.
8	Singh, B.D. 2009. <i>Plant Breeding: Principles and Methods</i> . Kalyani Publishers, New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://blog.feedspot.com/genetics_blogs">https://blog.feedspot.com/genetics_blogs</a>
2	<a href="https://en.wikipedia.org/wiki/Genetic_linkage">https://en.wikipedia.org/wiki/Genetic_linkage</a>
3	<a href="https://www.khanacademy.org/.../a/linkage-mapping">https://www.khanacademy.org/.../a/linkage-mapping</a>
4	<a href="https://www.biologydiscussion.com/human-genetics/">https://www.biologydiscussion.com/human-genetics/..</a>
5	<a href="https://www.biologydiscussion.com/genetics/linkage">https://www.biologydiscussion.com/genetics/linkage</a>
6	<a href="https://www.classcentral.com/report/swayam-moocs-course-list">https://www.classcentral.com/report/swayam-moocs-course-list</a>
7	<a href="https://swayam.gov.in/nd1_noc19_bt15/preview">https://swayam.gov.in/nd1_noc19_bt15/preview</a>
8	<a href="https://www.classcentral.com/report/list-of-mooc-based-microcredentials">https://www.classcentral.com/report/list-of-mooc-based-microcredentials</a>
9	<a href="https://www.classcentral.com/tag/genetics">https://www.classcentral.com/tag/genetics</a>
10	<a href="https://swayam.gov.in/nd2_cec20_bt06/preview">https://swayam.gov.in/nd2_cec20_bt06/preview</a>
11	<a href="https://www.classcentral.com/course/swayam-bio...">https://www.classcentral.com/course/swayam-bio...</a>
12	<a href="https://nptel.ac.in/course.html">https://nptel.ac.in/course.html</a>
13	<a href="https://www.researchgate.net/publication/320038196">https://www.researchgate.net/publication/320038196</a>
14	<a href="https://www.classcentral.com/course/swayam-plant-developmental-biology-14235">https://www.classcentral.com/course/swayam-plant-developmental-biology-14235</a>
15	<a href="https://www.classcentral.com/course/best-practice-farming-sustainable-2050-9575">https://www.classcentral.com/course/best-practice-farming-sustainable-2050-9575</a>
16	<a href="https://www.plantbreeding.org/content/online">https://www.plantbreeding.org/content/online</a> .

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M
CO5	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code		ANATOMY, EMBRYOLOGY AND MORPHOGENESIS	L	T	P	C
Core/Elective/Supportive		Core Paper VII	75			4
Pre-requisite		Basic knowledge about the structure and functions of plant growth	Syllabus Version			2022-2023

<b>Course Objectives:</b>		
The main objectives of this course are to:		
<ul style="list-style-type: none"> <li>• Classify meristems and identify their structure, function and roles of apical and lateral meristems in plant growth.</li> <li>• Describe the function and organization of woody stems derived from secondary growth in dicot and monocot plants.</li> <li>• Highlight the physiological role of endosperm in the morphogenesis of embryo.</li> <li>• Assess the process of seed setting.</li> </ul>		
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Understand the intricacies involved in the reproduction of plants.	K1
2	Gain awareness about the various process of compatibility involved in plant reproduction	K2
3	Explain the importance of secondary growth and to state the location of tissues involved in secondary growth in dicot and monocot plants	K3
4	Analyze the types of growth and to compare their structure and functions and processes of floral development.	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>		
<b>Unit:1</b>	<b>Meristems &amp; Tissue Differentiation</b>	<b>15 hours</b>
General account and theories of organisation of meristems, structural diversity and phylogenetic trends of specialization of xylem and phloem, cambium - origin, cellular structure, cell division, storied and non-storied types, cambium in budding and grafting, wound healing, trichomes, periderm and lenticels.		
<b>Unit:2</b>	<b>Anatomical characterization</b>	<b>15 hours</b>
Anatomical characteristics and vascular differentiation in primary and secondary structure of root and stem of dicot and monocot, anomalous secondary growth in <i>Achyranthus</i> , <i>Mirabilis</i> , <i>Piper</i> and <i>Dracena</i> , origin of lateral roots, root- stem transition, anatomy of dicot and monocot leaves. leaf abscission, stomatal types, nodal anatomy, petiole anatomy, vascularisation of flower.		
<b>Unit:3</b>	<b>Embryology</b>	<b>15 hours</b>
Microsporangium - Microsporogenesis, Microgametogenesis – pollen, stigma incompatibility, methods to overcome incompatibility, megasporangium, megagametogenesis, female gametophyte – monosporic - bisporic and tetrasporic , nutrition of embryo sac and fertilization.		
<b>Unit:4</b>	<b>Embryo Development</b>	<b>15 hours</b>
Endosperm - types - endosperm haustoria , cytology and physiology of endosperm, functions of endosperm, embryo development in dicot and monocot, nutrition of embryo, polyembryony - causes, apomixis - causes, apospory - their role in plant improvement programmes and seed development.		
<b>Unit:5</b>	<b>Morphogenesis</b>	<b>13 hours</b>

Definition - Morphogenesis - morphogenetic factors, growth regulators, genetic and environment polarity, molecular and cellular basis of morphogenesis, nuclear transplantation experiments with <i>Acetabularia</i> - Sachs's and Error's law, asymmetric divisions and their significance. Plant galls and their importance in morphogenesis, leaf development and phyllotaxy, floral meristems and floral development in <i>Arabidopsis</i> and <i>Antirrhinum</i> .		
<b>Expert Lecture/ Seminar/Webinar</b>		<b>2 hours</b>
		<b>Total Lecture hours</b>
		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Pandey, B. P. (1989). Plant Anatomy. S. Chand and Co. Ltd., New Delhi.	
2	Singh, V., Pande, P. C. and Jain, D. K. (1987). Anatomy of Seed Plants. Rastogi Publications, Meerut.	
3	Easu, K. (1953). Plant Anatomy. John Wiley & Sons Inc., New York.	
4	Agarwal, S. B. (1990). Embryology of Angiosperms - a fundamental approach. Sahitya Bhawan, Agra	
5	Bhojwani, S. S. and Bhatnagar, S. P. (1981). Embryology of Angiosperms. Vikas Publishing House Pvt. Ltd., New Delhi	
6	Maheswari, P. (1963). An Introduction to Embryology of Angiosperms. International Society of Plant Morphologies, University of Delhi.	
7	Bonner, J. T. (1965). Morphogenesis. Oxford & IBH Publications, Bombay.	
8	Burgess, J. (1985). An Introduction to Plant Cell Development. Cambridge University Press, London.	
9	Murphy, T. M. and Thompson, W. F. (1988). Molecular Plant Development. Prentice Hall of India Pvt. Ltd., New Jersey	
<b>Reference Books</b>		
1	Clowers, F. A. L. (1961). Apical Meristems. Blackwell Scientific Publication, Oxford	
2	Cutter, E. G. (1978). Plant Anatomy. Edward Arnold Publishers Ltd., London.	
3	Fahn, A. (1989). Plant Anatomy. Maxwell Pvt. Ltd., Singapore.	
4	Metcalf and Chalk (1950). Anatomy of the Dicotyledons and Monocotyledons. Vol. I and II. Clarendon Press, Oxford, UK.	
5	Dwivedi, J. N. (1998). Embryology of Angiosperms. Rastogi and Co., Meerut.	
6	Raghavan, V. (1976). Experimental Embryogenesis in Vascular Plants. Academic Press, London.	
7	Bard, J. (1990). Morphogenesis. Cambridge University Press, London.	
8	Brouder, L. W. (1986). Development Order: A Comprehensive Treatise. Vol.2. The Cellular Basis of Morphogenesis. Plenum Press, New York.	
9	Bryant, J. A. and Francis, D. (1985). The Cell Division Cycle in Plants. Cambridge University Press, London	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd1_noc20_bt35/preview">https://swayam.gov.in/nd1_noc20_bt35/preview</a>	
2	<a href="https://www.researchgate.net/publication/318394791_Plant_Anatomy_and_Embryology">https://www.researchgate.net/publication/318394791_Plant_Anatomy_and_Embryology</a>	

3	<a href="http://www.uou.ac.in/sites/default/files/slm/BSCBO-202.pdf">http://www.uou.ac.in/sites/default/files/slm/BSCBO-202.pdf</a>
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Course code	PLANT TISSUE CULTURE	L	T	P	C
Core/Elective/Supportive	Core Paper VIII	75			4
Pre-requisite	Course is intended to know certain fundamental principles and practical considerations of plant cell and tissue culture.	Syllabus Version	2022-2023		

**Course Objectives:**

The main objectives of this course are to:

- Successfully maintain cultures of plant cells and establish cell culture with good viability, minimal contamination and appropriate documentation.
- Perform supportive tasks relevant to cell culture, including preparation and evaluation of media, cryopreservation, recovery, and assessment of cell growth/health.
- Recognize the problems related to routine cell culture.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

1	Introduce key concepts of cell biology as they relate to manipulating cells in culture, demonstrate the specific skills used by tissue culture and to provide with information on the applications of tissue culture in modern laboratory settings.	K1
2	Impart basic plant micropropagation in tissue culture, with attention to differences in culture requirements for different plants	K2
3	Apply the techniques of somatic embryogenesis, organogenesis and protoplast culture for ex situ conservation and mass multiplication of endangered and economically important plants	K3
4	Analyze and relate morphological, physiological and somaclonal variations for crop improvement	K4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

<b>Unit:1</b>	<b>Basic concepts of Plant Tissue Culture</b>	<b>15 hours</b>
Introduction to plant tissue culture, laboratory requirements, sterilization, media preparation - inorganic nutrients, organic supplements, carbon source, gelling agents, growth regulators and composition of important culture media (MS, Whites and Gamborg's media).		
<b>Unit:2</b>	<b>Cell growth requirements</b>	<b>15 hours</b>
Cell, tissue and organ culture, isolation of single cells, selection and types of cells, tissue explants and organs for culture - paper, raft nurse technique, plating method, microchamber techniques, cell suspension cultures, chemostat culture, cytological, cytochemical and vascular		

differentiations – totipotency, epidermal and crown – gall cells.		
<b>Unit:3</b>	<b>Behavior of cells in Culture</b>	<b>15 hours</b>
Micropropagation - clonal propagation of elite germplasm, factors affecting morphogenesis and proliferation rate, technical problems in micropropagation, organogenesis, role of growth regulators , somaclonal and gametoclonal variations,somatic embryogenesis - synthetic seeds.		
<b>Unit:4</b>	<b>Methods for generation of haploid plants</b>	<b>15 hours</b>
Haploid production - Androgenesis, gynogenesis, <i>In vitro</i> pollination - ovule and ovary culture, techniques overcoming incompatibility, embryo rescue, Protoplast culture: isolation of protoplasts, mechanical and enzymatic sources, viability, protoplast fusion techniques.		
<b>Unit:5</b>	<b>Application of plant tissue culture</b>	<b>15 hours</b>
Classification of secondary metabolites, <i>In vitro</i> production of secondary metabolites, biosynthetic pathways, immobilized cell cultures and biotransformation, elicitors and hairy root culture, cryopreservation and gene bank , methods of preservation, application of tissue culture.		
		<b>Total Lecture hours</b>
		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Johri, B. M. (1982). Experimental Embryology of Vascular Plants. Narosha Publishing House, New Delhi	
2	Kalyan Kumar, De. (1992). An Introduction to Plant Tissue Culture. New Central Book Agency, Calcutta.	
3	Ramawat, K. G. (2000). Plant Biotechnology. S. Chand & Co., New Delhi	
4	Razdan, M. K. (2004). Introduction to Plant Tissue Culture. 2nd ed. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.	
5	Reinert, J. and Bajaj, Y. P. S. (1977). Plant Cell Tissue and Organ Culture: A Laboratory Manual, Narosa Publishing House, New Delhi.	
<b>Reference Books</b>		
1	Bhojwani, S. S. and Razdan, M. K. (1983). Plant Tissue Culture: Theory and Practice. Elsevier Science Publishers, Netherlands.	
2	Dodds, J. H. and Roberts, I. W. (1985). Experiments in Plant Tissue Culture. Cambridge University Press, UK.	
3	Fowler, M. W. (1986). Industrial Application of Plant Cell Culture. In: Yeoman, M. M.(ed.). Plant Cell Culture Technology. Blackwell, Oxford, London.	
4	Vasil, I. K. (1986). Cell Culture and somatic Cell Genetics of Plants. 3 Volumes. Academic Press Inc.	
5	Hammond, J., McGarvey, P. and Yusibov, V. (2000). Plant Biotechnology. Springer Verlag, New York.	

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/spoc.php?coordinator=574">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/spoc.php?coordinator=574</a>
2	<a href="https://nptel.ac.in/courses/102/103/102103016/">https://nptel.ac.in/courses/102/103/102103016/</a>
3	<a href="https://swayam.gov.in/nd2_cec19_bt01/preview">https://swayam.gov.in/nd2_cec19_bt01/preview</a>
4	<a href="https://swayam.gov.in/nd1_noc19_bt33/preview">https://swayam.gov.in/nd1_noc19_bt33/preview</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	M	S
CO3	S	M	S	M	S	S
CO3	S	S	M	S	S	S
CO4	M	S	S	S	S	M

## PRACTICAL - II

(Theory Papers V, VI, VII & VIII)

(Cell and Molecular Biology, Genetics, Evolution and Plant Breeding, Anatomy, Embryology and Morphogenesis and Plant Tissue culture)

### Course Objectives:

The main objectives of this course are to:

- Understand the structural and functional organization of a cell and molecule.
- Know the genetic analysis at gene, genome and population level
- Sense the variations in the internal structural organization among plants.
- Grasp the knowledge about plant tissue culture

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Find out the cell organelles and various stages of the nucleus	K1
2	Apply the basic principles of genetics and plant breeding in crop improvement	K4
3	Understand the primary and secondary structure of plants.	K2
4	Acquire and analyze the plant tissue culture techniques	K3



### **Paper V- Cell and Molecular Biology**

1. Plant cell, Cell wall, Cell organelles and Nucleus.
2. Root squash in *Allium* and *Chlorophytum* to find out stages of mitosis.
3. Pollen mother cell smear in *Allium* and *Rhoeo* to find out stages of meiosis I
4. Karyotyping and chromosome banding techniques in *Allium*.

### **Paper VI- Genetics, Evolution and Plant Breeding**

1. Dihybrid phenotypic, genotypic and testcross ratios.
2. Incomplete dominance in plants.
3. Interactions of factors and modified dihybrid ratios.
4. Multiple alleles in plants, blood group inheritance in human.
5. Sex linked inheritance in *Drosophila* and plants.
6. Quantitative inheritance in plants.
7. Tetrad analysis in *Neurospora*.
8. Complementation analysis to find out complementation groups.
9. RFLP genetic mapping.
10. Recombination mapping in bacteria.
11. Calculation of recombination frequency.
12. Chromosome mapping from three point test cross data. Calculation of chiasmatic interference.
13. Calculate gene and genotypic frequency by Hardy- Weinberg equation.
14. Emasculation- preparation of the inflorescence for crossing.

### **Paper VII – Anatomy, Embryology and Morphogenesis**

1. Shoot apices by dissection using aquatic plants such as *Ceratophyllum* and *Hydrilla*.
2. Anomalous structures of types mentioned in the syllabus
3. Nodal anatomy of dicot stem to find out unilacunar and multilacunar nodes.
4. Root-stem transition in *Mirabilis*, *Cucurbita* and *Lathyrus*.
5. Maceration of herbaceous and woody stems- separation of different cell types.
6. Wood elements in members of Nympheaceae and Araceae.
7. Sclereids in *Nymphaea* leaf, Sapota fruit and Bean testa
8. Preparation of double stained free hand sections and identification of the tissues with reasons (Normal or Anomalous secondary thickening). Submission of double stained 5 hand section slides.

#### **Embryology:**

1. Microsporogenesis in sections of anthers.
2. Estimation of pollen sterility and fertility percentage.
3. Pollen germination: *in vitro* and *in vivo* viability tests.
4. Embryo sac development through examination of permanent, stained serial sections.
5. Dissection of Embryo - *Abelmoschus*, *Cyamopsis*, *Tridax*
6. Mature embryos of monocot and dicot.
7. Dissection of endosperm haustoria - *Cassia*, *Cucumis*, *Peltophorum*

#### **Morphogenesis**

1. Morphology and anatomy of fungal gall (Club - Root of Cabbage)
2. Morphology and anatomy of insect gall (*Syzygium* and *Pongamia* leaf -gall).

#### Paper VIII- Plant Tissue Culture

1. Preparation of stock solutions for tissue culture
2. Preparation of solid and liquid media for test tube cultures and Petri plate
3. Callus induction and suspension culture.
4. Encapsulation of embryos using sodium alginate Techniques
5. Visit to commercial tissue culture R&D green houses.

Mapping with Program Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	S	S
CO3	S	M	S	S	S	S
CO3	M	S	S	S	M	S
CO4	S	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	HORTICULTURE			L	T	P	C
Core/Elective/Supportive	Elective Paper II			60			4
Pre-requisite	Basic knowledge on horticultural crop plants regarding classification, cultivation, propagation and its applications gained during undergraduate course			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>• Impart knowledge about the principles and practices in canopy management of horticultural crops.</li> <li>• Familiarize with principles and practices of propagation and nursery management for fruits and vegetable crops.</li> <li>• Facilitate deeper understanding on principles and practices of post harvest management of crops.</li> <li>• Develop understanding of organic horticulture production.</li> <li>• Understand the principles of biodiversity and strategies in germplasm conservation of horticultural crops.</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Impart quality education.						K1

2	Understand the principles, and develop skills in biotechnology of horticultural crops.	K2
3	Develop technical manpower to cater the needs of Government, Corporate, Quasi Government and research organizations both in India and abroad	K3
4	Update knowledge on the recent research in the field of breeding of fruit crops of tropical, subtropical and temperate - grown in India.	K4
5	Gain knowledge on the recent advances in the field of biotic and abiotic stress management in horticultural crops.	K4
6	Provide knowledge about different techniques of biology to the Public	K5
7	Take vital step to sustain the Golden Revolution in India.	K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		
<b>Unit:1</b>	<b>INTRODUCTION TO HORTICULTURE</b>	<b>12 hours</b>
Scope and importance of horticulture - divisions of horticulture, climate, soil and nutritional needs, types of irrigation; chemical fertilizers, organic fertilizers and bio fertilizers, plant propagation method - stock - scion relationship, micropropagation by induction of rooting.		
<b>Unit:2</b>	<b>GARDENING</b>	<b>12 hours</b>
Principles and methods of designing indoor and outdoor garden, Lawn making and maintenance; Water garden - cultivation of water plants, Layout for a model college garden, Bonsai technique ,training and pruning of garden plants.		
<b>Unit:3</b>	<b>CULTIVATION OF CROP PLANTS</b>	<b>12 hours</b>
Floriculture - cultivation of commercial flower crops – Tuber rose, Lilium and Chrysanthemum, Flower decoration - Dry and wet decoration, Pomology – cultivation of fruit crops– Pineapple, Grapes and Gauva - spacing, irrigation, field disease control.		
<b>Unit:4</b>	<b>CONTINUATION OF THIRD UNIT</b>	<b>12 hours</b>
Fruit crops - Induction of flowering, flower thinning, fruit setting, and fruit development, Olericulture ,classification of vegetables– Drumstick, Ginger, Potato, Cabbage, Dolichos lab lab and Snake guard, layout for a model kitchen garden, cultivation of tree species - Eucalyptus and Teak, Erosion control.		
<b>Unit:5</b>	<b>CROP MANAGEMENT</b>	<b>12 hours</b>
Pest and weed management - weed problem and ecological perspective, biological control of weeds in Indian region, glass houses, growth regulators in horticulture, growth retarders, sex modification, flower induction, parthenocarpy, harvesting, seed storage, preservation of fruits and vegetables.		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Arora, J. S. (1992). Introductory Ornamental Horticulture. Kalyani Publishers, New Delhi.	

2	J. B. <i>et al.</i> (1977). Fundamentals of Horticulture. Tata McGraw Hill Publishers Co. Ltd., New Delhi.
3	Kumar, N. (1987). Introduction to Horticulture., Rajalakshmi Publishers, Nagercoil.
4	ManibushanRao, K. (1991). Textbook of Horticulture. Macmillan Publishing Co., New York.
5	Rao, K. M. (2000). Text Book of Horticulture. Macmillan India Ltd., New Delhi.
6	ManibushanRao .2005. Text of Horticulture. Second edition. Macmillan India Ltd., New Delhi
7	Nanda and Kochar. 1984. Vegetative propagation of plants.kalyani publishers.
8	Randhava G. S.2004. Floriculture in India.Allied publishers Pvt.Ltd.
9	SubbaRao.1988. Bio fertilizers in Agriculture. Oxford &IBH publisher.
<b>Reference Books</b>	
1	Al David. 1987. A complete guide to gardens. TFH publications.
2	Schegal, H. E. (1986). General Microbiology. Cambridge University, London.
3	Sharma, P. D. (1992). Microbiology. Rastogi& Co., Meerut.
4	Vishnu Swarup .2003. Garden flowers.National BookTrust,India.
5	Readers digest – Complete library of gardens (3 volumes) Kissan world.
6	Borthkur S. and Ghen – Studies on weeds and their control. Reinert and Bajaj 1977 – Plant cell, tissue and org an culture, Narosa publication. New Delhi.
7	Arnold, R.W. (1960). Principles of Plant Breeding. Jolin Wily & Sons, Inc, New York.
8	Swaminathan, M.S. And Jana.S (1992). Biodiversity. Mac Millan, India Press, Madras.
9	George Acquaaah. (2002). Horticulture Principles and Practices. 2nd ed. Pearson Education, Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://nptel.ac.in">http://nptel.ac.in</a>
2	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
3	<a href="http://Agriicarjrf.com">Agriicarjrf.com</a>
4	<a href="http://tnhorticulture.tn.gov.in">tnhorticulture.tn.gov.in</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	M	S
CO3	S	S	S	M	S	M
CO3	S	S	S	S	M	S
CO4	M	S	S	M	S	M
CO5	S	S	S	S	S	S
CO6	S	S	S	S	S	S
CO7	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	PLANT TAXONOMY			L	T	P	C
Core/Elective/Supportive	Core Paper IX			75			4
Pre-requisite	Know about the systematic position of plant			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• Gain knowledge about the classification and nomenclature of Angiosperms</li> <li>• Understand the theory and practices involved in plant systematics</li> <li>• Learn the striking affinities of different plant families</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Classify Plants and recognize the importance of herbarium						K1
2	Evaluate the important herbaria and botanical gardens						K2
3	Interpret the rules of ICBN in Plant Systematics						K3
4	Assess terms and concepts related to Phylogenetic Systematics						K4
5	Generalize the characters of the families according to Bentham & Hooker's system						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>MORPHOLOGY &amp; GENERAL TAXANOMY</b>					<b>15 hours</b>	
Morphological characters of angiosperms, systems of plant classification- Bentham and Hooker system of classification, Engler and Prantl classification, Takhtajan classification and APG IV classification (outline only), general evolutionary trends in all aspects, herbarium techniques, flora and monograph, construction of taxonomic keys (indented and bracketed), a brief account of BSI and its role, botanical gardens, source of taxonomic information							
<b>Unit:2</b>	<b>ICBN &amp; PRINCIPLES OF TAXONOMY</b>					<b>15 hours</b>	
International code of Botanical Nomenclature, typification, effective and valid publication, scientific names, biosystematics- its aim and scope, categories, Turrreson's work, population concept, modern concepts and trends in plant taxonomy, molecular taxonomy – DNA bar-coding and molecular phylogeny, phenetic methods in taxonomy, principles, construction of taxonomic groups, OTU (operational taxonomic unit), characters- coding, measurement of resemblances, cluster analysis, phenons and ranks, discrimination, nomenclature and numerical taxonomy- applications, merits and demerits, cladistics and cladogram, parsimony analysis,							
<b>Unit:3</b>	<b>DESCRIPTION OF FAMILIES-POLYPETALAE</b>					<b>15 hours</b>	
Morphological variations, systematic position, interrelationships, phylogeny and economic importance of following families: Ranunculaceae, Nymphaeaceae, Menispermaceae, Brassicaceae, Caryophyllaceae, Oxalidaceae, Myrtaceae, Portulacaceae							

<b>Unit:4</b>	<b>GAMOPETALAE</b>	<b>15 hours</b>
Morphological variations, systematic position, Interrelationships, phylogeny and economic Importance of following families: Oleaceae, Asclepiadaceae, Boraginaceae. Scrophulariaceae, Bignoniaceae, Verbanaceae,		
<b>Unit:5</b>	<b>MONOCHLAMYDEAE &amp; MONOCOTS</b>	<b>15 hours</b>
Morphological variations, systematic position, interrelationships, phylogeny and economic Importance of following families: Moraceae, Nyctaginaceae, Chenopodiaceae, Loranthaceae, Amaryllidaceae, Zingiberaceae, Aroideae, Cyperaceae, economic importance of families, Special emphasis should be given on morphological and phylogenetic interrelationships, recent revisions and rearrangements between and within the families, and its critical analysis.		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	An introduction to plant Nomenclature. 1979.S.S.R. Bennet international Book distribution India.	
2	Principles of angiosperm Taxonomy. 1973.Devis & Hey wood Krieger publication Co.	
3	Plant Taxonomy and Biosystematics. 1989.Stace Clive. A Edward Arnold.	
4	Plant Systematics. 2012.Gurucharan Singh. Oxford & IBH Pvt. Company.	
5	Bhattacharyya, B. (2005). Systematic Botany. Narosa Publishing House, New Delhi.	
6	Dahlgren, R. (1984). The Families of Monocotyledons: Structure, Evolution and Taxonomy. Springer Verlag	
7	Gamble, J. S. (1933). Flora of the Presidency of Madras. Botanical Survey of India, Calcutta	
8	Heywood, V. H. (ed.) (1968). Modern Methods in Plant Taxonomy. Academic Press,New York.	
9	Lawrence, G. H. M. (1944). Taxonomy of Vascular Plants. Oxford & IBH Publications,New Delhi	
10	Pandey, B. P. (2007). Economic Botany. S. Chand & Co. Ltd., New Delhi.	
11	Pandey, B. P. (2007). Taxonomy of Angiosperms. S. Chand and Co. Ltd., New Delhi	
12	Porter, C. L. (1967). Taxonomy of Flowering Plants. Euasia Publishing House,NewDelhi.	
13	Sambamurthy, A. V. S. S. and Subramanian, N. S. (1989). A Text Book of EconomicBotany. Wiley Eastern Ltd., New Delhi.	

14	Samuel, B. Jones Jr. and Arlene E. Luchsinger (1987). Plant Systematics. 2nd ed. McGraw Hill Publishing Co. Ltd., New Delhi.
15	Singh, V. and Jain, K. K. (1989). Taxonomy of Angiosperms. Rastogi Publications, Meerut

### Reference Books

1	A classification of flowering plants.1938. Vol. I & II Rendle A.R. Cambridge University press.
2	Taxonomy of vascular plants.1951. Lawrance.H.M. Mac Millan & Co.
3	Plant Taxonomy.1967.Hey wood, V.H. English hand book society
4	Principles of Numerical Taxonomy. 1973.Sokal, S.R and Sneath P.H, N.H Fremen &Co.
5	New concepts in flowering plants taxonomy. 1960. Heslop. J. Herrison.Heinemann publishers
6	Principles and methods of Plant Biosystematics.1970.Solbrig. The Mac Millian Company
7	An aid to the International code of Botanical. 1980.Hentry A.N. Today & Tomorrow Pvt. Ltd.
8	Introduction to Principles of Plant Taxonom. 1984. Sivarajan. Oxford & IBH Pvt.cpy.
9	A hand book of field and Herbarium methods.1978.Jain S.K. and Rao R.R. Today and Tomorrow Publications
10	Davis, P. H. and Heywood, V. H. (1967). Principles of Angiosperm Taxonomy. Oliver and Boyd, London.
11	Greuter, W. <i>et al.</i> (1989). International Code of Botanical Nomenclature. International Association of Plant Taxonomy, Leiden
12	Hutchinson, J. (1969). The Genera of Flowering Plants. Clarendon Press, Oxford, UK.
13	Jeffery, C. (1969). An Introduction to Plant Taxonomy - J & A Churchill Ltd., London.
14	Takhtajan, A. L. (1969). Flowering Plants: Origin and Dispersal. Oliver & Boyed, UK.
15	Vashista, P. C. (2006). Taxonomy of Angiosperms. S. Chand and Co. Ltd., New Delhi.

### Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	<a href="https://courses.botany.wisc.edu/botany_400/PlantSystematics.html">https://courses.botany.wisc.edu/botany_400/PlantSystematics.html</a>
2	<a href="https://www.youtube.com/embed/SNV9omPCo0U">https://www.youtube.com/embed/SNV9omPCo0U</a>
3	<a href="https://www.swayamprabha.gov.in/index.php/program/archive/9">https://www.swayamprabha.gov.in/index.php/program/archive/9</a>
4	<a href="https://www.britannica.com/plant/angiosperm">https://www.britannica.com/plant/angiosperm</a>

5	<a href="https://en.wikipedia.org/wiki/Flowering_plant">https://en.wikipedia.org/wiki/Flowering_plant</a>
6	<a href="https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book:Concepts_in_Biology_%28OpenStax%29/14:Diversity_of_Plants/14.4:Seed_Plants:Angiosperms">https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book: Concepts in Biology %28OpenStax%29/14: Diversity of Plants/14.4: Seed Plants: Angiosperms</a>
7	<a href="https://basicbiology.net/plants/angiosperms">https://basicbiology.net/plants/angiosperms</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	S	S
CO3	S	S	S	S	S	S
CO3	S	S	S	S	S	S
CO4	S	S	S	S	S	S
CO5	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	MEDICINAL BOTANY				L	T	P	C
Core/Elective/Supportive	Core Paper X				75			4
Pre-requisite	Basic knowledge on Medicinal plants and their applications gained during undergraduate course.				Syllabus Version	2022-2023		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ul style="list-style-type: none"> <li>Promote good health by teaching the students about diet and nutrition.</li> <li>Educate Intellectual Property Rights of Herbs and Herbal Medicines.</li> <li>Identify rare / endangered medicinal Plants.</li> <li>Document the drugs and to know the methods used by traditional healers.</li> <li>Develop awareness on the utilization of herbal medicines for home remedies.</li> </ul>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Know the recent trends in plant science and its applications.						K1	
2	Navigate the current healthcare environment and to empower clients to make choices and refer when them in appropriate situations						K2	



3	Understand the marketing values and become a good entrepreneur	K3
4	Get exposure in medicinal plants and their significant role in drug discovery.	K4
5	Gain knowledge about nutritive diet for different age groups.	K5
6	Acquire knowledge about healthy food for normal person and patient.	K6

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

<b>Unit:1</b>	<b>INTRODUCTION TO MEDICINAL BOTANY</b>	<b>15 hours</b>
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Historical background, present status, scope of medicinal botany, indigenous medicinal system – bioprospecting, indigenous knowledge system, Ayurveda, Siddha, Unani, Homeopathy. Traditional and folklore system of medicine, need to preserve knowledge system, Ethnobotany – definition, its significance within the limits of the state and nation, conservation of rare heritage from global point of view.

<b>Unit:2</b>	<b>ETHNOBOTANY</b>	<b>15 hours</b>
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Landmarks in history of ethnobiology – relation between geology, phytogeography and ethnobotany. Linkage of Ethno botany with other sciences and disciplines in biology – food and nutrition, medicine, sociological and cultural practices, religions and social costumes and economic relations, archaeology, history and politics, Major tribes of South India and their ethnobotanical and ethno-biological heritage – Parayar, Kurichiar, Paniyar, Mulla, Karuman, Kanikkars, Naikas, Shola Naikas, Thodas, Kothas, Kurumbas, Irullas, Kattu Naikas.

<b>Unit:3</b>	<b>PHARMACOGNOSY</b>	<b>15 hours</b>
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Introduction and history of pharmacognosy. natural source of drugs- crude drugs, classification of crude drugs, collection and processing of crude drugs. phytoconstituents of therapeutic value, histochemical tests for phytochemicals. analytical pharmacognosy – anatomical features of selected medicinal plants (senna leaf, datura leaf, cinchona bark, nuxvomica seed), general methods of phytochemicals and biological screening, natural sources, extraction, isolation and purification of primary and secondary metabolites, study of some herbal formulation techniques and drug cosmetics.

<b>Unit:4</b>	<b>POST HARVEST MANAGEMENT</b>	<b>15 hours</b>
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Post harvest technology of medicinal plants, importance of post harvest technology in medicinal crops, factors responsible for deterioration of medicinal plants, pre and post harvest factors, maturity indicates for harvesting medicinal plants and pre harvest treatments, systems of storage of harvested produce, packing principles and method of processing, important medicinal products- essential oils, volatile and non-volatile oils, oleo resins-active principles.

<b>Unit:5</b>	<b>CONSERVATION OF MEDICINAL PLANTS</b>	<b>15 hours</b>
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Distribution of Indian medicinal plants; introduction and importance of medicinal plants, ecodistribution, mapping distribution in different biogeographic zones, Ethnobotany and conservation of plants with special reference to India, conservation of ecosystems, sacred groves, forestry and unique ecosystems and their ethnobiological values, plants and animals in art, tradition and ethnography: methodologies in ethno-botanical research, conservation of medicinal plants- in-situ and ex-situ conservation centres of medicinal plant conservation in india- IBPGRI,

CIMAP, CDRI, NBPGR, MSSRF, KFRI, TAMPCOL, TBGRI, TKDL and FRLHT.	
	<b>Total Lecture hours</b>
	<b>75 hours</b>
<b>Text Book(s)</b>	
1	“Ethnobiology in human welfare: - abstracts published symposium volume under print – IV international Congress of Ethnobiology – 1994. organized by society of Ethnobotanists, national botanical research institute, Lucknow – 226001.
2	Murthy A.V.S & N.S. Subramanian, 1989. “The Book of economic botany” Wiley Easterns, New Delhi
3	Sivarajan V.V. and Indira Balachandran. 1994. “Ayurvedic drugs and their plant sources”, Oxford – IBH, Bangalore.
4	Swain, T.1963. Plant Taxonomy and Biosystematics, Edward, Arnold, London.
5	Akerele, O.O. Heywood, V. and Singe, H.1991. Conservation of medicinal plants. Cambridge University Press, U.K.
6	Cutler, S.J. and Cutler, S.H.G. 2000. Biologically active natural Products- Pharmaceuticals. CRC Press, USA.
7	Swaminathan, M.S and Kochar, S.L. 1989. Plants and Society. McMillan Publisher, London.
<b>Reference Books</b>	
1	Ariyar, Yegna Narayana A.K. 1980. “Field crops of India”, Bangalore – Printing and Publishing company – Bangalore.
2	Manilal K.S. 1990. “Linkages of ethnobotany with other sciences and disciplines”, ethnobotany 1(1):14-23.
3	Manilal K.S. 1981. “Hortus malabaricum, Indian ethnobotany and Carmelite Missionaries”, in The Christian heritage of Kerala, Ed. K.John, Fr.G.
4	Burkil I.H. 1965. “Chapters on the history and botany in India”. Botanical Survey of India, Calcutta.
5	Natesh, S. 2001. The changing scenario of herbal drugs: Role of Botanist. Phytomorphology. (Golden Jubilee Issue). Pp.75-79.
6	Muthuchelian, K. 2013. Yuirviriman. Monisha Publisher, Madurai, (Tamil Version).
7	Ariyar, Yegna Narayana A.K. 1980. “Field crops of India”, Bangalore – Printing and Publishing company – Bangalore.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	libguides.com/bio108online
2	<a href="https://swayam.gov.in">https://swayam.gov.in</a>
3	<a href="http://nptel.ac.in">http://nptel.ac.in</a>
4	<a href="https://www.fs.fed.us">https://www.fs.fed.us</a>
5	<a href="https://nmpb.nic.in">https://nmpb.nic.in</a>
6	<a href="https://medicinalplants.insightconferences.com">https://medicinalplants.insightconferences.com</a>
7	<a href="https://en.m.wikipedia.org">https://en.m.wikipedia.org</a>
8	<a href="https://researchguides.uic.edu/c.php">https://researchguides.uic.edu/c.php</a>
9	<a href="https://www.loc.gov/herbalmedicine">https://www.loc.gov/herbalmedicine</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M
CO5	S	S	M	S	M	S
CO6	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	PLANT PHYSIOLOGY			L	T	P	C
Core/Elective/Supportive	Core Paper XI			75			4
Pre-requisite	To know the basic physiological conditions of plants			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>To know about the physiology of plants</li> <li>To gain knowledge on metabolism of plants</li> <li>To analyze the seed dormancy</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recognize the plant, water and mineral interaction						K1
2	Understand the remarkable metabolic pathway in plants.						K2
3	Improve the various applications of growth hormones in plants.						K3
4	Estimate the stress resistance mechanism for the better yield of the crops.						K4
5	Implement the methods of breaking seed dormancy in the fields.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Particles Movements in Plants</b>					<b>15 hours</b>	
Diffusion, osmosis, physicochemical properties of water, chemical potential and water potential, bulk movement of water, imbibition, soil-plant atmosphere continuum, transpiration, stomatal mechanism and regulation, a general account of absorption and translocation of water – assimilates, modern concepts of mineral absorption and translocation.							
<b>Unit:2</b>	<b>Photosynthesis</b>					<b>15 hours</b>	
Photosynthesis- pigment systems, electron carriers – photophosphorylation, carbon fixation in C3 and C4 plants, CAM pathway, Photorespiration, citric acid cycle, electron transport and ATP synthesis. Respiration- photorespiration and dark respiration, cycles of respiration,							

Glycolysis , TCA cycle, electron transport system coupled with oxidative phosphorylation.		
<b>Unit:3</b>	<b>Metabolisms and Hormones</b>	<b>15 hours</b>
Nitrogen metabolism - nitrate and ammonium assimilation, amino acid biosynthesis, mechanism of nitrogen fixation, nitrogen uptake and assimilation, plant growth regulators, their mode of action and effects- auxin, gibberellins, cytokinin, ethylene, & ABA, phytochrome and hormones in movements and flowering, physiology of dormancy, senescence and aging, effect of water and salt stress on crop production.		
<b>Unit:4</b>	<b>Photobiology and Stress</b>	<b>15 hours</b>
Sensory photobiology - Structure, function and mechanisms of action of cytochromes and phototropins, stomatal movement, photoperiodism and biological clocks. Solute transport and photoassimilate translocation – uptake, transport and translocation of water, ions, solutes and macromolecules, transpiration, mechanisms of loading and unloading of photo assimilates, Stress physiology – responses of plants to biotic (pathogen and insects) and abiotic (water, temperature and salt) stresses		
<b>Unit:5</b>	<b>Seed Physiology</b>	<b>15 hours</b>
Physiology of seed/ grain development-phases of growth and growth curves, synthesis and accumulation of starches in developing cereal grains, proteins in developing legume seeds, fatty acids, lipids/ oils in developing oily seeds. Physiology of seed dormancy and germination, types of seed dormancy, physical and chemical methods to overcome seed dormancy. Seed germination- role of hydrolytic enzymes in degradation of starches, storage protein and lipids/oils in storage organs and translocation of hydrolyzed products to the developing embryonic axis.		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Verma, V. 2007. Text book of plant physiology. Ane books pvt. Ltd.	
2	Malick, C. P. 2010. Text book of plant physiology. Kalyani publisher	
3	Mukherji, S. 1995. Text book of plant physiology. Tata McGraw-hill education private Ltd.	
4	Singh, Sp. 2001. Text book of plant physiology. Academic internet publishers.	
5	Srivastava, H. S. 2005. Text book of plant physiology. Rastogi Publications	
6	Srivastava, H. S. 2005. Text book of plant physiology. Rastogi Publications.	
7	Verma, V. 2006. Text book of plant physiology. Ane books pvt. Ltd.	
8	Jain, V. K. 2005. Fundamentals of plant physiology. S. Chand and company Ltd	
9	Jain, V. K. (2007). Fundamentals of Plant Physiology. S. Chand & Co., New Delhi.	
10	Leopold, A. C. (1973). Plant Growth and Development. Tata McGraw Hill Publishing Co. Ltd., New Delhi.	

11	Noggle, R. and Fritz, G. I. (1989). Introductory Plant Physiology. 2nd ed. Prentice Hall, New Delhi.
12	Verma, S. K. (1999). Plant Physiology. S. Chand & Co., New Delhi.
<b>Reference Books</b>	
1	Devlin, R. M. (1969). Plant Physiology. Van Nostrand, Reinhold Co., New York.
2	Fang, F. K. (1982). Light Reaction Path of Photosynthesis. Vol. 35. Molecular Biology, Biochemistry and Biophysics. Springer Verlag
3	Meyer, Anderson and Bonning (1965). Introduction to Plant Physiology. D. Van Nostrand
4	Norton, G. (1978). Plant Proteins. Butterworth, London..
5	Palmer, J. M. (ed.). (1984). The Physiology and Biochemistry of Plant Respiration. Cambridge University Press, UK
6	Salisbury, F. B. and Ross, E. (1992). Plant Physiology. Wadsworth, Belmont, California, USA.
7	Bewley, J.D and M. Black (1978). Seed biology Vol. I & II Academic press, New York.
8	Bewley, J.D and M. Black (1985). (Eds.) Seeds; Physiology of development and germination plenum Press: New York.
9	Murray, D.R. (1984). (Ed.) Seed physiology Vol I & II Academic Press: Sydney –New York-London
10	Fang, F. K. (1982). Light Reaction Path of Photosynthesis. Vol. 35. Molecular Biology, Biochemistry and Biophysics. Springer Verlag.
11	Well J.H. (1990). ( Ed.) General Biochemistry Wiley Eastern Limited, New Delhi.
12	Metha S.L. Lodha, M.L. and Sane P.V. (1993). (Eds.) Recent advances in Plant Biochemistry. Publication and information division ICAR, New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec19_bt09/preview">https://swayam.gov.in/nd2_cec19_bt09/preview</a>
2	<a href="https://learn.careers360.com/biology/plant-physiology-chapter">https://learn.careers360.com/biology/plant-physiology-chapter</a>
3	<a href="https://www.youtube.com/watch?v=OW2nOkf3f9w">https://www.youtube.com/watch?v=OW2nOkf3f9w</a>
4	<a href="https://youtu.be/EycfjSrI7Tc">https://youtu.be/EycfjSrI7Tc</a>
5	<a href="https://youtu.be/OW2nOkf3f9w">https://youtu.be/OW2nOkf3f9w</a>
6	swayamprabha course in plant physiology

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	M	S	S	S
CO3	S	S	S	M	S	M
CO3	S	M	S	S	S	S
CO4	S	S	S	M	S	S
CO5	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

Course code		PHYTOCHEMISTRY	L	T	P	C
Core/Elective/Supportive		Core Paper XII	75			4
Pre-requisite	Students should know the nomenclature of macromolecules and biological pathway		Syllabus Version	2022-2023		
Course Objectives:						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>Understand the biochemical organization of cell and different types of macromolecules including their structure and function</li> <li>Know the different metabolic pathways</li> <li>To make the student relate the theoretical and practical aspects to in various aspects</li> <li>To know about the enzymes, their nomenclature, kinetics and functions</li> <li>To apply and acquire laboratory skills &amp; biological significance of co-enzymes and minerals.</li> </ul>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Explain basic metabolic pathways of plants and about secondary metabolites through various biosynthetic pathways					K1
2	Utilization of radioactive isotopes in the investigation of biosynthetic pathways					K2
3	Acquire knowledge on properties and nature of macromolecules					K3
4	Apply current biochemical techniques to plan and carry out the experiments.					K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>MACROMOLECULES</b>					<b>15 hours</b>
Structure of atoms, molecules and chemical bonds, chemical bonds- ionic bond, covalent bond, vander vaal's forces, hydrogen bonding and hydrophobic interactions, bonding in organic molecules, effect of bonding on reactivity, polarity of bonds, bond length, bond angle. dissociation and association constant. Bioenergetics: concepts of free energy, thermodynamic principles in biology, energy rich bonds, coupled reactions and group transfers, biological energy transducers, chemistry of biological molecules, carbohydrates- classification and structure.						

<b>Unit:2</b>	<b>METABOLIC PATHWAYS</b>	<b>15 hours</b>
Amino acids- classification, structure and composition, metabolism of amino acid, proteins: classification, structure (primary structures – peptide bond, n and c terminals), secondary (types of bonding in secondary structures) and tertiary structures (types of bonding in tertiary structure), conformation of proteins (Ramachandran plot, secondary structure, domains, motif and folds). physical and chemical properties of proteins.		
<b>Unit:3</b>	<b>NOMENCLATURE OF ENZYMES</b>	<b>15 hours</b>
Nomenclature, classification and properties of enzymes, mechanism of enzyme action (Lock and key & induced fit model) and factors affecting enzyme activity (substrate, pH and temperature), principles of catalysis, enzymes and enzyme kinetics, enzyme regulation, mechanism of enzyme catalysis, isozymes.		
<b>Unit:4</b>	<b>METABOLIC PATHWAY</b>	<b>15 hours</b>
Classification of lipids, saturated and unsaturated lipids, structure of simple lipids (fats and oils), compound lipids (phospholipids) and derived lipids (carotenoids), oxidation and biosynthesis of any one fatty acid, structure, composition and metabolism of nucleic acids, structure, importance, source, deficiency and symptoms of water soluble and fat soluble vitamins.		
<b>Unit:5</b>	<b>BIOSYNTHETIC PATHWAY</b>	<b>15 hours</b>
Secondary metabolites- a general account, biosynthesis and function of lignins, suberins, terpenes, phenols, alkaloids, flavonoids, biologically important phenolic compounds (phenols, tannins & flavonoids), terpenoids (essential oils, gibberellins and steroids), alkaloids and glycosides, integration of metabolic pathways.		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Campbell, M.K. 1999. Biochemistry, Saunders College Publishing, New York. Harborne, J.B. 1999. Plant Biochemistry. Chapman & Hall, New Delhi	
2	Jain, J.L. 2005. Fundamentals of Biochemistry. S. Chand & Co. New Delhi	
3	Satyanarayana, U. 2005. Biochemistry. Books and Allied (P) Ltd. Calcutta.	
4	Conn E.E. and P.K. Stumpf. 1987. – Outlines of Biochemistry, Wiley Eastern Ltd, Chennai.	
5	Lehninger, A.I. 1987. Biochemistry, Kalyani Publishers, New Delhi	
6	Veerakumari, I. 2004. Biochemistry, MJP Publishers, Chennai	
7	Blonstein, A. B. and King, P. J. (1987). A Genetic Approach to Plant Biochemistry. Narosa, New Delhi.	
<b>Reference Books</b>		
1	Plummer, D.T. 1996. An introduction to practical biochemistry. McGraw Hill.	
2	Brett, C. T. and Hillman, J. R. (ed.) (1985). Biochemistry of Plant Cells Walls. Cambridge University Press, UK.	
3	Cohn, E. E. and Stumpf, P. K. (1994). Outlines of Biochemistry. Wiley Eastern Ltd., New Delhi	

4	Goodwin, F. W. and Mercer, F. I. (1983). Introduction to Plant Biochemistry. 2nd ed. Pergamon Press, New York.
5	Keshav Trehan (1987). Biochemistry. Wiley Eastern Ltd., New Delhi.
6	Lehinger, A. L. <i>et al.</i> (1993). Principles of Biochemistry. CBS Publishers, New Delhi.
7	Stryer, L. (1995). Biochemistry. 4th ed. W. H. Freeman Co., New York.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.swayam.gov.in/nd1_noc20_cy33/preview">https://www.swayam.gov.in/nd1_noc20_cy33/preview</a>
2	<a href="https://www.swayam.gov.in/nd1_noc20_cy22/preview">https://www.swayam.gov.in/nd1_noc20_cy22/preview</a>
3	<a href="https://www.google.com/url?sa=i&amp;url=https%3A%2F%2Fswayam.gov.in%2Fnd2_cec20_bt12%2Fpreview">https://www.google.com/url?sa=i&amp;url=https%3A%2F%2Fswayam.gov.in%2Fnd2_cec20_bt12%2Fpreview</a>

\*S-Strong; M-Medium; L-Low

### PRACTICAL - III

(Theory Papers IX & X)

(Plant Taxonomy and Medicinal Botany)

#### Course Objectives:

The main objectives of this course are to:

- To identify selected taxa using taxonomic keys
- To understand the medicinal plants with their potential

<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Obtain knowledge to identify the plants with morphological of features	K2
2	To expertise the Ethnobotanical investigation and Pharmacognosical analysis and conservation of medicinal plants	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		

#### Paper IX – Plant Taxonomy

1. Diagnostic characters and economic importance of families included in the syllabus.
2. Preparation of artificial key for any 5 families mentioned in the syllabus.



3. Submission of 50 herbarium sheets with binomial, family and economic importance.
4. Submission of 30 herbarium specimens with field note book and tour report.
5. The students should undertake as part of their course a tour and field study of botanical gardens, research institutes and natural vegetation under the guidance of the staff for three to five days within the state and neighboring states.

### Paper X. Medicinal Botany

1. Collection and identification of 100 medicinal plant parts used in different systems of medicine.
2. Submission of 20 medicinal plant herbarium sheets specifically used by tribal medicine mentioning the name of tribe, vernacular and botanical name of plant, name of ailment, mode of preparation of drug and application.

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	M	S	S
CO2	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b>BIOINSTRUMENTATION AND BIOLOGICAL TECHNIQUES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Elective III</b>	<b>60</b>			<b>4</b>
<b>Pre-requisite</b>	To know the principles and operational techniques of biological instruments		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to: <ul style="list-style-type: none"> <li>• Acquaint the students with various techniques used in biological sciences</li> <li>• Know the emerging areas of biotechnology along with underlying principles</li> <li>• Learn about modern instruments to be used in various analytical works.</li> <li>• Introduce preliminary knowledge on research methodology</li> </ul>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						

1	Apply the concepts of Bioanalytical techniques in biotechnological research	K1
2	Handle these techniques in industry	K2
3	Operate and optimize the experimental conditions of different analytic techniques	K3
4	Implement knowledge in the separation of bio entities & to get involved in research work	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		
<b>Unit:1</b>	<b>Microscopy and Mounting</b>	<b>12 hours</b>
Microscopy- light microscopy, scanning and transmission microscopes, different fixation and staining techniques for EM, flow cytometry and immuno fluorescence microscopy, detection of molecules in living cells, in situ localization by techniques such as FISH & GISH, fixation of plant materials- fixation ,fixative , dehydration , clearing reagents , embedding with wax and sectioning, stains - natural and synthetic stains, staining mechanisms, mountants, microtome - rotary, wood and cryo types		
<b>Unit:2</b>	<b>Bioinstrumentation</b>	<b>12 hours</b>
Principle and applications of pH meter , centrifugation (clinical, high speed, micro and ultra centrifuges), colorimetry, uv visible spectrophotometer , photometry - flame photometer, infrared spectro photometry (IR), atomic absorption spectroscopy (AAS), nuclear magnetic resonance (NMR) molecular structure determination using x-ray diffraction and NMR		
<b>Unit:3</b>	<b>Chromatography</b>	<b>12 hours</b>
Chromatography - principles and applications of Thin Layer Chromatography (TLC), Column Chromatography, Adsorption Chromatography, Ion-Exchange Chromatography, Affinity Chromatography, Gel Permeation Chromatography, Gas Chromatography (GC), Liquid Chromatography (LC), Liquid Chromatography and Mass Spectrum (LC-MS), Gas Chromatography and Mass Spectrum (GC-MS), High Performance Liquid Chromatography (HPLC).		
<b>Unit:4</b>	<b>Electrophoresis techniques</b>	<b>12 hours</b>
Principles and applications of electrophoresis, types of electrophoresis - starch gel electrophoresis, agarose gel electrophoresis, submarine gel electrophoresis, pulse field electrophoresis, polyacrylamide gel electrophoresis, isoelectric focusing, capillary electrophoresis, immuno electrophoresis, analysis of bands, direct photometric scanning, staining methods, gel documentation system, autoradiography, enzyme assay, immunological methods and blotting techniques.		
<b>Unit:5</b>	<b>Radio labeling techniques &amp; Basic Research Methodology</b>	<b>12 hours</b>
Radio labeling techniques- Detection and measurement of different types of radioisotopes used in biology, incorporation of radio isotopes in biological tissues and cells, molecular imaging of radioactive material & safety guidelines. <b>Research Methodology</b> –Research objectives ,		

Introduction, importance of research. Research methods in biological sciences, Research process - searching the literature, journals, index, abstracts, computer searching and references. Analysis & presenting the work-components of thesis writing and applications of statistical methods in research.		
		<b>Total Lecture hours</b>
		<b>60 hours</b>
<b>Text Book(s)</b>		
1	M.Daniel (2003). Basic Biophysics for Biologist. Agrobios (India), Jodhpur.	
2	L.Veerakumar (2006). Bioinstrumentation. MJP Publisher, Chennai	
3	Dwivedi, J. N. and Singh, R. B. (1985). Essential of Plant Technique. Scientific Publications, Jodhpur.	
4	Jayaraman, J.1981. Laboratory Manual in Biochemistry. Wiley Eastern Ltd., New Delhi	
5	Krishnamurthy, K. V. (1988). Methods in Plant Histochemistry. S. Viswanathan & Co.,Madras	
6	Sass, J. E. (1967). Botanical Microtechnique. 3rd ed. Oxford & IBH Publishing Co.,New Delhi	
7.	Dr.S. Palanichamy, Dr. S. Shanmugavelu (1997) Resarch methods in Biological sciences.	
8		
<b>Reference Books</b>		
1	Christian, G. D. (1979). Atomic Absorption Spectroscopy - John Fredric, J. Fieldman Wiley & Sons, New York.	
2	Jensen, W. A. (1962). Botanical Histochemistry: Principles and Practice. W. H. Freeman and Co., San Francisco, USA.	
3	Johansen, D. A. (1940). Plant Microtechnique. McGraw Hill, New York.	
4	Skoog, A. and West, M. (1980). Principles of Instrumental Analysis - W. B. Saunders Co., Philadephia, USA.	
5	Wilard, H. H., Meritt, L. L. Jr. and Dean, J. A. (1965). Instrumental Methods of Analysis. 4th ed. Van Nostrand Inc. Princeton, New Jersey.	
6	Williams, B. L. and Wilson, K. (1983). A Biologist's Guide to Principles Techniques of Practical Biochemistry. Edward Arnold, London	
7	J. Anderson & M. Poole (2011) 4 <sup>th</sup> edition Assignment & Thesis writing	

8	Paneerselvam, R. 2014 ( 2 <sup>nd</sup> edition) Research Methodology.
9	Palanichamy S. & S.Shanmuga velu. 1997. Research methods in Biological Sciences
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_bt22/preview">https://swayam.gov.in/nd2_cec20_bt22/preview</a>
2	<a href="https://www.swayam.gov.in/explorer?category=BIO_TECH">https://www.swayam.gov.in/explorer?category=BIO_TECH</a>
3	<a href="https://swayam.gov.in/nd1_noc20_bt31/preview">https://swayam.gov.in/nd1_noc20_bt31/preview</a>
4	<a href="https://swayam.gov.in/nd1_noc20_bt31/preview">https://swayam.gov.in/nd1_noc20_bt31/preview</a>
5	<a href="https://swayam.gov.in/NPTEL">https://swayam.gov.in/NPTEL</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	S	S	S	S	S
CO3	M	S	S	S	S	S
CO3	S	S	S	S	S	S
CO4	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	BIOTECHNOLOGY AND GENETIC ENGINEERING			L	T	P	C
Core/Elective/Supportive	Core Paper XIII			90			4
Pre-requisite	Students learn about basic techniques of recombinant DNA technology such as molecular cloning, gene manipulation and producing GMOs			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>Understand the structure and function of cell and cell membranes and macromolecular components of cells and their functions.</li> <li>Learn the general principles of gene organization and expression in prokaryotic and eukaryotic organisms.</li> <li>Implement the basic pathways and mechanisms in biological energy transduction and cell</li> </ul>							

cycle control and relate properties of cancerous cells to mutational changes in gene function.		
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Apply the basic concepts of cell and molecular biology in modern biology	K1
2	Correlate between genotypic and phenotypic attributes of an organism	K2
3	Perform genetic manipulations using types of cloning and expression vectors	K3
4	Explain how genetic engineering involves the use of recombinant DNA technology for crop improvement and to identify the molecular markers for selection of superior genotypes.	K4
5	Acquire fundamental knowledge on the application of various molecular tools and techniques for improvement of microbes and higher plants	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>		
<b>Unit:1</b>	<b>Molecular Biology</b>	<b>18 hours</b>
Scope and importance of Biotechnology and genetic engineering, isolation of RNA, DNA (genomic and plasmid), quantification of isolated nucleic acids, radiolabelling of nucleic acids- End labelling, nick translation, Isolation of specific genes from plant tissue, restriction Enzymes, DNA ligase, T4 DNA polymerase, polynucleotide kinase, alkaline phosphatase, Cohesive and blunt end ligation, linkers, adaptors, homopolymeric tailing, gene cloning vectors, general characteristics of vectors, brief account on naturally occurring plasmids, Promoter, MCS, Ori, and marker genes-lac Z, Construction of pBR 322 and pUC 18 vectors, expression vectors, E.coli promoters, lac promoter, TRP promoter, Lambda based vectors, Cosmids, Phagemids, BACs, YACs and Shuttle vectors.		
<b>Unit:2</b>	<b>Molecular Cloning</b>	<b>18 hours</b>
Cloning of eukaryotic genes in prokaryotic vectors, synthesis of cDNA, cloning cDNA in plasmid vectors, cloning cDNA in bacteriophage vectors, Polymerase Chain Reaction (PCR) – methodology and essential features primers, Taq polymerases, reverse transcriptase, types of PCR-Nested, inverse, RT-PCR (real time PCR), applications of PCR, sequencing of genes-Sanger’s method, Maxam and Gilbert method & automatic DNA sequencing, artificial synthesis of DNA fragments, Phosphodiester, phosphotriester and Phosphite ester methods		
<b>Unit:3</b>	<b>Genomic and cDNA Libraries</b>	<b>18 hours</b>
Purification of vector DNA, restriction digestion, end modification, cloning of foreign genes from mRNA, genomic DNA, synthetic DNA, transformation and transduction techniques, preparation of competent cells of bacteria, chemical methods- calcium phosphate precipitation method, liposome mediated method, physical methods- Electroporation, gene gun method and Agrobacterium mediated gene transfer in plants, Cloning and transfer of Nod gene, nif gene and Hup genes to Eukaryotes, In vitro mutagenesis and deletion techniques, gene silencing techniques, siRNA technology, Micro RNA, construction of siRNA vectors, principle and application of gene silencing, gene knock out in bacterial and eukaryotic organisms. CRISPR-Cas9 technique.		
<b>Unit:4</b>	<b>Genomic and cDNA Libraries</b>	<b>18 hours</b>

Screening of recombinant clones, direct antibiotic resistance screening, blue white colour screening, identification of the clone from a gene library by nucleic acid hybridization, functional screening methods, colony immunoassay, reporter gene based screening. positive selection vector method, diagnostic restriction digest method, colony PCR method, sequencing method.		
<b>Unit:5</b>	<b>Applications of Genetic Engineering</b>	<b>18 hours</b>
Chloroplast and mitochondrial engineering, transgenic plants, genetically modified (GM) plants (bt cotton, bt brinjal), edible vaccines from plants, plants as bioreactor, molecular breeding, ethical issues associated with GM crops and GM food, labeling of GM plants and products. RNAI and antisense RNA technology for extending self life of fruits and flowers (ACC synthase gene and polygalacturonase), delay of softening and ripening of fleshy fruits (tomato, banana, watermelons), gene pollution. environmental impact of herbicide resistance crops and super weeds		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Dubey, R.C. (1999). A Text Book of Biotechnology. S. Chand & Company.	
2	Gupta, P.K. (1998). Elements of Biotechnology. Rastogi Publication.	
3	Ignachimuthu, S.(1995). Basic biotechnology. TaTa Mc Graw-Hill Publishing Company Ltd., Madras	
4	Santharam, S. and Montgomery, J.F. (1999). Biotechnology, Biosafety and Biodiversity. Oxford and IBH Publishing Co., New Delhi.	
5	Dubey, R. C. (2008). A Textbook of Biotechnology. S. Chand & Co. Ltd., New Delhi.	
6	Gupta, P. K. (1994). Elements of Biotechnology. Rastogi and Co., Meerut.	
7	Satyanarayana, V. (2005). Biotechnology. Books and Allied (P) Ltd., Kolkata.	
8	Singh, B. D. (1998). Biotechnology. Kalyani Publishers, New Delhi.	
<b>Reference Books</b>		
1	Callow, J.A., Ford Lloyd, B.V. and Newbury, H.J. (1997). Biotechnology and Plant Genetic Resources; Conservation and Use. CAB International, Oxon, UK.	
2	Glazer, A.N. and Nikaido, H. (1995). Microbial Biotechnology. W.H. Freeman & Company, New York, USA.	
3	Kantha, K.K. (1985). Cryopreservation of Plant cells and organs. CRC Press, Boca Ration, Florida, USA	
4	Hammaond, J., McGarvey, P. and Yusibov, V. (2000). Plant Biotechnology. Springer Verlag.	
5	Primrose, S. B. (1994). Molecular Biotechnology. Blackwell Scientific Publishing, Oxford.	
6	Primrose, S. B., Twyman, R. M. and Old, R. W. (2001). Principles of Gene Manipulation. Blackwell Science, London.	
7	Sambrook, J., Fritsch, E. F. and Maiatis, T. (2000). Molecular Cloning: A Laboratory Manual. Spring Harbor Laboratory Press, New York.	
8	Slater, A., Scotta, N. and Fowler, M. (2003). Plant Biotechnology. Oxford University Press.	

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	<a href="https://nptel.ac.in/courses/102/103/102103013/">https://nptel.ac.in/courses/102/103/102103013/</a>
2	<a href="https://nptel.ac.in/courses/102/103/102103074/">https://nptel.ac.in/courses/102/103/102103074/</a>
3	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>
4	<a href="https://nptel.ac.in/content/storage2/courses/102103013/pdf/mod7.pdf">https://nptel.ac.in/content/storage2/courses/102103013/pdf/mod7.pdf</a>
5	<a href="https://nptel.ac.in/content/storage2/courses/102103013/pdf/mod1.pdf">https://nptel.ac.in/content/storage2/courses/102103013/pdf/mod1.pdf</a>

Mapping with Programme Outcomes						
COs	PO1	PO2	PO3	PO4	PO5	PO6
CO1	S	M	M	S	M	S
CO3	M	S	S	M	S	M
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	M
CO5	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

## PRACTICAL - IV

(Theory Papers XI, XII & XIII)

(Plant Physiology, Phytochemistry and Biotechnology & Genetic Engineering)

### Course Objectives:

The main objectives of this course are to:

- Procure the knowledge on physiological functions of the plant
- Compute the biochemical contents present in a given plant sample
- Demonstrate the genetic engineering techniques

Expected Course Outcomes:		
On the successful completion of the course, student will be able to:		
1	Determine the metabolic process of plants using standard procedures	K4
2	Apply the principles of reagents to estimate the macromolecular contents of the plant samples.	K5
3	Gain the proficiency skills of isolation and estimation of genetic materials	K3

### **Paper XI- Plant Physiology**

1. Calculate OP of cell sap by plasmolytic method.
2. Find out DPD of plant tissue by weight change method.
3. Measure the rate of transpiration at different light intensities using simple potometer.
4. Determine the rate of photosynthesis under different CO<sub>2</sub> concentrations with Wilmot's bubbler.
5. Find out the rate of photosynthesis under different light intensities with Wilmot's bubbler .
6. Hill reaction of photosynthesis with isolated chloroplast and 2,6 Dichlorophenolindophenol.
7. Determine the respiratory quotient with Ganong's respirometer.
8. Find out seed viability by tetrazolium chloride method.
9. Determination of electrical conductivity of seed leachates.
10. Determine the activity of amylase in germinating wheat grains.

### **Paper XII- Phytochemistry**

1. Quantitative estimation of starch in the given material by Iodine method.
2. Quantitative estimation of total protein in plant material by Biurete test.
3. Quantitative estimation of lipid in the given plant material.
4. Quantitative estimation of amino acids by Ninhydrin test.
5. Separation of plant pigments by Thin layer Chromatography.
6. Separation of aminoacids by Thin layer Chromatography.
7. Determination of peroxidase enzyme activity.
8. Qualitative estimation of phenols in the given plant part.
9. Qualitative estimation of terpenoids in the given plant part.
10. Qualitative estimation of alkaloids in the given plant part.
11. Qualitative estimation of flavonoids in the given plant part.

### **Paper XIII- Biotechnology and Genetic Engineering**

1. Isolation of genomic DNA from plant leaf.
2. Estimate quantity of isolated DNA by spectrophotometric method.
3. Agarose gel electrophoresis of genomic DNA.
4. Restriction digestion of genomic DNA.
5. Isolation of plasmid DNA from bacteria.
6. Agarose gel electrophoresis of plasmid DNA.
7. Identify transgenic fruits and vegetables.
8. PCR amplification of DNA from two cultivars with RAPD primers.

<b>Mapping with Programme Outcomes</b>						
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>



<b>CO1</b>	S	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	Bioinformatics, Industry and Biostatistics			L	T	P	C
Core/Elective/Supportive	Elective IV			90			4
Pre-requisite	Should know the basics knowledge about the computer applications			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ul style="list-style-type: none"> <li>• Know about the knowledge of bioinformatics in different fields of science</li> <li>• Equip on the knowledge of proteomics and genomics</li> <li>• Analyze the utility of biostatistics in plant science</li> </ul>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Acquire the knowledge of biological databases					K1	
2	Assess the knowledge of biological tools to manipulate unknown biomolecules to known.					K2	
3	Be familiar with computational skills towards Industry 4.0					K3	
4	Execute appropriate algorithms and to identify the similarities and dissimilarities in biological samples.					K4	
5	Practice with ideas generated through various tools in Bioinformatics					K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>Biological databases</b>			<b>18 hours</b>			
Introduction Bioinformatics, definition and history of bioinformatics, computational biology and bioinformatics, biological databases- types of data and databases, nucleotide sequence database (EMBL, GENBANK, DDBJ), Protein sequence database (PIR, SWISS- PROT, TrEMBEL), Secondary Databases (PROSITE, PRINTS, BLOCKS), Protein structure database (PDB), information retrieval from database- search concepts, tools for searching, homology searching and finding domain and functional site homologies.							
<b>Unit:2</b>	<b>Genomics and Drug Discovery</b>			<b>18 hours</b>			
Genomics - types (structural and functional), gene finding tools in prokaryotes and eukaryotes,							

genome annotation, comparative genomics, single nucleotide polymorphism gen-snip, drug discovery process. target identification and validation and lead optimization and validation. methods and tools in computer-aided molecular design, analog based drug design:- pharmacophores . qsar. structure based drug design:- docking, de novo drug design. virtual screening.		
<b>Unit:3</b>	<b>Proteomics</b>	<b>18 hours</b>
Introduction, tools and techniques in Proteomics, protein-protein interactions, methods of gene family identification- cluster analysis, clustering by single linkage, core proteome, between proteome comparison, post translational modifications, prediction of post translational modification-PSORT, Signal P, Chloro P, Target P, Mitoprot II, Predatar, NetOGlyc, Big-PI Predictar, NetPhos, FindMod, GlycoMod, DeltaMass, Scansite		
<b>Unit:4</b>	<b>Basics of Computing for Industry readiness (4.0)</b>	<b>18 hours</b>
Introduction to IoT, Technologies for IoT, applications of IoT- Education, Agriculture. Data Summarization & visualization , Variability Measures - variance – range - IQR – Standard Deviation , Sum of Squares , Identifying Outliers using IQR, Data Visualization , Introduction – Datasets , Exploratory Data Analytics, Univariate analysis – Histogram , Bivariate analysis - Box Plot , Multivariate analysis - Scatter Plot - MASS Package , Categorical Variable - Bar Chart and Mosaic Plot, Descriptive Data Analytics, Skewness– Kurtosis. <b>Artificial Intelligence in Biology research:</b> AI in drug design – AI in Phylogeny – AI in next generation sequencing – AI in protein structure prediction – AI in protein folding analysis.		
<b>Unit:5</b>	<b>Biostatistics</b>	<b>18 hours</b>
Methods of collection and classification of data, distribution- frequency, normal, graphical representation, Measures of central tendency- mean, median and mode, measures of dispersion- mean deviation, standard deviation, variance, standard error, coefficient of variation, probability - definition, mutually exclusive events, independent events – product rule, Tests of significance - t-test, Chi square test, F-test, ANOVA, correlation and regression -Linear regression and correlation. Design of experiments- principles - replication and randomization, common designs in biological experiments- completely randomized, randomized block, latin square and factorial.		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Bioinformatics. A practical guide to analysis of genes and proteins. 1998. Baxevanis and Quелlette.	
2	Bioinformatics for beginners. 2002 K.Mani and Vijayaraj	
3	Introduction to Bioinformatics. 2002. S.SundaraRajan and R.Balaji.	
4	Palanichami, S. and Manokaran, M. (1994), Statistical methods for Biologists.	
5	V. Bhuvaneshwari, “Data Analytics with R Step by Step”, Scitech Publication, ISBN – 978-81- 929131-2-4, Edition 2016.	
6	Emmanuel Paradis, “R for Beginners”, 2005	
7	P. Kaliraj & T. Devi, Higher Education for Industry 4.0 and Transformation to Education 5.0, 2020	

<b>Reference Books</b>	
1	Bioinformatics: A biologist's guide to biocomputing and the internet. 2000. Stuart M.Brown
2	Mount, D.W. (2001).Bioinformatics – Sequence and GenomeAnalysis, 1st Edition, Cold Spring Harbor Laboratory Press, New York, USA.
3	Introduction to Bioinformatics. 2002. Arthur M.Lesk.
4	Introduction to Bioinformatics. 1999. T.K.Attwood and Parry-Smith.
5	Bioinformatics: Sequence and genome analysis. 2001. David W. Mount
6	Khan, J.D and Khanum, A. (1994), Fundamentals of Biostatistics.
7	Zar, J.K. 1984, Biostatistical analysis, Prentice-Hall International, INC, Englewood chiffs, New Jersey.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd1_noc20_bt10/preview">https://swayam.gov.in/nd1_noc20_bt10/preview</a>
2	<a href="https://swayam.gov.in/nd1_noc20_bt28/preview">https://swayam.gov.in/nd1_noc20_bt28/preview</a>
3	<a href="https://www.classcentral.com/course/swayam-bioinformatics-algorithms-and-applications-10031">https://www.classcentral.com/course/swayam-bioinformatics-algorithms-and-applications-10031</a>
4	<a href="https://nptel.ac.in/courses/102/106/102106065/">https://nptel.ac.in/courses/102/106/102106065/</a>
5	<a href="http://www.ideou.com">www.ideou.com</a>
6	<a href="http://www.creativeconfidence.com">www.creativeconfidence.com</a>
7	<a href="http://www.swyam.gov.in">www.swyam.gov.in</a>
8	<a href="http://www.nptel.ac.in">www.nptel.ac.in</a>
9	<a href="http://www.videlectures.net">www.videlectures.net</a>

<b>Mapping with Programme Outcomes</b>						
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>
<b>CO1</b>	S	S	M	S	S	S
<b>CO3</b>	S	S	S	M	S	S
<b>CO3</b>	S	M	M	S	M	S
<b>CO4</b>	M	S	S	M	S	S
<b>CO5</b>	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

## **PROJECT WORK & VIVA – VOCE**

### **COURSE OBJECTIVES**

- To obtain knowledge related to the practical problems in various fields.
- To understand the analytical skills to solve the selected problems.
- To get confidence by solving the selected problems through proper execution.

## COURSE OUTCOME

<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Employ the theoretical knowledge in real field.	K1
2	Inspect the importance of the task to collect the related necessary data.	K2
3	Evaluate the relationships existing between the theories and the fields.	K3
4	Implement statistical tools and to get the correct interpretation to present the results.	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		

- Project work will be allotted to individual student under the supervision and guidance of the faculty members during the IV Semester.
- Project works will be given based on the field of specialization of the supervisors under whom the students are allotted (fields of specialization are Systematic Botany, Microbiology and Phytopathology, Ethnobotany, Ecology and Conservation biology, etc., )
- The students shall do their projects under their supervisors and submit at the end of the IV Semester.
- Both the Internal and External Examiners shall jointly evaluate the project works submitted by the students and marks will be awarded on the basis as mentioned below.

### Guidelines to the Distribution of Marks:

<b>CIA</b>	Project Review	<b>40</b>	<b>75</b>
	Regularity	<b>35</b>	
<b>ESE</b>	Project Presentation	<b>50</b>	<b>75</b>
	Viva – Voce	<b>25</b>	
<b>Grand Total</b>			<b>150</b>

<b>Mapping with Programme Outcomes</b>						
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>

CO1	S	S	M	S	S	S
CO3	S	S	S	M	S	S
CO3	S	M	M	S	M	S
CO4	M	S	S	M	S	S
CO5	S	S	S	S	M	S

**PROVIDENCE COLLEGE FOR WOMEN, COONOR (AUTONOMOUS)**

**PG MODEL QUESTION PAPER (PRACTICALS)**

**End semester Examination Question Paper Pattern**

(For the candidates admitted from the academic year 2022-23 onwards)

**Time: 4 Hours**

**Max. Marks: 50**

**Core Practical: I - (Microbiology, Phycology, Mycology and Lichenology, Bryophytes, Pteridophytes, Gymnosperms and Paleobotany and Environmental Botany and Conservation Biology)**

1. Stain the given bacterial culture 'A' by Gram staining method. Write the procedure, identify the bacteria and submit the slide for valuation. - 5 mark
2. Analyze the algal mixture 'B' and 'C'. Identify any two genera. - 5 mark
3. Make suitable micro preparations of 'D', 'E' and 'F'. Identify by giving salient features. Draw labeled sketches, submit the slides for valuation. -12 marks
4. Calculate abundance, density and frequency of plants in the Quadrat method 'G'. - 8 marks
5. Spotters H, I, J, K and L **5x2= 10 marks**

Practical	- 40 marks
Record	- 10 marks
Total	- 50 marks

**Key**

1. A - Gram Staining ( Slide – 2 mark, Identification – 1 mark, Reason – 2mark)
2. B & C - Algal Mixture ( Identification – 1mark, Reason and Sketch – 1 ½ mark)
3. D – Fungi/ Bryophyta  
E- Pteridophyta

- F- Gymnosperm (Identification – 1mark, Slide – 1mark, Reason and Sketch – 2mark)
4. G- Ecology ( Identification – 2mark, Notes, tabulation and Graph – 6 mark)
- H – Fungi/Bryophyta
- I– Pteridophyta
- J- Gymnosperm
- K – Lichen
- L- Paleobotany (Identification – 1mark, Reason – 1mark)

**PROVIDENCE COLLEGE FOR WOMEN, COONOOR (AUTONOMOUS)**  
**PG MODEL QUESTION PAPER (PRACTICALS)**  
**End semester Examination Question Paper Pattern**

(For the candidates admitted from the academic year **2022-23** onwards)

**Time: 4 Hours**

**Max. Marks: 50**

**Core Practical: II- (Cell and Molecular Biology, Genetics, Evolution, Plant Breeding, Anatomy, Embryology, Morphogenesis and Plant Tissue culture)**

1. Take T.S. of **A** and **B** identify by giving reasons / Salient features. Draw labeled sketches and submit the slide for valuation **2x5=10 marks**
2. Dissect and display any one stage of the developing embryo in the given material **C**. Submit the slide for valuation **1x5=5 mark**
3. Identify the given material **D**. **1x5=5 mark**
4. Make an acetocarmine squash preparation of the given material **E**. Find out two stages. Write the procedure, draw diagrams and submit the slide for valuation **1x4=4 mark**
5. Solve the given problem **F** **1x4=4 mark**
6. Writes notes on **G, H, I, J, K, and L**. Identify by giving reasons and draw labeled sketches **6 x 2 =12 marks**

		- 40 marks
Practical		
Record		- 10 marks
Total		- 50 marks

**Key**

1. A – Anatomy

- B – Anatomy (Identification – 1mark, Slide – 2 mark, Reason and Sketch – 2mark)
2. C – Embryology (Identification – 1mark, Slide – 1 mark, Reason and Sketch – 2mark)
  3. D – Nodal Anatomy (Identification – 1mark, Reason and Sketch - 3mark)
  4. E – Cell and Molecular Biology (Identification – 1mark, Slide – 1 mark, Reason and Sketch – 2mark)
  5. F – Genetics Problem
  6. G – Cell and Molecular Biology
- H – Genetics
- I – Plant Breeding
- J – Embryology
- K – Morphogenesis

**PROVIDENCE COLLEGE FOR WOMEN, COONOR  
(AUTONOMOUS)**

**PG MODEL QUESTION PAPER (PRACTICALS)**

**End semester Examination Question Paper Pattern**

(For the candidates admitted from the academic year **2022-23** onwards)

**Time: 4 Hours**

**Max. Marks: 50**

**Core Practical: III- (Plant Taxonomy and Medicinal Botany)**

1. Write the binomial of **A & B** with the aid of Gamble's Flora **5 x2 = 10 marks**
2. Refer the specimens **C & D** to their respective families give the floral characters and draw the floral diagram and floral parts. **5 x2 = 10 marks**
3. Construct an artificial key from the comparison chart for the plants **E, F, G, H & I** using the vegetative and floral characters. **5x1= 5 marks**
4. Give the binomial and family name of **J & K** **2 x 2½ = 5marks**

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Practical -30 marks

Record - 10 marks

Taxonomy herbarium (50sheets) - 5 marks

Medicinal botany herbarium (20sheets) & Plant parts - 5 mark

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Total - **50** marks

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## Key

1. A - Taxonomy  
B – Taxonomy (Identification – 2mark, Reason – 3mark)
2. C – Taxonomy  
D – Taxonomy (Reason – 1mark, Notes – 1mark, floral character, formula and floral diagram – 3 mark)
3. E to I – Taxonomy (Identification – 2mark, Reason – 3mark)
4. J – Medicinal Botany  
K – Medicinal Botany (Identification – 1mark, Reason – 1 ½ mark)

### PROVIDENCE COLLEGE FOR WOMEN, COONOR (AUTONOMOUS)

#### PG MODEL QUESTION PAPER (PRACTICALS)

#### End semester Examination Question Paper Pattern

(For the candidates admitted from the academic year 2022-23 onwards)

**Time: 4 Hours**

**Max. Marks: 50**

#### **Core Practical: IV- (Plant Physiology, Phytochemistry, Biotechnology and Genetic Engineering)**

1. Write Procedure, apparatus required for the experiment 'A'. Give the inference from the experiment and leave the setup for valuation. **1x10 = 10** marks
2. Estimate the amount of Phytochemical analysis in the given sample 'B'. Give the inference from the experiment and leave the setup for valuation. **1x10= 10** marks
3. Write notes on interest of **C, D, E, F and G** **5 x 4 = 20** marks

marks

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Practical	- 40 marks
Record	- 10

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Total	- 50 marks
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### Key

1. A - Plant Physiology (Requirements-3, Procedure & Result-4, Set up – 3marks)
2. B – Phytochemistry (Requirements-3, Procedure & Result-4, Set up – 3marks)
3. C - Plant physiology  
D - Phytochemistry  
E - Biotechnology and Genetic Engineering  
F - Biotechnology and Genetic Engineering  
(Identification – 1mark, Reason and sketch– 3mark)

## PROVIDENCE COLLEGE FOR WOMEN, COONOR (AUTONOMOUS)

### PG MODEL QUESTION PAPER (Theory)

#### End semester Examination Question Paper Pattern

(For the candidates admitted from the academic year 2022-23 onwards)

**Time: 3Hours**

**Max. Marks: 50**

### Section A (10x1 = 10 marks)

Choose the best answer pattern

1. a. b. c. d.
2. a. b. c. d.
3. a. b. c. d.
4. a. b. c. d.
5. a. b. c. d.
6. a. b. c. d.
7. a. b. c. d.
8. a. b. c. d.
9. a. b. c. d.
10. a. b. c. d.

- a.                      b.                      c.                      d.

**Section B (4x5= 20 marks)**  
**Open Choice pattern**

11.  
12.  
13.  
14.  
15.  
16.  
17.  
18.

**Section B (2 x 10= 20 marks)**  
**Open Choice pattern**

19.  
20.  
21.  
22.

**PROVIDENCE COLLEGE FOR WOMEN (AUTONOMOUS), COONOR**  
**PG & RESEARCH DEPARTMENT OF COMMERCE**  
**B.COM**  
**SYLLABUS – 2021-2022 & 2022 ONWARDS**

Part	Course Code	Title of the Course	Credits	Hours		Maximum Marks		
				Theory	Practical		ES E	Total
<b>FIRST SEMESTER</b>								
		Language-I	4	6	-	50	50	100
		English-I	4	6	-	50	50	100
		Core I – Principles of Accountancy	4	5	-	50	50	100
		Core II–Business Organization & Office Management	4	5	-	50	50	100
		Allied Paper I – Agricultural Economy of India	4	6	-	50	50	100
		Environmental Studies #	2	2	-	-	50	50
		<b>Total</b>	<b>22</b>	<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>
<b>SECOND SEMESTER</b>								
		Language-II	4	6	-	50	50	100
		English-II	4	6	-	50	50	100
		Core III – Financial Accounting	4	5	-	50	50	100
		Core IV – Principles of Marketing	4	5	-	50	50	100
		Allied Paper II –Economic Analysis	4	6	-	50	50	100
		Value Education – HumanRights #	2	2	-	-	50	50
		<b>Total</b>	<b>22</b>	<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>
<b>THIRD SEMESTER</b>								

		Core V – Higher Financial Accounting	4	7		50	50	100
		Core VI – Commercial Law	4	6		50	50	100
		Core VII – Principles of Management	4	6		50	50	100
		Allied : III - Mathematics for Business	4	6		50	50	100

		Skill based Subject -1 : Business Application Software-I	3	3		30	45	75
		Tamil @ / Advanced Tamil # (or) Non-Major Elective-I Yoga for Human Excellence # / Women's Rights # Constitution of India #	2	2		50		50
		<b>Total</b>	<b>21</b>	<b>30</b>		230	295	<b>525</b>

<b>FOURTH SEMESTER</b>								
		Core VIII – Corporate Accounting I	4	5		50	50	100
		Core IX – Computer Applications in Business	4	4		50	50	100
		Core X – Company Law and Secretarial Practice	4	4		50	50	100
		Core XI – Executive Business Communication	3	3		50	50	100
		Core XII – Banking Theory	3	3		50	50	100
		Allied: IV: Statistics for Business	4	6		50	50	100
		Skill based Subject-2: Computer Applications (MS-Word and MS-Excel)- Practical –I	3	-	3	30	45	75

	Tamil @ / Advanced Tamil # (or) Non-major elective -II: General Awareness #	2	2		50		50
	<b>Total</b>	<b>27</b>	<b>27</b>	<b>3</b>	<b>330</b>	<b>395</b>	<b>725</b>
<b>FIFTH SEMESTER</b>							
	Core XIII –Corporate Accounting II	4	6		50	50	100
	<b>Core XIV – Banking Law and Practices</b>	4	5		50	50	100
	Core XV – Cost Accounting	4	5		50	50	100
	Core XVI – Income Tax Law and Practice	4	6		50	50	100
	Elective –I:	4	5		50	50	100
	Skill based Subject-3: Business Application Software II	3	3		30	45	75
	<b>Total</b>	<b>23</b>	<b>30</b>		<b>280</b>	<b>295</b>	<b>575</b>
<b>SIXTH SEMESTER</b>							
	Core XVII – Management Accounting	4	6		50	50	100

	Core XVIII - Principles of Auditing	4	5		50		100
	<b>Core XIX - Indirect Taxes</b>	4	6		50	50	100
	Elective –II:	4	5		50		100
	Elective–III:	4	5		50		100
	Skill based Subject-4: Computer Applications: MS-PowerPoint, MS Access and Tally 9.2 – Practical II	3	-	3	30	45	75
	Extension Activities @	2	-	-	50	-	50
	<b>TOTAL</b>	<b>25</b>	<b>27</b>	<b>3</b>	<b>330</b>	<b>295</b>	<b>625</b>
	<b>GRAND TOTAL</b>	<b>140</b>	<b>180</b>				<b>3550</b>

<b>List of Elective Papers</b> (Colleges can choose any one of the paper as electives)		
<b>Elective – I</b>	A	<b>Business Finance</b>
	B	Brand Management
	C	Fundamentals of Insurance
<b>Elective – II</b>	A	Entrepreneurial Development
	B	Supply Chain Management
	C	Principles of Web Designing
<b>Elective - III</b>	A	Financial Markets
	B	Insurance Legislative Framework
	C	Project Work

Course code		L	T	P	C
Core -1	Principles of Accountancy	4			4
Pre-requisite	Basic knowledge in Accountancy	Syllabus Version	2022 ONWARDS		
Course Objectives:					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To enable the students to learn basic Principles of Accountancy.</li> <li>• To make the students skillfully to prepare and present the final accounts of sole trader.</li> <li>• To learn about various types of errors and calculation of depreciation in accounts. • To understand about bank reconciliation statement and accounting for professionals • To provide knowledge about consignment and joint ventures</li> </ul>					
Expected Course Outcomes:					
On the successful completion of the course, student will be able to:					
1	Recalling Accounting Concepts and Conventions and use Accounting rules to record business transactions in the form of Journal, Ledger, subsidiary books and preparation of Trial Balance.				K1
2	Understanding the steps involved in locating errors and prepare them to				K2

	understand the preparation of final accounts for sole traders.			
3	Outline the concepts of Bills of exchange, Average due date and Account Current			K2
4	Examine the concepts of consignment and joint venture.			K4
5	Analyze the bank reconciliation statement, Receipts and payments, Income and expenditure and Balance sheet and accounting for professionals to enhance the knowledge.			K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create				
Unit:1				15--hours
Fundamentals of Book Keeping – Accounting Concepts and Conventions – Journal – Ledger – Subsidiary books – Trial balance.				
Unit:2				10--hours
Final accounts of a sole trader with adjustments – Errors and rectification				
Unit:3				15--hours
Bill of exchange- Accommodation bills – Average due date – Account current				
Unit:4				20--hours
Accounting for consignments and Joint ventures				

Unit:5				13--hours
Bank Reconciliation statement – Receipts and Payments and income and expenditure account and Balance sheet – Accounts of professionals.				

Unit:6	Contemporary Issues			2 hours
Expert lectures, online seminars – webinars				

		Total Lecture hours	75--hours
Text Book(s)			
1	N.Vinayakam, P.L.Mani, K.L.Nagarajan – Principles of Accountancy		
2	T.S.Grewal – Introduction to Accountancy- S.Chand & Company Ltd.,		
3	R.L.Gupta, V.K.Gupta, M.C.Shukla – Financial Accounting – Sultanchand & sons		
Reference Books			
1	K.L.Narang, S.N.Maheswari - Advanced Accountancy-Kalyani publishers		
2	A.Murthy -Financial Accounting – Margham Publishers		
3	A.Mukherjee, M.Hanif – Modern Accountancy. Vol.1- Tata McGraw Hill Companie		

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	S	M
CO3	S	M	M	S	M
CO4	S	S	S	S	M
CO5	S	S	M	M	L

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 2	Business Organization and Office Management	4			4
Pre-requisite	Basic knowledge in Management	Syllabus Version		2022 ONWARDS	
Course Objectives:					



<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To understand different forms of organization</li> <li>• To understand various factors affecting business organization and functioning of stock exchange</li> <li>• To provide insight about office functioning, data processing system and EDP</li> </ul>		
<p>Expected Course Outcomes:</p>		
<p>On the successful completion of the course, student will be able to:</p>		
1	Understanding the concepts of business and its forms of organizations involved in sole trader, partnership firms, companies and co-operative societies and public enterprise.	K2
2	Analyzing the business factors which are involved in sources of finance.	K4
3	Explaining the functioning of stock exchanges SEBI, DEMAT of shares.	K2
4	Remembering office functions, layout and accommodation.	K1
5	Outlining office equipments and EDP.	K2
<p>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</p>		
<p>Unit:1</p>		
		15--hours
<p>Nature and scope of Business, Forms of Business Organisation – Sole Trader, Partnership firms, Companies and Co-operative Societies – Public Enterprise.</p>		
<p>Unit:2</p>		
		15--hours
<p>Location of Business – Factors influencing location, localization of industries- Size of forms, Sources of Finance – Shares, Debentures, Public Deposits, Bank Credit and Trade Credit – Relative Merits and Demerits.</p>		
<p>Unit:3</p>		
		15--hours
<p>Stock Exchange - Functions – Procedure of Trading – Functions of SEBI – DEMAT of shares Trade Association-Chamber of Commerce.</p>		
<p>Unit:4</p>		
		15--hours
<p>Office – Its functions and significance – Office layout and office accommodation – Filing and Indexing</p>		

Unit:5		13--hours
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Office machines and equipments – Data Processing Systems – EDP –Uses and Limitations – <b>Industry 4.0-Features of Industry 4.0- Advantages- Disadvantages-Industry 4.0 in India.- Modern Business Techniques and its Importance.</b>		
Unit:6	Contemporary Issues	2 hours
Expert lectures, online seminars – webinars		
Total Lecture hours		75--hours

Text Book(s)	
1	Y.K.Bhushan – Business Organisation and Management – Sultanchand & sons
2	Shukla - Business Organisation and Management – S.Chand & Company Ltd.,
3	Saksena – Business Administration and Management – Sahitya Bhavan
Reference Books	
1	Singh.B.P & Chopra - Business Organisation and Management – Dhanpat Rai & sons
2	R.K.Chopra – Office Management – Himalaya Publishing House
3	J.C.Deneyer - Office Management
•	<b>Jagdish Prakash – Business Organisation and Management – Dhanpat Rai &amp; sons</b>
•	<b>Om Prakash - Business Organisation</b>

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	M	M
CO2	S	S	S	M	S
CO3	S	S	S	M	S

CO4	S	S	S	M	M
CO5	S	S	M	M	L

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
Allied - 1	Agricultural Economy of India		4			4
Pre-requisite	Basic knowledge in Agricultural Economy		Syllabus Version	2022 Onwards		
Course Objectives:						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>• To know the agricultural economy of India</li> <li>• To understand the condition of agricultural labours</li> <li>• To acquire knowledge on land reforms</li> </ul>						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Understand the Agricultural Economy of the India and measure the development of agriculture in India					K2
2	Identify the problems and prospects of Indian agriculture and importance of green revolution.					K2
3	Study the agricultural marketing, pricing and their effect marketing system					K2
4	Outline the land tenure and land ceiling system in India					K1
5	Understand the role of agricultural banks for rural economic development					K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
Unit:1						
					17--hours	
Features of the Indian Rural Economy – Place of Agriculture – Causes for Low Productivity –Rural poverty. Agriculture : Special Features and – Place of Agriculture in Indian Economy – Causesof Backwardness–Measures for the Development of Agriculture– Progress of Agriculture during the plan period.						
Unit:2						
					17--hours	

Agricultural Labour and Mechanisation of Agriculture: Agricultural Labour – Meaning – Wages and Income – measures to improve the conditions of labour – Green Revolutions – Effects – Mechanisation– Problems and Prospects.		
Unit:3		17--hours
Agricultural Marketing and Pricing: Causes and Consequences of Defective Agricultural Marketing System – Measures to improve marketing system – Agricultural Prices – Importance of PriceStability–CausesandconsequencesofPricefluctuations–Agricultural Price Commission– Minimum Prices for Agricultural goods–Procurement policy.		
Unit:4		17--hours

Land Tenure system in India – Need for land Reform- abolition of intermediaries – Tenancy Legislation–Land ceiling–Land Reforms and land Tenure: Meaning of Land Tenure–Types – Abolition of intermediaries – Effects Measures to ensure security of Tenure – Importance of Land Reforms – Various Measures.		
Unit:5		17--hours
Agricultural Finance : Causes and Consequences of rural indebtedness – Measures to remove rural indebtedness – Agricultural Finance – Need – Types – Role of Co-operative banks and Commercial Banks –NABARD.		

Unit:6	Contemporary Issues	2 hours
Expert lectures, online seminars - webinars		
	Total Lecture hours	75--hours
Text Book(s)		
1	IndianAgriculture:Problems,ProgressandProscpects - SankaranS	
2	Indian Economy - Ruddar DuttandSundaram	
Reference Books		

	The Indian Economy - Dhingra
	Indian Economic Problems - Alak Ghosh

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	S	S	M	S	S
CO3	M	S	S	S	S
CO4	S	S	S	M	M
CO5	M	M	S	S	M

*\*S-Strong; M-Medium; L-Low*

Course code		L	T	P	C
Core- 3	Financial Accounting	4			4
Pre-requisite	Basic Knowledge in Accounting	Syllabus Version	2022 Onwards		
Course Objectives:					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To explore various methods of calculating and recording depreciation</li> <li>• To provide understanding about royalties and investment accounts</li> <li>• To offer an idea about single entry system of accounts</li> <li>• To promote knowledge about department and branch accounting</li> <li>• To facilitate knowledge about hire purchase and installment system of accounting</li> </ul>					
Expected Course Outcomes:					
On the successful completion of the course, student will be able to:					
1	Describing the concepts based on depreciation and its methods in books of accounts.				K1
2	Outline about the nature of Investment and Royal excluding Sublease.				K2

3	Identifying the essential characteristics of single entry system.	K3
4	Applying the basic concepts of departmental and branch accounting.	K4
5	Familiarize the procedure relating to hire purchase and installment in books of accounts	K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create		
Unit:1		15--hours
Accounting for Depreciation –need for and significance of depreciation, methods of providing depreciation- Reserves and Provision.		
Unit:2		15--hours
Investment accounts – Royalty excluding Sublease		
Unit:3		15--hours
Single Entry system-meaning and features-Statement of affairs method and Conversion method		
Unit:4		15--hours
Departmental accounts – transfers at cost or selling price –Branch excluding foreign branches		
Unit:5		13--hours
Hire purchase and instalment systems including Hire Purchasing Trading account Goods on sale orReturn		

Unit:6	Contemporary Issues	2 hours
Expert lectures, online seminars - webinars		
	Total Lecture	75--hours

	hours	
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Text Book(s)	
1	Advanced Accountancy - R.L.Gupta & M.Radhasamy
2	Advanced Accountancy - S.P.Jain & K.L.Narang
Reference Books	
1	Advanced Accountancy - M.C.Shukla & T.S.Grewal
2	Finanacial Accounting - T.S.Reddy & A.Murthy

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	M	S	S	M
CO3	S	M	M	S	M
CO4	S	S	S	S	M
CO5	S	M	M	M	L

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 4	Principles of Marketing	4			4 4
Pre-requisite	Basic knowledge in Marketing		Syllabus Version	2022 Onwards	
Course Objectives:					

The main objectives of this course are to:

- To conceptualize an idea about marketing and related terms
- To provide insight about various forms and types of marketing
- To analyze various components of marketing channels
- To understand various concepts relating to consumer behavior
- To introduce the components of marketing mix
- To understand the importance of retailing in today's context
- To understand emerging marketing trends and regulatory mechanisms

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Defining the various concepts and terms related to marketing	K1
2	Explaining about various marketing functions	K2
3	Understanding terms of consumer behaviour and examined about different concepts related to consumers.	K2
4	Identifying the marketing mix and its elements	K1
5	Understanding different provisions related to trends in emerging markets.	K2

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

Unit:1		15--hours
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Marketing –Definition of market and marketing-Importance of marketing –Modern Marketing concept-Global Marketing –E-marketing –Tele marketing- Marketing Ethics -Career Opportunities in Marketing

Unit:2		15--hours
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Marketing functions-Buying –Selling –Transportation –Storage – Financing –Risk Bearing – Standardisation – Market Information

Unit:3		15--hours
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Consumer Behaviour –meaning –Need for studying consumer behaviour-Factors influencing consumer behaviour-Market segmentation – Customer Relations Marketing **Digital Marketing-Meaning and Definition-Difference between Traditional and Digital Marketing- Types of Digital Marketing- Planning and Creating a Website- Content Development.**



Unit:4		15--hours
Marketing Mix – Product mix –Meaning of Product –Product life cycle –Branding labelling- Price Mix-Importance-Pricing objectives - Pricing strategies –Personal selling and Sales Promotion - Place mix-Importance of channels of distribution –Functions of middlemen– Importance of retailing in today’s context		

Unit:5		13--hours
Marketing and Government –Bureau of Indian Standards –Agmark –Consumerism – Consumer Protecting – Rights of consumers- Green Marketing –Forward Trading in Commodities		
Unit:6	Contemporary Issues	2 hours
Expert lectures, online seminars - webinars		
	Total Lecture hours	75--hours
Text Book(s)		
1	Marketing Management - Rajan Sexena	
2	Principles of Marketing - Philip Kotler & Gary Armstrong	
3	Marketing Management - V.S. Ramasamy and Namakumari	
Reference Books		
1	Marketing -William G.Zikmund & Michael D’Amico	
	Marketing - R.S.N.Pillai & Bagavathi	

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5

CO1	S	S	M	S	S
CO2	S	S	M	S	M
CO3	S	S	S	M	M
CO4	S	S	M	M	M
CO5	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Allied 2	Economic Analysis	4			4
Pre-requisite	Basic knowledge in Economics	Syllabus Version		2022 onwards	
Course Objectives:					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To recall the fundamentals of micro economics</li> <li>• To get insight on law of demand, supply and theories of production</li> <li>• To analyse the pricing in different market structure</li> <li>• To know the theories on wages, rent, interest and profit.</li> </ul>					
Expected Course Outcomes:					
On the successful completion of the course, student will be able to:					
1	Understand The Fundamentals of Micro Economic And Theory Consumer Behaviour				K2
2	Learn the concepts of demand and elasticities of demand				K2
3	Understand theories of production, cost and revenue concepts				K2
4	Analyse the price and output determination under various market structures				K4
5	Acquire knowledge on theories of productivity and wages				K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create					
Unit:1				18--hours	
SCOPE AND METHODOLOGY:Definition of Economics – Nature and Scope of Economics– Utility analysis–Lawofdiminishingutility –LawofEqui Marginal utility – Indifference curve – Approaches of Economic Analysis –Methodology of Economics.					

Unit:2		17--hours
ELEMENTS OF DEMAND :Demand Analysis–Demand Schedule – Law of Demand – Demand Curve – Elasticity of Demand – Price, Income and Cross–Consumer’s Surplus.		
Unit:3		18--hours
THEORY OF PRODUCTION: Factors of Production–Law of Diminishing Returns – Law of Variable Proportions – Return to Scale – Law of Supply – Cost and Revenue– Concepts and Curves.		
Unit:4		17--hours
PRODUCT PRICING : Market Definition – Types – Equilibrium Under Perfect Competition of Firm and Industry – Pricing – Pricing Under Perfect Competition, Monopoly – Price		

Discrimination – Pricing Under Monopolistic Competition –Pricing under Oligopoly and Duopoly.		
Unit:5		18--hours
FACTOR PRICING – Marginal Productivity Theory – Theories of wages, rent, interest and profit.		
Unit:6	Contemporary Issues	2 hours
Expert lectures, online seminars - webinars		
	Total Lecture hours	90--hours

Text Book(s)			
1	Economic Analysis	-	S.Sankaran

2	Principals of Economics		-	Seth M.L.
Reference Books				
	Micro Economic Theory		-	M.L.Jhingan
	Economic Analysis	- S.Sankaran		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]				
1				
2				
4				

Course code		L	T	P	C
Core- 5	Higher Financial Accounting	4			4
Pre-requisite	Basic knowledge in Accounting	Syllabus Version	2022 Onwards and 2021 batch		
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To provide insight about maintaining partnership accounts</li> <li>• To promote understanding about maintaining books of accounts at the time of retirement</li> <li>• To offer understanding about dissolution and insolvency of partnership</li> <li>• To facilitate knowledge about individual insolvency and claims</li> <li>• To promote knowledge about human resource and inflation accounting</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understanding the basic concepts of partner and procedures related to calculation of ratios.				K2
2	Acquiring the principle at the time of retirement in the books of partner				K1
3	Analyzing dissolution and insolvency of firms and individuals.				K4

4	Evaluate the insolvency or loss of individuals or firms.	K5
5	Examine the concepts based on voyage, Human resource and inflation accounting.	K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		
<b>Unit:1</b>		<b>20--hours</b>
Introduction- Admission of a Partner - Treatment of Goodwill - Revaluation of Assets and Liabilities - Calculation of Ratios for Distribution of Profits - Capital Adjustments.		
<b>Unit:2</b>		<b>20--hours</b>
Retirement of Partner - Calculation of Gaining Ratio- Revaluation of Assets and Liabilities Treatment of Goodwill – Adjustment of Goodwill through Capital A/c only - Settlement of Accounts - Retiring Partner’s Loan Account with equal Installments only.		
<b>Unit:3</b>		<b>20--hours</b>
Dissolution - Insolvency of Partners- Garner Vs Murray- Insolvency of all Partners - Deficiency A/c - .Piecemeal Distribution - Proportionate Capital Method only.		
<b>Unit:4</b>		<b>20--hours</b>
Insolvency of Individuals and Firms – Fire Claims : Normal Loss – Abnormal Loss		

<b>Unit:5</b>		<b>23--hours</b>
Voyage Accounts - Human Resources Accounting and Inflation Accounting (Theory only).		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		

	<b>Total Lecture hours</b>	<b>105--hours</b>
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	<b>Total Lecture hours</b>	<b>105-- hours</b>
<b>Text Book(s)</b>		
1	S.P. Jain & K.L. Narang, “Advanced Accounting”, Kalyani Publications, NewDelhi.	
2	Reddy & Murthy, “Financial Accounting”, Margham Publicatuions, Chennai, 2004.	
3	Dr. M. A. Arulanandam, Dr. K.S. Raman, “Advanced Accountancy Part-I”, Himalaya Publication, New Delhi.	
<b>Reference Books</b>		
1	Gupta R.L. & Radhaswamy M.,”Corporate Accounts “, Theory Method and Application - 13th Revised Edition 2006, Sultan Chand & Co., New Delhi .	
2	Shukla M.C., Grewal T.S. & Gupta S.L., “Advanced Accountancy”, S. Chand & Co., NewDelhi.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1		
2		
4		

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	S	M	S	L
<b>CO3</b>	S	S	S	S	M
<b>CO4</b>	S	M	M	S	M

CO5	S	S	M	S	M
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\*S-Strong; M-Medium; L-Low

Coursecode	TITLEOFTHECOURSE	L	T	P	C
Core-6	Commercial law	4			4
Pre-requisite	Basic knowledge in commerce activities	Syllabus Version	2022 onwards and 2021 Batch		

### Course Objectives:

The main objectives of this course are to:

- To provide knowledge about basics of business contract
- To create knowledge about the regulations of agency system
- To understand the rules of indemnity and guarantee
- To offer knowledge about the sale and transfer of goods and the applicable laws and regulations

### Expected Course Outcomes:

1	Assessing the various elements related business law and contract	K5
2	Interpreting different type of contract and its features	K2
3	Explain about the agency system related to creation and termination of agency	K5
4	Compare between rights and duties of indemnity, guarantee	K5
5	Examine the distinct between sale and agreement to sell and its features	K4

**K1-Remember; K2-Understand; K3-Apply;K4-Analyze;K5 -Evaluate; K6 -Create**

Unit:1	TitleoftheUnit(CapitalizeeachWord)	15--hours
Law–Meaning and objects–Mercantile law, meaning –Sources of contracts–Classification of contracts – Essentials of a valid contract – Offer, acceptance, legality of object and consideration –Void agreement.		
Unit:2	TitleoftheUnit(CapitalizeeachWord)	20--hours

Capacity to contract –Free consent –Quasi contracts –Contingent contracts–Performance of contract– Discharge of contract– Remedies for breach of contract – <b>E-Contract Features of e-contracts-Advatages and Disadvantages.</b>		
<b>Unit:3</b>	<b>TitleoftheUnit(CapitalizeeachWord)</b>	<b>20--hours</b>
ContractofAgency–CreationofAgency–PersonalliabilityofanAgent–Agencybyratification– Conditions and effects–Termination of Agency., <b>Ethics in Business- relationship between ethics and law.</b>		
<b>Unit:4</b>	<b>TitleoftheUnit(CapitalizeeachWord)</b>	<b>15--hours</b>
Contract of indemnity and guarantee – Rights and Liabilities of surety – Discharge of surety –Bailment– Rights and Duties of bailor and bailee – Termination of Bailment.		

<b>Unit:5</b>	<b>TitleoftheUnit(CapitalizeeachWord)</b>	<b>18--hours</b>
Law of sale of goods – Distinction between sale and agreement to sell – Conditions and warranties to sell – Conditions and Warranties – Transfer of Ownership – Transfer of title by Non-owners –Performance of contract of sale–Rights and Duties of buyer– Rights of unpaid seller.		

<b>Unit:6</b>	<b>ContemporaryIssues</b>	<b>2hours</b>
Expert lectures, online seminars –webinars		
	<b>TotalLecturehours</b>	<b>90--hours</b>
<b>TextBook(s)</b>		
1	N.D.Kapoor BusinessLaws – Sulthan Chand & Sons	
2	R.S.N.PillaiandBagavathy Business Laws- S.Chand&Co	
<b>ReferenceBooks</b>		



1	M.C.Kuchhal----MercantileLaw---VikasPublications
2	K.R.Bulchandani----BusinessLaw Himalaya PublishingHouse

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	S	S
CO3	S	S	S	S	S
CO4	S	S	S	S	M
CO5	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 7	Principles of Management	4			4
Pre-requisite	Basic knowledge in Management	Syllabus Version	2021 batch and 2022 Onwards		
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To provide understanding about basic terminologies of management</li> <li>• To explore the fundamental principles, process and steps in management including planning</li> <li>• To develop knowledge about organizing function in business</li> <li>• To explore the concept of motivation in organizational context</li> <li>• To generate ideas about effective communication in the business</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Explaining the concepts based on management and its features				K2
2	Summarizing the principles and importance of planning				K2

3	Interpreting various concepts based on organization and its element	K2
4	Examining the determinants of behaviour and motivation theories	K4
5	Understanding the need and techniques of communication in management	K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		
<b>Unit:1</b>		<b>20--hours</b>
Definition of Management – Management and Administration – Nature and Scope of Management - Functions of Management – <b>Principles of management</b> - Contribution of F.W. Taylor – Henry Fayol – Mary Parker Follet – Mc Gregor and Peter F. Drucker.		
<b>Unit:2</b>		<b>18--hours</b>
Planning – Meaning – Nature and Importance of Planning – Planning promises – Methods and Types of plans – Decision Making. <b>Steps in Decision Making – Role of MIS for Decision Making.</b>		
<b>Unit:3</b>		<b>17--hours</b>
Organization – Meaning, Nature and Importance – Process of Organization – Principles of Sound Organization – Organization Structure – Span of Control – Organization Chart - Departmentation – Delegation and Decentralization – Authority relationship Line, Functional and Staff.		
<b>Unit:4</b>		<b>15--hours</b>

Motivation – Need – Determinants of behaviour – Maslow’s Theory of Motivation – Motivation Theories in Management – X, Y and Z theories – Leadership styles – MBO – Management by Exception. <b>Nature and Functions of personnel management</b>		
<b>Unit:5</b>		<b>18--hours</b>
Communication in Management – Co-Ordination – Need and Techniques – Control – Nature and process of Control – Techniques of Control - <b>Social Responsibility of Management</b>		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
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Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90--hours</b>
<b>Text Book(s)</b>		
1	The Principles of Management - Rustom S. Davan	
2	Business Organization and Management - Y. K. Bhushan	
3	Business Management - Chatterjee	
<b>Reference Books</b>		
1	Principles of Management - Koontz and O'Donald	
2	Business Management - Dinkar - Pagare	
3	RK Sharma & Shashi K Gupta- Principles of Management -Kalyani Publishers	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	S	S	M	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied 3</b>	<b>Mathematics for Business</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Mathematics</b>	<b>Syllabus</b>	2021 batch and 2022 Onwards		
		<b>Version</b>			

**Course Objectives:**

The main objectives of this course are to:

- Understand and apply basics of applications of mathematics in business • Make the students to be ready for solving business problems using mathematical operations.
- Provide insight knowledge about variables, constants and functions.
- Gain the knowledge on integral calculus and determining definite and indefinite functions.
- Analyze the linear programming problem by using graphical solution and simple method.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

1	Understand the basic concepts of arithmetic and geometric series and different effective rates of interest for sinking fund, annuity and present value.	K2
2	Recall the basic concepts of addition and multiplication analysis and input and output analysis.	K1
3	Explain of variables, constants and functions and evaluate the first and second order derivatives.	K2
4	Interpret integral calculus and determining definite and indefinite functions.	K2
5	Analyze the linear programming problem by using graphical solution and simple method.	K4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

**Unit:1**

**20--hours**

Set Theory–Arithmetic and Geometric Series–Simple and Compound Interest– Effective rate of Interest–Sinking Fund–Annuity–Present Value– Discounting of Bills– True Discount–Banker’s Gain.

**Unit:2**

**18--hours**

Matrix: Basic Concepts – Addition and Multiplication of Matrices – Inverse of a Matrix – Rank of Matrix–Solution of Simultaneous Linear Equations–Input Output Analysis.

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<b>Unit:3</b>		<b>17--hours</b>
Variables, Constants and Functions – Limits of Algebraic Functions – Simple Differentiation of Algebraic Functions – Meaning of Derivations – Evaluation of First and Second Order Derivatives – Maxima and Minima – Application to Business Problems.		
<b>Unit:4</b>		<b>15--hours</b>
Elementary Integral Calculus – Determining Indefinite and Definite Integrals of simple Functions – Integration by Parts.		
<b>Unit:5</b>		<b>18--hours</b>
Linear Programming Problem – Formation – Solution by Graphical Method Solution by Simple Method.		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90--hours</b>
<b>Text Book(s)</b>		
1	Navanitham, P.A., "Business Mathematics & Statistics" Jai Publishers, Trichy-21	
2	Sundaresan and Jayaseelan, "Introduction to Business Mathematics", Sultan chand Co & Ltd, New Delhi	
3	Sanchetti, D.C and Kapoor, V.K., "Business Mathematics", Sultan chand Co & Ltd, New Delhi	
<b>Reference Books</b>		
1	G.K.Ranganath, C.S.Sampamgiram & Y.Rajan-A Text book Business Mathematics - Himalaya Publishing House.	

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=qO1SYFZVmhY">https://www.youtube.com/watch?v=qO1SYFZVmhY</a>
2	<a href="https://www.youtube.com/watch?v=LadYhkiVC7Q">https://www.youtube.com/watch?v=LadYhkiVC7Q</a> HYPERLINK <a href="https://www.youtube.com/watch?v=LadYhkiVC7Q&amp;list=PLRYPMG3pkUJuucxOLmnRC-Lj3PmzVmKCD">"https://www.youtube.com/watch?v=LadYhkiVC7Q&amp;list=PLRYPMG3pkUJuucxOLmnRC-Lj3PmzVmKCD"&amp;</a> HYPERLINK <a href="https://www.youtube.com/watch?v=LadYhkiVC7Q&amp;list=PLRYPMG3pkUJuucxOLmnRC-Lj3PmzVmKCD">"https://www.youtube.com/watch?v=LadYhkiVC7Q&amp;list=PLRYPMG3pkUJuucxOLmnRC-Lj3PmzVmKCD"</a> list=PLRYPMG3pkUJuucxOLmnRC-Lj3PmzVmKCD
4	<a href="https://www.youtube.com/watch?v=qO1SYFZVmhY">https://www.youtube.com/watch?v=qO1SYFZVmhY</a> HYPERLINK <a href="https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L">"https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L"</a> & HYPERLINK <a href="https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L">"https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L"</a> list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L

<a href="https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L">st=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L"&amp;</a> HYPERLINK <a href="https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L">"https://www.youtube.com/watch?v=qO1SYFZVmhY&amp;list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L"</a> list=PLX2gX-ftPVXUYjs2g3YiaY0sEfwW-jg5L	
Course Designed By:	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	S	M	S	S
<b>CO3</b>	M	S	S	S	S
<b>CO4</b>	S	S	S	M	M
<b>CO5</b>	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied 3</b>	<b>Business Application Software I</b>	<b>4</b>			<b>4</b>

<b>Pre-requisite</b>	<b>Basic knowledge in MS Word and MS Excel</b>	<b>Syllabus Version</b>	2021-2022 batch and 2022 onwards
<b>Course Objectives:</b>			
The main objectives of this course are to: Understand the basic framework and how to work in Ms-Word and Ms-Excel.			
<b>Expected Course Outcomes:</b>			
On the successful completion of the course, student will be able to:			
1	To know the basics on MS Word		K2
2	To study formatting features in MS Word		K2
3	To understand the concept of mail merge		K2
4	To gain knowledge on excel operations		K2
5	To acquire knowledge on Managing and Analyzing Complex Worksheet		K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>			
<b>Unit:1</b>			<b>9 --hours</b>
Microsoft Word: Basics - Creating Documents – Mouse, Keyboard Operations, Keys – Formatting Features–Menus, Commands, Toolbars and their Icons.			
<b>Unit:2</b>			<b>8 --hours</b>
Creating Templates, Creating Tables, Changing Font and Text Size, Borders and Shadings, Text box, Formatting, Insert picture.			
<b>Unit:3</b>			<b>8 --hours</b>
Mail Merge-Creating the Main Document–Creating data source, Adding fields, removing fields–Merging Documents-Macros–Inserting Headers and Footer–Recording macros.			
<b>Unit:4</b>			<b>9--hours</b>

Microsoft Excel: Introduction – Navigation, Selecting Cells, Entering and Editing Text, Entering Numbers and Formulas – Alignments – Menus, Commands, Toolbars and their Icons.

<b>Unit:5</b>		<b>9 --hours</b>
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Spreadsheet Overview–Creating Worksheet Managing and Analyzing Complex Worksheet–Creating Charts– **Data handling.**

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<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>45--hours</b>
<b>Text Book(s)</b>		
1	<b>SanjaySaxena</b> ,“MS-Office2000”,VikasPublishingHousePrivateLtd.	
<b>Reference Books</b>		
1	<b>TimothyJ.O’LearyandLindaiO’Leary</b> ,“MS-Office“,IRWIN/McGrawHill.	
2	SanjaySaxena,“MS-Office2000”,VikasPublishingHousePrivateLtd	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	M	M	M
<b>CO2</b>	M	S	S	M	M
<b>CO3</b>	S	M	M	M	M



<b>CO4</b>	M	S	M	M	M
<b>CO5</b>	S	M	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core- 8</b>	<b>Corporate Accounting I</b>		<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in company accounts</b>		<b>Syllabus</b>	2021-2022 Batch and 2022 onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>• To provide basic understanding about the accounts relating to shares and debentures</li> <li>• To analyze the final accounts of companies</li> <li>• To explore various methods for the valuation of goodwill</li> <li>• To assist preparation of books of accounts during liquidation of companies</li> </ul>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Explaining about the basic provisions towards issue of shares in market					K2
2	Understanding the concepts of debenture and its accounting					K2
3	Analyze the companies final accounts and Managerial Remuneration					K4
4	Estimating methods of goodwill and shares					K5
5	Examine various procedures related to liquidation of companies					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>						
			<b>15--hours</b>			
Issue of shares : Par , Premium and Discount - Forfeiture - Reissue – Surrender of Shares – Right Issue - Underwriting						
<b>Unit:2</b>						
			<b>15--hours</b>			

Redemption of Preference Shares. Debentures – Issue – Redemption: Sinking Fund Method.		
<b>Unit:3</b>		<b>15--hours</b>
Final Accounts of Companies - Calculation of Managerial Remuneration.		
<b>Unit:4</b>		<b>15--hours</b>
Valuation of Goodwill and Shares – Need – Methods of valuation of Goodwill and Shares.		
<b>Unit:5</b>		<b>13--hours</b>
Liquidation of Companies - Statement of Affairs -Deficiency a/c.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		

	<b>Total Lecture hours</b>	<b>75--hours</b>

<b>Text Book(s)</b>	
1	<b>S.P. Jain &amp; K.L. Narang</b> , “Advanced Accounting”, Kalyani Publications, New Delhi.
2	<b>Gupta R.L. &amp; Radhaswamy M.</b> ,”Corporate Accounts “, Theory Method and Application- 13 <sup>th</sup> Revised Edition 2006, Sultan Chand & Co., New Delhi.
3	<b>Dr. M.A. Arulanandam, Dr. K.S. Raman</b> , “Advanced Accountancy, Part-I”, HimalayaPublications, New Delhi.2003.
<b>Reference Books</b>	
1	<b>Gupta R.L. &amp; Radhaswamy M.</b> ,”Corporate Accounts “, Theory Method and Application- 13 <sup>th</sup> Revised Edition 2006, Sultan Chand & Co., New Delhi.

2	<b>Shukla M.C., Grewal T.S. &amp; Gupta S.L.</b> , “Advanced Accountancy”, S. Chand & Co., NewDelhi
3	<b>Reddy &amp; Murthy</b> , “Financial Accounting”, Margham Publicatuions, Chennai, 2004

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	M	S
<b>CO2</b>	S	S	S	M	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	M	S	S	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>TITLE OF THE COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core- 9	<b>Computer Applications in Business</b>	4			4
<b>Pre-requisite</b>	<b>Basic knowledge in computer</b>	<b>Syllabus</b>	2021-22 Batch and 2022 onwards		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ul style="list-style-type: none"> <li>• To introduce the concept of computer and its various parts.</li> <li>• To explain the concept of data base management system and Management information system.</li> </ul>					
3. To provide insight about networking and basics of internet					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Recall the various concepts relating to computer and its various parts				K1
2	Understand the meaning of software’s, operating system etc				K2
3	Understanding the meaning and utility of database management system				K2

4	Evaluate the various aspects of management information system	K5
5	Generating more ideas regarding the use of internet for business purpose	K6
1	Recall various terms of computer and its part	K1
2	Understand the meaning of software, operating system, programming language and its features	K2
3	Comparing Data Vs Information and its management system	K2
4	Understanding about various concepts of management information system	K2
5	Explain about networking and elements based on internet	K2

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Computer : Introduction – Meaning – Characteristics – Generations – Types of Digital Computer – Components of Computer – Input, Storage and Output Devices – Uses of Computers in Modern Business.		
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>10-- hours</b>
Database Processing: Data Vs. Information – Database Management Systems: Meaning - Components – Uses – Limitations – Types.		
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>10-- hours</b>
Data handling-objectives-Importance of data handling in business-Applications of data handling in business.		

<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Management Information System: Meaning – Characteristics - Functional Management Information Systems: Financial – Accounting – Marketing- Production – Human resource – Business Process Outsourcing.		

<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>8-- hours</b>
Networking – Meaning – Types - Internet : Meaning – Internet Basis - World Wide Web – Internet Access – Internet Addressing – Search Engines – Electronic Mail.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>60-- hours</b>
<b>Text Book(s)</b>		
1	Fundamentals of Information Technology - Alexis Leon & Mathews Leon	
2	Information Technology for Management - Henry C. Lucas	
<b>Reference Books</b>		
1	Computers and Commonsense - Roger Hunt and John Shellery	
2	Management Information System - Dr. S.P. Rajagopalan	
3	<a href="#">Data handling-Jain Amit, Tripathi, R.C. Shree</a>	
3.		

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	L	L	L
<b>CO2</b>	S	S	L	M	M
<b>CO3</b>	S	M	M	L	L

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>TITLE OF THE COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core- 10</b>	<b>Company law and secretarial practice</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in law</b>	<b>Syllabus</b>	2021-2022 Batch and 2022 onwards		

<b>Course Objectives:</b>		
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To develop a strong foundation regarding corporate laws and provisions</li> <li>• To provide knowledge about qualification and disqualification of directors and winding up procedures of the companies</li> <li>• To provide insights about Corporate Secretaryship and rules relating to company meetings.</li> </ul>		
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able to:		
1	Define the fundamentals of corporate law	K1
2	Identify the role, responsibilities, appointment and liabilities of corporate directors	K2
3	Analyzing various winding up procedures, regulations and formalities under law	K4
4	Examine the role of corporate secretaryship and specific conditions	K4
5	Outline corporate level meetings with regard to duties of company secretary, drafting correspondence, Notice, Agenda and Minutes	K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create		
<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Formation of Companies – Promotion – Meaning – Promoters – their functions – Duties of Promoters – Incorporation – Meaning – certification of Incorporation – Memorandum of Association – Meaning – Purpose – Alteration of Memorandum – Doctrine of Ultravires – Articles of Association - Meaning – Forms – Contents – Alteration of Article – Relationship between Articles and Memorandum– Prospectus – Deemed Prospectus – Misstatement in prospectus .		
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>10-- hours</b>
Directors – Qualification and Disqualification of Directors – Appointment of Directors – Removal of Directors – Director’s remuneration – Powers of Directors – Duties of Directors – Liabilities of Directors		
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>10-- hours</b>
Winding up – Meaning, Modes of Winding up – Compulsory Winding up by the court – voluntary Winding up – Types of Voluntary Winding up – members voluntary Winding up – Creditors voluntary Winding up – Winding up subject to supervision of the court –		

Consequences of Winding up(General).

<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Company Secretary – Who is a secretary – Types – Positions – Qualities – Qualifications – Appointments and Dismissals – Power – Rights – Duties – Liabilities of a Company Secretary – Role of a Company Secretary – (1) As a statutory officer, (2) As a Co-Coordinator, (3) As an Administrative Officer.		

<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>8-- hours</b>
Kinds of Company meetings – Board of Directors Meeting – Statutory meeting – Annual General meeting – Extra ordinary General meeting - Duties of a Company Secretary to all the company meetings – Drafting of Correspondence relating to the meetings – Notices – Agenda- Writing of Minutes. <b>Companies Act 2013-Changes with regard to incorporation , directors, board meetings &amp; general meetings .</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>60-- hours</b>
<b>Text Book(s)</b>		
1	M.C.Shukla and S.S.Gulshan----Principles of Company Law S.Chand & Co.,	
2	M.C.Shukla and S.S.Gulshan S.Chand & Co.,	
<b>Reference Books</b>		
1	N.D.Kapoor----Company Law Sultan Chand & Sons	
2	M.C.Kuchhal---- Secretarial Practice Vikas Publications	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>

<b>CO1</b>	S	M	S	S	M
<b>CO2</b>	S	S	M	M	S
<b>CO3</b>	S	M	M	S	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 11	<b>Executive Business Communication</b>	3			3
<b>Pre-requisite</b>	<b>Basic knowledge in Business Communication</b>	<b>Syllabus</b>	2021-2022 and 2022 onwards		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ul style="list-style-type: none"> <li>• To provide information on effective business communication and techniques to respond to business queries.</li> <li>• To provide knowledge about banking correspondence and company secretarial correspondence</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Outline the importance of effective business communication				K2
2	Understand the intricacies of responding to business related queries				K2
3	Categorizing effective correspondence with banks, insurance and agencies				K3
4	Examine effective response to company secretarial correspondence				K4
5	Analyze new innovative and effective ideas for business communication				K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>					
<b>Unit:1</b>		<b>8--hours</b>			



Business Communication : Meaning – Importance of Effective Business Communication Modern Communication Methods – Business Letters : Need – Functions - Kinds - Essentials of Effective Business Letters - Layout.		
<b>Unit:2</b>		<b>9--hours</b>
Trade Enquiries - Orders and their Execution - Credit and Status Enquiries – Complaints and Adjustments - Collection Letters – Sales Letters – Circular Letters.		
<b>Unit:3</b>		<b>8--hours</b>
Banking Correspondence - Insurance Correspondence - Agency Correspondence.		
<b>Unit:4</b>		<b>7--hours</b>
Company Secretarial Correspondence (Includes Agenda, Minutes and Report Writing)		
<b>Unit:5</b>		<b>11--hours</b>
Application Letters – Preparation of Resume - Interview: Meaning – Objectives and Techniques of various types of Interviews –Characteristics of a good speech – Business Report Presentations – <b>Recruitment and employment correspondence.</b>		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>45--hours</b>
<b>Text Book(s)</b>		
1	<b>Rajendra Pal Korahill</b> , “Essentials of Business Communication”, Sultan Chand & Sons, New Delhi, 2006.	
2	<b>Ramesh, MS, &amp; C. C Pattanshetti</b> , “Business Communication”, R.Chand&Co, New Delhi, 2003.	

Reference Books	
1	<b>Rodriquez M V</b> , “Effective Business Communication Concept” Vikas Publishing Company,2003.

Mapping Course objectives and course outcomes					
	PO1	PO2	PO3	PO4	PO5
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	S	S	S	M	M
<b>CO3</b>	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE	L	T	P	C
Core- 12	Banking theory	3			3
Pre-requisite	Basic knowledge in banking activities	Syllabus version			2022 onwards 2021-24
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To understand the recent trends and innovations in banking sector</li> <li>• To elaborate the functioning and working of central banking system and commercial banks in India</li> <li>• To provide a glimpse about the working of Indian money market</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Illustrate the classification of commercial banks, functions and credit creation				K2
2	Outline the recent trade in banking				K2
3	Analyze the functions of central banks and its credit controlling measures				K4

4	Examine the concepts of Indian Money Market	K4
5	Explain the role of SBI Commercial banks and Development banks	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>		
<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>8-- hours</b>
Origin of banks-Definition of banking- Classification of banks- Banking System: Unit Banking – Branch Banking Universal Banking & Banking Markets – Functions of Modern commercial Banks - Balance Sheet of commercial Banks – Credit Creation by commercial Banks.		
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>9-- hours</b>
Recent Trades in Indian Banking – Automated teller Machines – Merchant Banking – Mutual Fund – Factoring Services – Customer Services – Credit Cards – E-banking – Privatization of commercial banks – <b>Fintech revolution in banking – Point of Sale – Internet Banking</b>		
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>8-- hours</b>
Central Banks – Functions – Credit Control Measures – Quantitative and Selective Credit control measures – Role of RBI in regulating and controlling banks.		
<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>7-- hours</b>
Indian Money Market – Organized and Unorganized Part – Deficiencies of the Indian Money Market – Comparison with British and American Money Markets.		

<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>11-- hours</b>
State Bank of India – Its special place in the banking scene – Commercial banks and rural financing – Regional Rural Banks - Place of Co-operative banks in the Indian Banking scene – Development banking – IDBI – ICICI.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		

	<b>Total Lecture hours</b>	<b>45-- hours</b>
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<b>Text Book(s)</b>	
1	Sundharam and Varshney, Banking theory Law & Practice, Sultan Chand & Sons., New Delhi.
2	Basu : Theory and Practice of Development Banking
3	Reddy & Appanniah : Banking Theory and Practice
	Digital Banking – Indian Institute of Banking & Finance
<b>Reference Books</b>	
1	Natarajan & Gordon : Banking Theory and Practice
2	Banking Regulation Act, 1949.
3	Reserve Bank of India, Report on currency and Finance 2003-2004.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	
2	
4	
Course Designed By:	

<b>Mapping Programme outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

<b>Course</b>			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
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<b>code</b>					
<b>ALLIED IV</b>	<b>STATISTICS FOR BUSINESS</b>		<b>4</b>	<b>-</b>	<b>- 4</b>
<b>Pre requisite</b>	<b>Basic knowledge on Statistics for Business</b>		<b>Syllabus Version</b>		<b>2021-2 2</b>
<b>Course Objectives:</b>					
<p>The main objectives of the course are able to</p> <ul style="list-style-type: none"> <li>• Provide basic conceptual knowledge on applications of statistics in business.</li> <li>• Make the students to be ready for solving business problems using statistical operations.</li> <li>• Give a detailed instruction of measurement of dispersion.</li> <li>• Gain the knowledge on application of correlation and regression for business operations.</li> <li>• Analyze interpolation and probability theory and perform the problems.</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the basic concepts of arithmetic and geometric mean and different types of data collection.			K 2	
2	Recall measures of dispersion.			K 1	
3	Execute correlation and regression analysis.			K 3	
4	Understand the different types of moving averages.			K 2	
5	Analyze interpolation and probability			K 4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>					
<b>Unit:1</b>	<b>INTRODUCTIO NS</b>			<b>17 hours</b>	
<p>Meaning and Definition of Statistics – Collection of data — Primary and Secondary - Classification and Tabulation – Diagrammatic and Graphical presentation Measures of Central tendency – Mean, Median, Mode, Geometric Mean and Harmonic Mean – simple problems</p>					
<b>Unit:2</b>	<b>MEASURES OF DISPERSION</b>			<b>18 hours</b>	

Measures of Dispersion – Range, Quartile Deviation, Mean Deviation, Standard Deviation and Co-efficient of Variation. Skewness – Meaning – Measures of Skewness - Pearson’s and Bowley’s co-efficient of Skewness.

<b>Unit:3</b>	<b>CORRELATION AND REGRESSION ANALYSIS</b>	<b>17 hours</b>
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Correlation –Meaning and Definition –Scatter diagram, Karl Pearson’s co-efficient of Correlation, Spearman’s Rank Correlation, Co-efficient of Concurrent deviation.  
Regression  
Analysis – Meaning of regression and linear prediction – Regression in two variables – Uses of Regression

<b>Unit:4</b>	<b>TIME SERIES</b>	<b>18 hours</b>
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Time Series – Meaning, Components and Models – Business forecasting – Methods of estimating trend – Graphic, Semi-average, Moving average and Method of Least squares – Seasonal Variation – Method of Simple average. Index Numbers – Meaning, Uses and Methods of construction – Un-weighted and Weighted index numbers – Tests of an Index number – Cost of living index number.

<b>Unit:5</b>	<b>INTERPOLATION</b>	<b>18 hours</b>
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Interpolation: Binomial, Newton’s and Lagrange methods. Probability – Concept and Definition  
– Addition and Multiplication theorems of Probability (statement only) – simple problems based on Addition and Multiplication theorems only.

<b>Unit:6</b>	<b>CONTEMPORARY ISSUES</b>	<b>2 hours</b>
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Expert lectures, online seminars – webinars

	<b>Total Lecture hours</b>	<b>90 hours</b>
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**Text Book(s)**

1	Statistical Methods by S.P. Gupta
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2	Business Mathematics and Statistics by P. Navaneetham
3	Statistics by R.S.N. Pillai and V. Bagavathi
<b>Reference Books</b>	
1	Statistics-Theory, Methods & Application by D.C. Sancheti and V.K. Kapoor
2	Applied General Statistics by Frederick E.Croxton and Dudley J. Cowden
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=BUE-XJEHp7g">https://www.youtube.com/watch?v=BUE-XJEHp7g</a>
2	<a href="https://www.youtube.com/watch?v=0s4mKbkYJPU">https://www.youtube.com/watch?v=0s4mKbkYJPU</a> HYPERLINK " <a href="https://www.youtube.com/watch?v=0s4mKbkYJPU&amp;amp%3Bt=1s">https://www.youtube.com/watch?v=0s4mKbkYJPU&amp;amp%3Bt=1s</a> "& HYPERLINK " <a href="https://www.youtube.com/watch?v=0s4mKbkYJPU&amp;amp%3Bt=1s">https://www.youtube.com/watch?v=0s4mKbkYJPU&amp;amp%3Bt=1s</a> "t=1s

3	<a href="https://www">https://www</a> HYPERLINK " <a href="http://www.youtube.com/watch?v=Dxcc6ycZ73M">http://www.youtube.com/watch?v=Dxcc6ycZ73M</a> ".youtube.com/watch?v=Dxcc6ycZ73M
Course Designed By:	

<b>Mapping with Programme Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	S	M	S	S
<b>CO3</b>	M	S	S	S	S
<b>CO4</b>	S	S	S	M	M
<b>CO5</b>	M	M	S	S	S

S- Strong; M-Medium; L-Low

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>SBE II</b>	<b>Computer Applications: MS Word And MS Excel Practical - I</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>

<b>Pre-requisite</b>	<b>Basics knowledge in MS Word and MS Excel</b>	<b>Syllabus Version</b>	<b>2021-22 batch 2022 onwards</b>
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**Course Objectives:**

The main objectives of this course are to:

- Acquire and apply the computer applications in different aspects of business
- Get an insight knowledge on MS-office
- Know the database maintenance in every type of applications.
- Develop the programs in MS-word and MS-excel.

**Expected Course Outcomes:**

On the successful completion of the course, student will be able to:

1	Remember the basic concepts computer applications using MS-Office applications for the business transactions.	K2
2	Create customers list using mail merge for sending letters to the respondents at a time.	K6
3	Generate the database using MS-Word and excel.	K3
4	Execute and apply various statistical tools available in MS excel for the business enterprise transactions.	K4
5	Apply various statistical tools available in MS-excel for the business enterprise transactions	K4

**K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create**

			<b>MS WORD</b>		<b>20 hours</b>			
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1. Create the front page of a NewsPaper.
2. Type a document and perform the following:
  - i. Change a paragraph into two column cashbook.
  - ii. Change a paragraph using bullets (or) numbering format.
  - iii. Find any word and replace it with another word in document.
  - iv. **Insertion of header and footer**
3. Prepare a class time table using a table menu.
4. Prepare a mail merge for an interview call letter.
5. Create a resume wizard.
6. Design a cheque book of a bank.
7. Create a table with the following field name: EMP-no, Emp-name, designation, department, experience
8. **Create an email account & send mails with attachment of different documents.**
9. **Poster making using text, images shapes & watermark.**



			<b>MSEXCEL</b>		<b>20 Hours</b>				
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- Develop the Students Mark List worksheet and calculate total, average and save it. Specify the Result also (Field names: S.NO, Name of the student, course, mark1, mark2, mark3, total, average and result).
- Design a chart projecting the cash estimate of a concern in the forthcoming years.
- Prepare purchase report using Sum IF and Count IF statements and Insert Charts.
- Prepare sales report using formulae. (Maximum, Minimum, Average, Count and Sum)

<b>Mapping with Programme Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	S	M	S	S
<b>CO3</b>	M	S	S	S	S
<b>CO4</b>	S	S	S	M	M
<b>CO5</b>	M	M	S	S	S

S- Strong; M-Medium; L-Low

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core- 13</b>	<b>Corporate Accounting- II</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Company Accounts</b>	<b>Syllabus</b>	2021-2022 and 2022 onwards		
<b>Course Objectives:</b>					
<ul style="list-style-type: none"> <li>• To understand the concept of mergers and acquisitions</li> <li>• To familiarize with holding company accounts</li> <li>• To prepare the final accounts of banking companies</li> <li>• To prepare the accounts of insurance companies</li> <li>• To assist the preparation of electricity companies accounts</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					

1	Recall various concepts and methods of preparing accounts under mergers and acquisitions	K1
2	Understand various methods of preparing holding company accounts	K2
3	Understand various methods of preparing and assessing final accounts of banking companies	K2
4	Analyze the final accounts of insurance companies	K4
5	Analyze the accounting statements of electricity companies	K4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

<b>Unit:1</b>		<b>20--hours</b>
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Accounting for Mergers and Amalgamation – Absorption and External Reconstruction

<b>Unit:2</b>		<b>18--hours</b>
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Holding Company Accounts - Consolidation of Balance Sheets with treatment of Mutual Owings, Contingent Liability, Unrealized Profit, Revaluation of Assets, Bonus issue and payment of dividend (Inter Company Holdings excluded).

<b>Unit:3</b>		<b>17--hours</b>
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Banking Company Accounts - Preparation of Profit and Loss Account and Balance Sheet (New format only) - Rebate on Bills Discounted - Classification of Advances - Classification of Investments.

<b>Unit:4</b>		<b>15--hours</b>
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Insurance Company accounts: General Insurance and Life Insurance - Under IRDA 2000

<b>Unit:5</b>		<b>18--hours</b>
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Statements of Accounts for Electricity Companies – Treatment of Repairs and Renewals - Accounting Standards – Financial Reporting Practice (Theoretical Aspects)

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90--hours</b>

	<b>Total Lecture hours</b>	<b>90-- hours</b>
<b>Text Book(s)</b>		
1	S.P. Jain & K.L. Narang, "Advanced Accounting", Kalyani Publications, New Delhi. 5. Shukla M.C.	
2	Gupta R.L. & Radhaswamy M., "Corporate Accounts", Theory Method and Application-13th Revised Edition 2006, Sultan Chand & Co., New Delhi	
3	Dr. M.A. Arulanandam, Dr. K.S. Raman, "Advanced Accountancy, Part-I", Himalaya Publications, New Delhi.2003.	
<b>Reference Books</b>		
1	Gupta R.L. & Radhaswamy M., "Corporate Accounts", Theory Method and Application-13th Revised Edition 2006, Sultan Chand & Co., New Delhi.	
2	Grewal T.S.& Gupta S.L., "Advanced Accountancy", S. Chand & Co., New Delhi	

<b>Mapping Programme outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	M	S	M	S
<b>CO2</b>	S	S	S	M	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>TITLE OF THE COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core- 14</b>		<b>Banking Law and Practices</b>	<b>4</b>			<b>4</b>

<b>Pre-requisite</b>	<b>Basic knowledge in Banking</b>	<b>Syllabus</b>	2021-22 Batch and 2022 onwards
<b>Course Objectives:</b>			
The main objectives of this course are to: <ul style="list-style-type: none"> <li>• To provide knowledge about the working of banking industry</li> <li>• To understand the basic understanding of loan disbursement policies of banks</li> <li>• To provide insights about various documents used in banking services</li> </ul>			
<b>Expected Course Outcomes:</b>			
On the successful completion of the course, student will be able to:			
1	Remembering the various terms and concepts used in banking industry		K1
2	Understanding the various process and activities of accounts in banks		K2
3	Outline various features of cheques for easy and simple banking		K2
4	Examine the various loans and advance related process in banks		K4
5	Classifying various kind of documents involved in banking services		K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create			
<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>	
Definition of banker and customer – Relationships between banker and customer – special feature of RBI, Banking regulation Act 1949. Secrecy of customer Account.			
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>	
Opening of account – special types of customer – types of deposit – Bank Pass book – collecting banker – paying banker – banker lien.			
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>	
Cheque – features essentials of valid cheque – crossing – making and endorsement – payment of cheques statutory protection duties to paying banker and collective banker - refusal of payment cheques Duties holder & holder id due course.			
<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>	

Loan and advances by commercial bank - lending policies of commercial bank - Forms of securities – lien pledge hypothecation and advance against the documents of title to goods – mortgage – <b>Position of Surety.</b>		
<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>13-- hours</b>
Letter of credit – Bills and supply bill - Purchase and discounting of bills – Travelers’ cheque, Credit card, <b>Debit card, Recent trends in digital banking (Core banking, Net Banking)</b>		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>75-- hours</b>

<b>Text Book(s)</b>	
1	Sundharam and Varshney, Banking theory Law & Practice, Sultan Chand & Sons., New Delhi.
2	Basu : Theory and Practice of Development Banking
3	Reddy & Appanniah : Banking Theory and Practice
<b>Reference Books</b>	
1	Natarajan & Gordon : Banking Theory and Practice
2	Banking Regulation Act, 1949.
3	Reserve Bank of India, Report on currency and Finance 2003-2004.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	
2	
4	
Course Designed By:	

<b>Mapping Programme outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core- 15</b>	<b>Cost Accounting</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Accounting</b>	<b>Syllabus version</b>	2021-22 and 2022 onwards		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ul style="list-style-type: none"> <li>• To understand the concept and various components of costing</li> <li>• To assist preparation of accounts under process costing</li> <li>• To familiarize with the techniques of operating costing</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Recall various concepts of costing and costing methods				K1
2	Analyze the various elements of costing				K4
3	Explain the labour wage payment system				K2
4	Outline the cost under process costing system				K2
5	Examine about operational costing, contract costing and Reconciliation of Cost and Financial Statements.				K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create					
<b>Unit:1</b>				<b>15--hours</b>	

Cost Accounting – Definition – Meaning and Scope – Concept and Classification – Costing an aid to Management — Types and Methods of Cost – Elements of Cost Preparation of Cost Sheet and Tender.		
<b>Unit:2</b>		<b>15--hours</b>
Material Control: Levels of material Control – Need for Material Control – Economic Order Quantity – ABC analysis – Perpetual inventory – Purchase and stores Control: Purchasing of Materials – Procedure and documentation involved in purchasing – Requisition for stores – Stores Control – Methods of valuing material issue.		
<b>Unit:3</b>		<b>15--hours</b>
Labour: System of wage payment – Idle time – Control over idle time – Labour turnover. Overhead – Classification of overhead – allocation and absorption of overhead.		
<b>Unit:4</b>		<b>15--hours</b>
Process costing – Features of process costing – process losses, wastage, scrap, normal process loss – abnormal loss, abnormal gain. (Excluding inter process profits and equivalent production).		

<b>Unit:5</b>		<b>13--hours</b>
Operating Costing - Contract costing – Reconciliation of Cost and Financial accounts.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>75--hours</b>

<b>TextBook(s)</b>	
1	S.P.Jain and K.L.Narang, "Cost Accounting", Kalyani Publishers, New Delhi. Edn. 2005
2	R.S.N.Pillai and V.Bagavathi, "Cost Accounting", S.Chand and Company Ltd., New Del

	hi. Edn.2004
3	S.P.Iyyengar,“CostAccountingPrinciplesandPractice”,SultanChand,NewDelhi.2005
<b>ReferenceBooks</b>	
1	V.KSaxena&C.D.Vashist,“CostAccounting”,SultanChand,NewDelhi2005
2	M.N.Arora,“CostAccounting”,SultanChand,NewDelhi2005.

<b>Mapping Programme outcomes</b>					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	S	S
CO3	S	S	S	M	M
CO4	S	S	M	M	M
CO5	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 16	Income Tax Law and Practices	4			4
Pre-requisite	Basic knowledge in law	Syllabus version	2022 onwards2021- 22		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ul style="list-style-type: none"> <li>• To understand the various concepts of income tax and related terminologies</li> <li>• To familiarize with calculation if income under different heads</li> <li>• To understand the process of set off and carry forward of losses while computing total income</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Outline the various terminologies related to income tax				K1
2	Understand the method of calculating and levying tax				K



		2
3	Apply the various tax laws and available provisions in tax computations	K3
4	Evaluate the set off and carry forward of losses while calculating personal income	K5
5	Analyze self-assessment of income and tax computation	K 4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>20--hours</b>
Income Tax Act – Definition of Income – Assessment year – Previous Year – Assessee – Scope of Income – Charge of Tax – Residential Status – Exempted Income.		
<b>Unit:2</b>		<b>18--hours</b>
Heads of Income: Income from Salaries – Income from House Property.		
<b>Unit:3</b>		<b>17--hours</b>
Profit and Gains of Business or Profession – Income from Other Sources.		
<b>Unit:4</b>		<b>15--hours</b>
Capital Gains – Deductions from Gross Total Income.		
<b>Unit:5</b>		<b>18--hours</b>
Set off and Carry forward of losses – Aggregation of Income- Computation of Tax liability – Assessment of Individuals.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		

	<b>Total Lecture hours</b>	<b>90--hours</b>
<b>Text Book(s)</b>		
1	Gaur and Narang, “Income Tax Law and Practice” Kalyani publishers New Delhi	
<b>Reference Books</b>		
1	Dr. HC Mehrotra, “Income-tax Law and Accounts” Sahithya Bhavan publishers	

<b>Mapping Programme outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	L	L	L
<b>CO2</b>	S	S	L	M	M
<b>CO3</b>	S	M	M	L	L
<b>CO4</b>	S	S	L	M	M
<b>CO5</b>	S	M	M	L	L

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Elective 1</b>	<b>Business Finance</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Finance</b>	<b>Syllabus version</b>	2021-22 and 2022 batch		
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To understand the various concept relating to finance</li> <li>• To familiarize with the basics of financial planning</li> <li>• To analyze various sources and forms of finance</li> <li>• To understand the various dimensions of capital market and their components</li> <li>• To provide knowledge about capitalization and related theories</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					

1	Outline various concepts relating to finance	K2
2	List the various techniques of financial planning	K2

3	Analyze various sources and forms of finance	K4
4	Examine the various dimensions of capital market and their components	K4
5	List the capitalization concept and related theories for decision making	K4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

<b>Unit:1</b>		<b>15--hours</b>
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Business Finance: Introduction – Meaning – Concepts - Scope – Function of Finance Traditional and Modern Concepts – Contents of Modern Finance Functions

<b>Unit:2</b>		<b>15--hours</b>
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Financial Plan: Meaning - Concept – Objectives – Types – Steps of financial planning: Estimation of Long Term and Short-Term Financial Needs. Significance – Fundamentals.  
**Time Value of money – Practical Applications of Time Value Techniques**

<b>Unit:3</b>		<b>15--hours</b>
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Sources and Forms of Finance: Equity Shares, Preference Shares, Bonds, Debentures and Fixed Deposits – Features – Advantages and Disadvantages- Lease Financing: Meaning – Features – Forms – Merits and Demerits.

<b>Unit:4</b>		<b>15--hours</b>
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Capital Structure – Cardinal Principles of Capital structure – **Kinds and Process of Capital Budgeting – Methods of Capital Budgeting. Leverage – Meaning – Types of Leverage.** Trading on Equity – Cost of Capital – Concept – Importance – Calculation of Individual and Composite Cost of Capital.

<b>Unit:5</b>		<b>13--hours</b>
Capitalisation - Bases of Capitalisation – Cost Theory – Earning Theory – Over Capitalisation – Under Capitalisation : Symptoms – Causes – Remedies – Watered Stock – Watered Stock Vs. Over Capitalisation. <b>Dividend Policy – Determinants of Dividend Policy – Types of Dividend Policy.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75--hours</b>

<b>Text Book(s)</b>	
1	Essentials of Business Finance - R.M. Sri Vatsava
2	Financial Management – Saravanavel

<b>Reference Books</b>	
1	Financial Management - L.Y. Pandey
2	Financial Management - M.Y. Khan and Jain
3	Financial Management - S.C. Kuchhal

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	L	S	S	S
<b>CO2</b>	S	M	S	S	M
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	S	S	M	S	M
<b>CO5</b>	M	S	M	M	M

Course code			L	T	P	C
SBC 3		<b>Business Application Software II</b>	4			4
<b>Pre-requisite</b>	<b>Basic knowledge in MS PowerPoint and MS Access</b>		<b>Syllabus Version</b>	2021-2022 and 2022 onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to: Understand the basic framework and how to work in MS – PowerPoint and MS - Access						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts computer applications using MS-PowerPoint					K2
2	Create and do effective presentation for the business meeting using power point presentation.					K2
3	Understand the basic concepts computer applications using MS-Access					K2
4	Generate the database using MS-Access					K2
5	Examine the Filtering and Querying Tables					K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>						
<b>9--hours</b>						
<b>Microsoft PowerPoint:</b> Basics – Using Text – Adding Visual Elements – Charts and Tables – Drawing – Clipart – Sounds – Animation – Apply Time Transitions to Slides -Menus, Toolbars and Navigation in PowerPoint.						
<b>Unit:2</b>						
<b>8--hours</b>						
Working with PowerPoint: Slide Sorter & layout – Date & Time – Macros- Custom Animation- <b>Morph Transition – Zoom for presentation – Using 3D Model.</b>						
<b>Unit:3</b>						
<b>9--hours</b>						

<b>Microsoft Access: Database Overview-Creating Database – Creating database through Table Wizard – Modifying Table.</b>		
<b>Unit:4</b>		<b>9--hours</b>
Creating a Table – Rename Columns–Saving the Database – Dark theme support – Relationships - Forms.		
<b>Unit:5</b>		<b>8--hours</b>
Filtering and Querying Tables – Crating Reports and Mailing Labels – Sharing Information between Applications.		

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<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>45--hours</b>
<b>Text Book(s)</b>		
1	<b>SanjaySaxena</b> ,“MS-Office2000”,VikasPublishingHousePrivateLtd.	
<b>Reference Books</b>		
1	<b>TimothyJ.O’LearyandLindaiO’Leary</b> ,“MS-Office“,IRWIN/McGrawHill.	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	S	M	S	S

<b>CO3</b>	M	S	S	S	S
<b>CO4</b>	S	S	S	M	M
<b>CO5</b>	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code			L	T	P	C
Core- 17		<b>Management Accounting</b>	4			4
<b>Pre-requisite</b>		<b>Basic knowledge in Accounting</b>	<b>Syllabus Version</b>	2021-2022 and 2022 onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ul style="list-style-type: none"> <li>• To understand the various components of management accounting and related terms •</li> <li>To understand analysis using ratio, working capital management and marginal costing •</li> <li>To familiarize with budget preparation and budgetary control tools</li> </ul>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Outline the various concepts relating to management accounting					K2
2	Analyze financial statements using ratio analysis					K4
3	Evaluate the working capital management of companies					K5
4	Comparing various alternatives using marginal costing and decision making					K2
5	Analyze new budget and budgetary control for organizations					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>					<b>20-- hours</b>	
Management Accounting – Meaning – Objectives and Scope – Relationship between Management Accounting , Cost Accounting and Financial Accounting.						
<b>Unit:2</b>					<b>18-- hours</b>	

Ratio Analysis – Analysis of liquidity – Solvency and Profitability – Construction of Balance Sheet.		
<b>Unit:3</b>		<b>17-- hours</b>
Working Capital – Working capital requirements and its computation – Fund Flow Analysis and Cash Flow Analysis.		
<b>Unit:4</b>		<b>15-- hours</b>
Marginal costing and Break Even Analysis – Managerial applications of marginal costing – Significance and limitations of marginal costing.		
<b>Unit:5</b>		<b>18--hours</b>
Budgeting and Budgetary control – Definition – Importance, Essentials – Classification of Budgets		

– Master Budget – Preparation of cash budget, sales budget, purchase budget, material budget, flexible budget.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90-- hours</b>

<b>Text Book(s)</b>	
1	Dr. S.N. Maheswari. “Management Accounting”, Sultan Chand & Sons, New Delhi, 2004. 2.. 3. 4.
2	Sharma and S.K.Gupta “Management Accounting”, Kalyani Publishers, New Delhi,2006
<b>Reference Books</b>	
1	. S.P. Jain and KL. Narang , “Cost and Management Accounting”, Kalyani Publishers, New Delhi
2	S.K.Bhattacharya, “Accounting and Management”, Vikas Publishing House.



Mapping Programme outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	S	S
CO3	S	S	S	S	S
CO4	S	S	S	M	M
CO5	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE	L	T	P	C
Core- 18	Principles of Auditing	4			4
Pre-requisite	Basic knowledge in auditinn	Syllabus			
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To understand the various concepts of auditing and the procedure for the conduct of internal audit</li> <li>• To familiarize with the process of valuing assets and liabilities</li> <li>• To understand the process of auditing the joint stock companies and investigation mechanism</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Define the important concept and rules relating to auditing				K1
2	Outline the techniques and applicability of internal audit				K2
3	Analyze the valuation of assets and liabilities in business				K4
4	Analyze the accounts and auditing the joint stock companies				K4
5	Examine about investigation and auditing of computerized accounts				K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create					
Unit:1	Title of the Unit (Capitalize each Word)	15-- hours			

Auditing– Origin – Definition – Objectives – Types – Advantages and Limitations – Qualities of an Auditor – Audit Programmes		
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Internal Control – Internal Check and Internal Audit –Audit Note Book – Working Papers. Vouching – Voucher – Vouching of Cash Book – Vouching of Trading Transactions – Vouching of Impersonal Ledger.		
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Verification and Valuation of Assets and Liabilities – Auditor’s position regarding the valuation and verifications of Assets and Liabilities – Depreciation – Reserves and Provisions – Secret Reserves.		
<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Audit of Joint Stock Companies – Qualification – Dis-qualifications – Various modes of Appointment of Company Auditor – Rights and Duties – Liabilities of a Company Auditor – Share Capital and Share Transfer Audit – Audit Report – Contents and Types. <b>Auditing Ethics-Ethics in Auditing-Professional Ethics-Generally accepted auditing standards</b>		

<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>13-- hours</b>
Investigation – Objectives of Investigation – Audit of Computerised Accounts – Electronic Auditing – Investigation under the provisions of Companies Act.		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>75--hours</b>
<b>Text Book(s)</b>		
1	B.N. Tandon, “Practical Auditing”, S Chand Company Ltd	

Reference Books	
1	.R.M De Paula, “Auditing-the English language Society and Sir Isaac Pitman and Sons Ltd,London
2	Spicer and Pegler, “Auditing: Khatalia’s Auditing” 4. Kamal Gupta, “Auditing “, Tata Mcgriall Publications

Mapping with programme outcomes					
	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	S
CO2	S	S	S	M	M
CO3	S	S	M	S	S
CO4	S	S	S	M	M
CO5	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code		L	T	P	C
Core- 19	Indirect Taxes	4			4
Pre-requisite	Basic knowledge in Tax	Syllabus Version	2021-2022 and 2022 onwards		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ul style="list-style-type: none"> <li>• To understand the applicability of indirect taxes in India</li> <li>• To familiarize with the calculation and execution of goods and service tax in India</li> <li>• To understand the working of custom law in India</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Recall various concepts relating to Indirect tax regime in India				K1
2	Analyze the concept and applicability of GST in businesses				K4
3	Compare the GST regime with other indirect tax laws prior to it				K2
4	Illustrate GST system in own business and other prototypes				K2

5	Examine the custom law and related duties and taxes	K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create		
<b>Unit:1</b>		<b>20-- hours</b>
<p>Meaning of Tax and Taxation - Types of Taxes: Direct and Indirect Taxes - Features – <b>Canons of taxation</b> -Merits and Limitations - Comparison of Direct and Indirect taxes. Constitutional basis of Taxation in India- Methods of levying Indirect Taxes: Advoleram and Specific. Contribution of Indirect taxes to Government Revenues</p>		
<b>Unit:2</b>		<b>18-- hours</b>
<p>Good and Services Tax in India - Introduction – Concept of GST - Need for GST - Advantages of GST. Structure of GST in India: Dual Concept – CGST- SGST- UTGST-IGST. Subsuming of Taxes- GST Rate Structure in India. GST Council: Structure and Functions. <b>Taxes subsumed under State Goods and Services Tax Act 2017- Taxes subsumed under Central Goods and Services Tax Act 2017.</b></p>		
<b>Unit:3</b>		<b>17-- hours</b>
<p>Levy and Collection under CGST and SGST Acts: Meaning of important terms: Goods, Services, Supplier, Business, Manufacture, Casual Taxable Person, Aggregate Turnover, Input Tax and Output Tax. Taxable Event under GST: Concept of Supply - Time of supply - Value of Taxable supply. Composite and Mixed Supplies. Input Tax Credit: Meaning - Eligibility and Conditions for availing Input Tax Credit. Reverse Charge Mechanism under GST- <b>Filing of returns</b>. Composition Levy: Meaning and Applicability.</p>		

<b>Unit:4</b>		<b>15--hours</b>
<p>Levy and Collection under Integrated Goods and Services Tax Act: Meaning of important terms: Integrated tax, Intermediary, Location of the Recipient and Supplier of Services, and Zero-rated Supply. Nature of Supply: Intra-State Supply and Inter-State Supply - Place of Supply of Goods or Services: Meaning and Determination. Procedures under GST: Procedure for Registration - Persons Liable for Registration - Compulsory Registration and Deemed Registration. E-Way Bill under GST: Meaning and Applicability. Filing of Returns: Types of GST Returns and their Due Dates.</p>		

<b>Unit:5</b>		<b>18--hours</b>
Introduction to Customs Laws in India: The Customs Act 1962 - The Customs Tariff Act 1975 - Basic Concepts - Taxable Event - Levy and Exemptions from Customs Duty - Types - Methods of Valuation- <b>Meaning of Classification of goods - Methods of valuation of imported goods - Abatement of Duty on Damaged or Deteriorated Goods - Customs Duty Draw Back.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90--hours</b>
<b>Text Book(s)</b>		
1	Indirect Taxes Law and Practice - V.S.Datey. Taxmann Publications, New Delhi.	
2	Indirect Taxes: GST and Customs Laws - R.Parneswaran and P.Viswanathan, Kavin Publications, Coimbatore.	
<b>Reference Books</b>		
1	GST Law and Practice - S.S.Gupta, Taxmann Publications, New Delhi.	
2	Indirect Taxation - V.Balachandran. Sultan Chand & Co. New Delhi	

<b>Mapping with programme outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	M	M	M
<b>CO2</b>	S	S	M	M	M
<b>CO3</b>	S	M	M	M	M
<b>CO4</b>	S	S	M	M	M
<b>CO5</b>	S	S	M	M	M

<b>Course code</b>	<b>TITLE OF THE COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Elective 4</b>	<b>Entrepreneurial development</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge about entrepreneurship</b>	<b>Syllabus</b>		<b>2021 -22 batch and 2022</b>	

			<b>onwards</b>
<b>Course Objectives:</b>			
The main objectives of this course are to:			
<ul style="list-style-type: none"> <li>• To understand the basic concepts of entrepreneurship and related initiatives</li> <li>• To provide insights about the setting up of startups</li> <li>• To familiarize with the institutional services to entrepreneur</li> <li>• To provide knowledge about various financial support available to the entrepreneurs • To provide knowledge about various subsidies and incentives available for entrepreneurs</li> </ul>			
<b>Expected Course Outcomes:</b>			
On the successful completion of the course, student will be able to:			
1	Recall the importance and role of entrepreneurship as an economic activity		K1
2	Explain the various process of setting up a startup		K2
3	Outline the various institutional services to entrepreneur		K2
4	Analyze the various financial institution available to support entrepreneurs		K4
5	List the various subsidies and incentives available for entrepreneurs		K4
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create			
<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>		<b>15-- hours</b>
Concept of Entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneurship phases of EDP. Development of Women Entrepreneur & Rural Entrepreneur – including self employment of women council scheme.			
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>		<b>15-- hours</b>
The start-up process, <b>Micro, Medium and Small Enterprises</b> - Project identification – selection of the product – project formulation evaluation, - Project Report – <b>Social Responsibility of Business in India</b>			
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>		<b>15-- hours</b>
Institutional service to entrepreneur – DIC, SIDO, NSIC, SISI, SSIC, SIDCO – ITCOT, IIC, KUIIC and commercial bank. Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, THIC, SIDCS, LIC and GIC, UTI, SIPCOT – SIDBI.			

<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Incentives and subsidies – Subsidied services – subsidy for market. Transport – seed capital assistance - Taxation benefit to SSI - role of entrepreneur in export promotion and import substitution.		
<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>13-- hours</b>
Event Management: Event Planning – Importance of Event Planning, benefits of Event Planning, Event Planning Phases - Pre Event, Event Execution, Post Event, Event Planning Tools, Blue print of Event, Event Calendar, Event check list –Practical session.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75-- hours</b>

<b>Text Book(s)</b>	
1	Entrepreneurial Development – C.B.Gupta and N.P.Srinivasan
2	Fundamentals of Entrepreneurship and Small Business –Renu Arora & S.KI.Sood
<b>Reference Books</b>	
1	Entrepreneurial Development – S.S.Khanka 4. Entrepreneurial Development – P.Saravanel
2	Entrepreneurial Development – S.G.Bhanushali
3	Entrepreneurial Development – Dr.N.Ramu
4	Start Your Own Event Planning Business 3/E: Your Step-by-Step Guide to Success -
5	Entrepreneur Press (Author), Cheryl Kimball (Author) - Publication Date: June 13, 2011
6	Event Planning Ethics and Etiquette - Publisher: John Wiley & Son, Publication
	The Complete Guide to Successful Event Planning by Shennon Kilkenny

**Mapping Course objectives and course outcomes**

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	S	M	S	S
<b>CO2</b>	S	S	S	S	S
<b>CO3</b>	S	S	S	M	S
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	S	S	S	M	M

<b>Course code</b>	<b>TITLE OF THE COURSE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Elective 7</b>	<b>Financial markets</b>	<b>4</b>			<b>4</b>
<b>Pre requisite</b>	<b>Basic knowledge about financial market</b>		<b>Syllabus revision</b>		<b>2022</b>
<b>Course Objectives:</b>					
<p>The main objectives of this course are to:</p> <ul style="list-style-type: none"> <li>• To understand the basic concepts of financial market</li> <li>• To analyze the working and components of corporate securities market</li> <li>• To evaluate the functioning of stock exchanges in India</li> <li>• To evaluate the role of banks and intermediaries in financial market</li> <li>• To provide insights about the new models and innovative trends in financing</li> </ul>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Define the basic concepts of financial market				K1
2	Understand the components of corporate securities market				K2
3	Analyze the functions and working Mechanism of stock exchanges in India				K4
4	Explain the role of banks and intermediaries in financial market				K4
5	Apply various trends and new modes in financing				K3
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create					
<b>Unit:1</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>			



Financial System – Meaning – Functions - Financial Markets – Structure of Financial Markets -Financial Instruments - Indian Money Market and its classification and objectives – Money Market Instruments - Indian Capital Markets – Capital Market Structure- Capital Market Instruments.		
<b>Unit:2</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Markets for Corporate Securities – New Issue Markets – its Functions – Methods of Floating New Issues- Merchant Banking - Role and Functions of Merchant Bankers in India – Under writing.		
<b>Unit:3</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Secondary Markets – Stock Exchange – Role of Secondary Market – Listing of Securities – <b>Demat A/C- and its features</b> - Various Speculative Transactions – Role of SEBI – Regulation of Stock Exchange.		

<b>Unit:4</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>15-- hours</b>
Banks as Financial Intermediaries – Commercial Banks Role in Financing – IDBI – IFCI – LIC – GIC – UTI – Mutual Funds – Types of Mutual Funds- Net Asset Value (NAV).		
<b>Unit:5</b>	<b>Title of the Unit (Capitalize each Word)</b>	<b>13-- hours</b>
New Modes of Financing – Leasing as Source of Finance – Forms of leasing – Venture Capital – Dimension Functions – Venture Capital in India – Factoring – Types – Modus Operandi of Factoring – Factoring as Source of Finance.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>75-- hours</b>
<b>Text Book(s)</b>		
1	Essentials of Business Finance - R.M. Sri Vatsava	

2	Financial Management - Saravanel	
3	Financial Management - M.Y. Khan and Jain	
4	Financial Management Theory and Practice - Prasanna Chandra	
<b>Reference Books</b>		
1	Financial Management - L.Y. Pandey	
2	Financial Management - S.C. Kuchhal	
3	Principles of Financial Management - S.N. Maheshwari	

<b>Mapping Course objectives and course outcomes</b>					
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S
<b>CO3</b>	S	S	M	S	S
<b>CO4</b>	S	S	S	M	M
<b>CO5</b>	S	S	M	M	M

<b>Course code</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>SBE IV</b>	<b>Computer Applications: MS PowerPoint And MS Access and Tally Practical - II</b>	<b>4</b>	-	-	-
<b>Pre-requisite</b>	<b>Basics knowledge in MS PowerPoint And MS Access and Tally</b>	<b>Syllabus Version</b>	<b>2021-22 and 2022 onwards</b>		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					

1		K2
2		K6
3		K3
4		K4
5		K4

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

### **MS POWERPOINT**

1. Design slide for a product of your choice, include the picture of the product and demonstration and working (minimum three slides)
2. Prepare An Organization Chart For A Company.
3. Create a show projecting the activities of your department during the academic year.

### **MSACCESS**

1. Create a Student database with the following Tables:
  - i). StudentsPersonalDetails
  - ii). StudentsMarkDetailsPerform the following:
    - a). Relate the Tables
    - b). Create a query to the students passed in all subjects.
    - c). Create a form and report

### **TALLY**

1. Company Creation and Alteration.
2. Creating and Displaying Ledger
3. Voucher Creation, **Alteration and Deletion**
4. **Purchase and sales invoice with GST.**
5. Inventory Information–Stock Summary
6. Inventory Information–Godown Creation and alteration
7. Final Accounts
8. Bank Reconciliation Statement
9. Accounting and Inventory Information's
10. Bill wise Statements.

**PROVIDENCE COLLEGE FOR WOMEN  
(AUTONOMOUS), COONNOOR**

**PG & RESEARCH DEPARTMENT OF  
COMMERCE**

**M.COM (C.A) SYLLABUS**

**2021-2022 & 2022 onwards**

<b>Program Educational Objectives (PEOs)</b>	
The M.Com (Computer Applications) program describes accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	To understand an assignment in an e-commerce forum
PEO2	To manage a retail outlet independently
PEO3	To assume the responsibilities of computer operation in small business engaged either in manufacturing or rendering services.
PEO4	To involve in lifelong learning
PEO5	To exercise professional skills and values in the ICT sector

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of the M.Com (Computer Applications) program, the students are expected to	
PSO1	To gain practical insights in project preparation and analysis of business data
PSO2	Use software tools to carry out a specified financial analysis for a corporate sector
PSO3	Apply the knowledge gained during the course of the program to solve the real-time problems
PSO4	To Meet the needs of industry 4.0
PSO5	Communicate effectively with ICT professionals
<b>Program Outcomes (POs)</b>	
On successful completion of the M.Com (Computer Applications) program	
PO1	To be conversant with recent developments in commerce and trade areas in the field of computer
PO2	To gain Computer knowledge and make use of it effectively in the field of commerce
PO3	To design computer software to suit the needs of industry and business
PO4	To acquire skill in doing business in the electronic environment
PO5	To become worthy citizens of the nation by enriching knowledge in the application of computer in commerce

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	Managerial Economics	4	3	-	50	50	100
	Marketing Management	4	3	-	50	50	100
	Database Management /System	4	3	-	50	50	100
	Computer Applications:MSOffice & Oracle-Practical-I	4	3		50	50	100
	Elective-I:	4	3	-	50	50	100
<b>SECOND SEMESTER</b>							
	Corporate Accounting	4	3	-	50	50	100
	Human Resource Management	4	3	-	50	50	100
	Business Research Methods	4	3	-	50	50	100
	Object Oriented Programming with C++	4	3	-	50	50	100
	Computer Applications:Tally & C++-Practical-II	4	3		50	50	100
	Elective-II:	4	3	-	50	50	100
<b>THIRD SEMESTER</b>							
	Cost and Management Accounting	4	3	-	50	50	100
	Visual Basic	4	3	-	50	50	100
	Financial Management	4	3	-	50	50	100
	Computer Applications: Visual Basic, VBScript-Practical-III	4	3		50	50	100
	Institutional Training (Report 40 marks and Viva 10 marks)	2	-	-	50	-	50
	Elective-III:	4	3	-	50	50	100
<b>FOURTH SEMESTER</b>							
	Investment Management	4					
	Direct Taxes	4					
	Java Programming and HTML	4					
		8			100 Marks -Project	100 Marks Viva-Voce)	200
					50	50	100
					50	50	100
	Elective-IV:	4			50	50	100
<b>Grand Total</b>		90					2250

**#Electives: List of Group of Elective Papers:**

(Colleges can choose any one of the Group Papers as Electives) :

**1. GROUP-A**

1. Services Marketing
2. Marketing of Financial Services
3. Marketing Health Services
4. Travel and Hospitality Services

**2. GROUP-B**

1. Financial Markets and Institutions
2. Indian Stock Exchanges
3. Futures and Options
4. Fundamental and Technical Analysis

**3. GROUP-C**

1. Principles of International Trade
2. Export and Import Procedure
3. Institutions Facilitating International Trade
4. India's International Trade



Coursecode	MANAGERIAL ECONOMICS		L	T	P	C
Core/Elective/Supportive	CORE		4			4
Pre-requisite	Basic Understanding In Economics Terminologies		Syllabus Version		2022 onwards	
<b>CourseObjectives:</b>						
The Main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Be familiar with the economic theories and law of variable proportion.</li> <li>2. Make The Students To Understand the demand determinants.</li> <li>3. Acquire knowledge in production function, cost and revenue break even analysis.</li> <li>4. Lay Foundation on economic models for demand &amp; supply, pricing decisions.</li> <li>5. Assess The Effects Of Business cycle in business and industrial sickness.</li> </ol>						
<b>ExpectedCourseOutcomes:</b>						
On The Successful completion of the course, student will be able to:						
1	Acquire The Knowledge About The Nature And Scope of Managerial Economics, demand analysis and law of variable proportion.			K1		
2	Understand the role of Managerial Economist, goal of corporate enterprises, demand determinants, types of market, national income and public finance.			K2		
3	Have Thorough Knowledge About Various Types Of costs and revenues and Break even point analysis.			K3		
4	Analyze role of managerial economist in demand analysis, cost and production analysis.			K4		
5	Evaluate The Value Of Enterprises, pricing and output decisions, business cycles and remedies of industrial sickness			K5		
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Managerial Economics-Introduction</b>			<b>18-hours</b>		
Managerial Economics: Meaning-Nature-Scope- Role and Responsibilities of Managerial Economist – <b>Micro economics and macro economics-definition, scope, merits and demerits</b>						
<b>Unit:2</b>	<b>Demand analysis</b>			<b>18-hours</b>		
Demand analysis - Demand determinants – Demand distinctions- Law of demand-exceptions to law of demand– Elasticity of demand – Types, methods – Applications- Factors influencing lasticity demand–Demand forecasting: Meaning-methods-advantages disadvantages.						
<b>Unit:3</b>	<b>Production Function</b>			<b>18-hours</b>		
Production Function- Laws of returns-Law of variable proportions- <b>Marginal production</b> -Assumptions and Significance-Limitations. Cost and Revenue – Fixed cost – Variable cost-Total, Average and Marginal cost-Long run and short run costs curves-Revenue curves-Average and marginal revenue-Break Even Analysis.						
<b>Unit:4</b>	<b>Pricing And Output Decisions-different market situations</b>			<b>18-hours</b>		
Pricing and output decisions in different market situations – Monopoly and Duopoly competition -Perfect and Imperfect-Pricing Policies.						

<b>Unit:5</b>	<b>Business cycle</b>	<b>18-hours</b>
Business cycle – National income-Monetary and Fiscal Policy - objectives – Industrial Sickness – causes –remedies.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	
Online assignment, Group discussion and seminar		
	<b>Total Lecture hours</b>	<b>90-hours</b>
<b>Books for Study</b>		
1	Managerial Economics: Maheswari and Varshney, 2018	
2	Managerial Economics: P.L. Metha, 2016	
3	Managerial Economics: G.S. Gupta, 2015	
<b>Books for References</b>		
1	Managerial Economics: D. Gopalakrishnan, 2016	
2	Managerial Economics: B.M. Wali & Kalkundrikar, 2019	
3	Managerial Economics: S. Sankaran, 2019	
<b>Related Online Contents</b>		
1	<a href="https://youtu.be/n47SQ64MhYw">https://youtu.be/n47SQ64MhYw</a>	
2	<a href="https://www.yourarticlelibrary.com/notes/national-income-definition-concepts-and-methods-of-measuring-national-income/30801">https://www.yourarticlelibrary.com/notes/national-income-definition-concepts-and-methods-of-measuring-national-income/30801</a>	
3	www.icaai.org	
Course Designed By:		

Mapping with Program Outcomes					
COs	PO1	PO2	PO3	PO4	PO5
CO1	S	L	M	S	M
CO2	M	S	S	S	M
CO3	M	S	S	S	S
CO4	S	S	S	S	M
CO5	L	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course Code	MARKETING MANAGEMENT			L	T	P	C
Core/Elective/Supportive	CORE			4			4
Pre-requisite	Basic understanding of the marketing and its applications in decision making is required			Syllabus Version	2022 onwards		
<b>Course Objectives:</b>							
The Main Objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Enable students to classify types of marketing and modern marketing concept.</li> <li>2. Equip the learners on product planning, appraise pricing system and promotion in the markets.</li> <li>3. Explain The Various Kinds of channels of distribution and function of middleman.</li> <li>4. Enhance Practical Applications On Advertising Media.</li> <li>5. Introduce the agricultural marketing and clarifying market research marketing research</li> </ol>							
<b>Expected Course Outcomes:</b>							
On The Successful completion of the course, student will be able to:							
1	Recollect The Marketing Concepts, types and modern marketing concept.			K1			
2	Identify The Macro and micro environments of a market and buyer behavior.			K2			
3	Locate the different types of products, product line, product mix and pricing decisions.			K3			
4	Evaluate the importance of channels of distribution and promotional mix.			K4			
5	Acquire the knowledge to market the agricultural produce and about marketing research.			K4			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>							
<b>Unit:1</b>							
<b>Introduction</b>			<b>18-hours</b>				
Marketing Meaning-types (Relationship marketing-Digital marketing-Augmented marketing-Retail marketing-Event marketing Marketing-Demarketing- Remarketing-Social Marketing Marketing)-.Modern marketing concept:factors influencing the marketing concept-marketing system-marketing functions. Marketing Management:Meaning-Definition-Nature-Principles-Importance-Functions-Problems-Differences between Sales Management and Marketing Management. Agricultural Marketing							
<b>Unit:2</b>							
<b>Product</b>			<b>18-hours</b>				
Product: Meaning- features-classifications- Product policies: Product Planning and Development-Product Line-Product Mix-Product Branding-Product Packaging – Labeling: meaning-features-importance. Product Life Cycle: Meaning-importance-PLC Chart. Pricing: Objectives-kinds of pricing policy-factors influencing the pricing policy.							
<b>Unit:3</b>							
<b>Channel of Distribution</b>			<b>18-hours</b>				
Channels of Distribution – Meaning - Basic channels of distribution - Selection of a suitable channel-Factors Influencing Selection of a channel-middlemen distribution--Arguments In Favour of and against. Advertising: Meaning- Methods-Media- Advertising copy-Qualities of a good advertising copy- Evaluation of advertising copy.							

<b>Unit:4</b>	<b>PromotionalMix</b>	<b>18-hours</b>
Sales force Management : Meaning-importance. Advertising: Meaning-methods-media-advertising copy-qualities of a good advertising copy-evaluation of advertisements. Personal selling: Meaning-importance-duties-qualities of an effective salesman. Sales Force management-Order Placing-Generating leads-Sales forecasting-Sales force evaluation		
<b>Unit:5</b>	<b>MarketingInformationandResearch</b>	<b>18-hours</b>
Marketing Information and Research: Meaning-Importance- Components of marketing research-MarketResearchVsMarketingResearch.AdvantagesofMarketingResearch.AgriculturalMarketing:meaning-features –defects.		
<b>Unit:6</b>	<b>ContemporaryIssues</b>	
Online Assignment,Group Discussion Question And Seminar		
	<b>Total Lecture Hours</b>	<b>90- hours</b>
<b>BooksforStudy</b>		
1	MarketingManagement :C.B.MamoriaandJoshi, 2017	
2	Marketingmanagement:Dr.C.B.Gupta andDr.N.RajanNair,2019	
3	Sales Force Management -Greg w. Marshall,Mark V Johnson	
4	MarketingManagement : PhilipKotler, 2017	
<b>BooksforReferences</b>		
1	ModernMarketing:R.S.N.Pillai&Bagavathi,2016	
2	Fundamentalsof Marketing: WilliamJ.Stanton, 2018	
3	MarketingManagement:Dr.Radha,2018	
<b>RelatedOnlineContents</b>		
1	<a href="http://www.managementstudyguide.com">www.managementstudyguide.com</a>	
2	<a href="http://www.yourarticlelibrary.com">www.yourarticlelibrary.com</a>	
3	<a href="http://www.pondiuni.edu.in">www.pondiuni.edu.in</a>	
4		
CourseDesigned By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	M	M	M	M
<b>CO2</b>	S	S	M	M	M
<b>CO3</b>	M	M	S	S	L
<b>CO4</b>	M	M	M	M	M
<b>CO5</b>	S	S	S	S	L

\*S-Strong;M-Medium;L-Low

<b>Coursecode</b>		<b>DATABASE MANAGEMENT SYSTEM</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>CORE</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge in DBMS is needed inUG level</b>	<b>Syllabus Version</b>			<b>2022 onwards</b>
<b>CourseObjectives:</b>						
The Main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Be familiar with the fundamental elements of relational database management systems.</li> <li>2. Develop the concepts of relational data model ,entity-relationship model,relational database design,and relational algebra.</li> <li>3. Lay an idea to improve the database design by normalization.</li> <li>4. Introduce Hierarchical approach and program communication block.</li> <li>5. Acquire knowledge in Network Approach, DBTG, Data Structure and Data Manipulation.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On The Successful completion the course, student will be able to:						
1	Describe the fundamental elements of relational database management systems			K2		
2	Explain The Basic Concepts Of Relational Data Model,entity-relationship model,relational database design,relational algebra and sql.			K1		
3	Convert The Er-model to relational tables,populate relational database and formulate sql queries on data.			K3		
4	Evaluate the hierarchical approach and program communication block			K5		
5	Be familiar with basic database knowledge in Network Approach, DBTG Data manipulation.			K6		
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6-Create</b>						
<b>Unit:1</b>	<b>Database System</b>			<b>18-hours</b>		
Database System Architecture Basic concepts: Data system, operational data, data independence, Architecture for a database system, Distributed databases. Storage Structures :Representation of Data. Data Structures and corresponding operators: Introduction, Relation Approach, Hierarchical Approach, Network Approach.						
<b>Unit:2</b>	<b>Relational Approach</b>			<b>18-hours</b>		
Relational Approach : Relational Data Structure : relation, Domain, attributes, keys. Relational Algebra: Introduction, Traditional T operation. Attribute Name For Derived Relations , special relational operations.						
<b>Unit:3</b>	<b>Embedded SQL</b>			<b>18-hours</b>		
Embedded SQL : Introduction – Operations not involving cursors involving cursors – Dynamic statements. Query by Example – Retrieval operations, Built-in functions, update operations, QBE Dictionary. Normalization: Functional dependency, First, Second, third normal forms, Relations with more than one candidate key, Good and bad decomposition.						
<b>Unit:4</b>	<b>Hierarchical Approach</b>			<b>18-hours</b>		

Hierarchical Approach: IMS data structure. Physical database, Database description, Hierarchical sequence. External level of IMS : Logical Databases, the program communication block. IMS Data manipulation: Defining the program communication block: DL/IE examples.
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<b>Unit:5</b>	<b>Network Approach</b>	<b>18-hours</b>
Network Approach : Architecture of DBTG system. DBTG Data Structure : The Set construct, Singular sets, sample schema, the external level of DBTG–DBTG Data manipulation.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	
Online Assignment, Group discussion and seminar		
<b>Total Lecture Hours</b>		<b>90- hours</b>
<b>Books for Study</b>		
1	Database Systems concepts by Abraham Silberschatz, Henry F Korth, 2018	
2	An Introduction to Database System– Bipin C Desai, 2016	
3	An Introduction to Database System–C.J. Dates, 2018	
<b>Books for References</b>		
1	Database Management Systems: Raghu Ramakrishnan, 2019	
2	Principles of Database Systems” by J. D. Ullman Book Review: 2014	
<b>Related Online Contents</b>		
1	<a href="https://youtu.be/DWnJaqRyfr4">https://youtu.be/DWnJaqRyfr4</a>	
2	<a href="https://youtu.be/P8n_rwPzdBc">https://youtu.be/P8n_rwPzdBc</a>	
3	<a href="https://youtu.be/7U2flvYGrOM">https://youtu.be/7U2flvYGrOM</a>	
4	<a href="https://youtu.be/DhlpnSbSuJE">https://youtu.be/DhlpnSbSuJE</a>	
Course Designed By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	S	S	M	M
<b>CO2</b>	M	M	S	M	S
<b>CO3</b>	M	S	S	M	M
<b>CO4</b>	M	M	S	M	S
<b>CO5</b>	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Coursecode		<b>COMPUTER APPLICATIONS PRACTICALS I-MS OFFICE AND ORACLE</b>	L	T	P	C
<b>Core/Elective/Supportive</b>		<b>CORE</b>			<b>4</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Practical exposes in application software using ms-office is required.</b>	<b>Syllabus Version</b>		<b>2022 onwards</b>	
<b>CourseProgramme:</b>						
<b>M.S.OFFICE</b>						
<p>1. Type a document (like-Speech of a chairman in AGM, Budget speech of finance minister)and perform the following:</p> <ul style="list-style-type: none"> <li>● Right align and bold face</li> <li>● Center align and italics</li> <li>● Justify And Center Alignment</li> <li>● Also Insert Footnote And Endnote For the same.</li> <li>● Change A Paragraph Into Two Column Paragraph</li> <li>● Insert Page Number At The bottom</li> <li>● Insert date, time and heading in the header section.</li> </ul>						
<p>2.Using mail merge, sendan invitation/notice(by creating the invitation/notice) for the following situation (at least 5 addresses to be entered) (Any one of the following)</p> <p>a) For opening a new branch b) InaugurationofATM c) Informing About new scheme or offer</p>						
<p>3.PreparationofTableusingMSword –Sales Analysisforaperiodoffive years forthreeproducts</p>						
<p>4. Using EXCEL prepare table for (anyone of the following)</p> <p>a) Employeespayroll b) Salesdata c) Students marks and perform the following functions (Total,Average,Percentage,conditional sum and show the results in chart)</p>						
<p>5.Preparean Excel sheet and apply the following statistical functions to analyze the data(Anyone Of the following)</p> <p>a) Mean,Median, Mode d) Capital BudgetingTechniques i) PayBankPeriod b) Standard Deviation)Depreciation Techniques)NPV c) Time Series)Ratiosg) BreakevenAnalysisiii)ARR</p>						
<p>6. Prepare a questionnaire for a research problem by using MS WORD – use word art,Reference,borders and shading and insertable relevant research problem.</p>						
<p>7.PrepareaPowerPointpresentation for (anyone of the following)</p> <p>a) ProductAdvertisementBreakEvenAnalysis b) CompanyAdvertisement Sales Projections c) AnnualGeneral Meeting(Minimum 5 slides)</p>						

Requirements

1. Using Hyperlink to all slides
2. Different Animation Effect For Text And pictures
3. Fully Automatic – timing– 2 minutes

8. Using Access prepare table for (anyone of the following)

- a) Pay Roll
- b) Student record
- c) Sales data
- d) Address Database Of Customers–

Requirements

(By using Design view/Wizard view)

1. One Of The Fields Should be Primary Key
2. Apply Sort option to display records (at least three different method of sorting)
3. Generate Reports by using different queries.

**DBMS**

9) Create a table-username Software with the fields and insert the values: Field name Field type Field size

Programmer name character

15 Title character 20

Language used character 15

Software cost number 10 with 2 decimal

places Development cost number 10

Softwares old number

3 Queries:

- a) Display the details of software developed by "PRAKASH".
- b) Display the detail of the packages whose software cost exceeds "2000".
- c) Display the detail of the software that are developed in "C++".
- d) What is the price of costliest software developed in "C".
- e) Display the detail of the programmer whose language used is same as "Suresh".

10) Create a table Company with the following fields and insert the values: Field name Field type Field size

Company name character 15

Proprietor character 15

Address character 25

Supplier name character 15

No of employees number 4

GP percent number 6 with 2 decimal places

Queries:

- a) Display all the records of the company which are in the ascending order of GP percent
- b) Displays The Name of the company whose supplier name is "Telco".
- c) Display the details of the company whose GP percent is greater than 20 and order by GP percent
- d) Display The Detail of the company having the employee ranging from 300 to 1000
- e) Display The name of the company whose supplier is same as like Tata's.



11) Create a table named Student with the following fields and insert the values:

Fieldname	Field type	Field size
Student Name	character	15
Gender	character	6
Roll No.	character	10
DepartmentName	character	15
Address	character	25
Percentage	number	4 with 2 decimal places

Queries:

- Calculate the average percentage of the students.
- Display The Names of the students whose percentage is greater than 80
- Display The Details of the student who got the highest percentage.
- Display The Details of the students whose percentage is between 50 and 70.
- Display the details of the students whose percentage is greater than the percentage of RollNo = 12CA01

12) Create the table PRODUCT with the following fields and insert the values:

Fieldname	Field type	Field size
Product no	number	6
Product name	character	15
Unit of measure	character	15
Quantity	number	6 with 2 decimal places
Total amount	number	8 with 2 decimal places

Queries:

- Using update statements calculate the total amount then select the record.
- Select The Records Whose Unit Of Measure Is "Kg"
- Select The Records whose quantity greater than 10 and less than or equal to 20
- Calculate the entire total amount by using sum operation
- Calculate The Number of records whose unit price is greater than 50 with count operation

13. Create the table PAYROLL with the following fields and insert the values:

Fieldname	Field type	Field size
Employee no	number	8
Employee name	character	8
Department	character	10
Basic pay	number	8 with 2 decimal places
HRA	number	6 with 2 decimal places
DA	number	6 with 2 decimal places
PF	number	6 with 2 decimal places
Net pay	number	8 with 2 decimal places

Queries;

- Update the records to calculate the net pay.
- Arrange The Records of employees in ascending order of their net pay
- Display The details of the employees whose department is: sales"
- Select Get details of employees whose HRA >= 1000 and DA <= 900
- Select The records in descending order

Coursecode	CORPORATE ACCOUNTING			L	T	P	C
<b>Core/Elective/Supportive</b>	<b>CORE</b>			4			4
<b>Pre-requisite</b>	<b>Broad knowledge in accounting entries</b>			<b>Syllabus Version</b>	<b>2022 onwards</b>		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Develop The Conceptual Framework Of Corporate accounting.</li> <li>2. Make The students learn procedures relating to preparation company final accounts.</li> <li>3. Educate the student to prepare of statement of affairs and liquidator's final statement.</li> <li>4. Impart The Knowledge relating to banking and insurance companies.</li> <li>5. Offer the ideas about Human resource accounting, Government accounting, Responsibility Accounting And Environmental Accounting.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On The Successful Completion of the course, students will be able to:							
1	Comprehend The Accounting Provisions In the Companies Act relating to prepare the final accounts of a company.			K1			
2	Prepare accounts relating to Amalgamation, Absorption and Alteration of share capital.			K2			
3	Prepare Accounts At the time of liquidation of companies.			K3			
4	Develop the knowledge on various accounting aspects pertaining to valuation of shares, holding company accounts and banking and insurance companies			K3			
5	Be familiar with the theoretical framework of Human resource accounting, Government accounting, Responsibility accounting and Environmental Accounting			K4			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>							
<b>Unit:1</b>							
<b>Final accounts</b>			<b>18-hours</b>				
Preparation of Final accounts – Schedule VI Part I and Part II – Profit prior to incorporation – Managerial remuneration – Issue Of Bonus shares – Preparation of Balance Sheet.							
<b>Unit:2</b>							
<b>Amalgamation</b>			<b>18-hours</b>				
Amalgamation as Merger- Amalgamation as Purchase -Calculation of Purchase Consideration under various methods- Accounting treatment as per AS 14 in the books of Transferee Company. Absorption (Excluding inter – company holdings) – External reconstruction – Internal reconstruction (Excluding scheme of reconstruction).							
<b>Unit:3</b>							
<b>Liquidation of companies</b>			<b>18-hours</b>				
Liquidation of companies: Meaning-causes-Preparation of Statement of Affairs and Liquidator's final statement. Holding company accounts excluding inter-company holdings: Preparation of Consolidated Balance sheet only.							
<b>Unit:4</b>							
<b>Banking companies and Insurance Companies</b>			<b>18-hours</b>				

Accountsof BankingcompaniesandInsuranceCompanies(LifeandFire Insuranceonly).
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<b>Unit:5</b>	<b>Inflation accounting</b>	<b>18-hours</b>
Inflation accounting – Human resource accounting-Principles of Government accounting –Responsibility Accounting-Environmental Accounting.		
<b>Unit:6</b>	<b>ContemporaryIssues</b>	
Online assignment,Group discussion and seminar		
	<b>Total Lecture Hours</b>	<b>90- hours</b>
<b>BooksforStudy</b>		
1	AdvancedAccounting:M.C.Shukla &T.S.Grewa, 2018	
2	Advanced Accounting:R.L.Gupta,2016	
<b>BooksforReferences</b>		
1	AdvancedAccounting:Jain &Narang,2019	
2	Arulanandam& Raman, “ Advanced accounting”, Himalaya Publishing House, Mumbai,2016	
3	S.P. Iyengar,“Advanced accounting”, Himalaya PublishingHouse,Mumbai,2018	
<b>RelatedOnlineContents</b>		
1	<a href="http://www.icaai.org">www.icaai.org</a>	
2	<a href="http://www.icsi.edu">www.icsi.edu</a>	
3	<a href="http://www.caclubindia.com">www.caclubindia.com</a>	
4		
CourseDesigned By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	M	M
<b>CO2</b>	M	M	S	M	S
<b>CO3</b>	S	S	S	S	M
<b>CO4</b>	M	M	S	M	S
<b>CO5</b>	S	S	M	S	M

\*S-Strong;M-Medium;L-Low

Coursecode	HUMAN RESOURCES MANAGEMENT		L	T	P	C
Core/Elective/Supportive	CORE		4			4
Pre-requisite	Understanding Of effective interpersonal skills of employees in the organization		Syllabus Version		2022 onwards	
<b>CourseObjectives:</b>						
<p>The Main objectives of this course are to:</p> <ol style="list-style-type: none"> <li>1. Explaining the importance of human resources and their effective management in organizations.</li> <li>2. Demonstrate a basic understanding of different tools used in forecasting and planning human resource needs.</li> <li>3. Outline The Current Theory And Practice Of recruitment and selection.</li> <li>4. Describe Appropriate Implementation, monitoring and assessment procedures of training.</li> <li>5. Explain the importance of the performance management system in enhancing employee performance.</li> </ol>						
<b>ExpectedCourseOutcomes:</b>						
On The Successful Completion Of The Course, student will be able to:						
1	Explain Human Resources Planning, Dealing With Surplus And Deficient manpower.		K1			
2	Describe The Meanings of terminology and tools used in managing employees effectively.		K2			
3	Prepare as election strategy for a specific job.		K2&K3			
4	Gain knowledge in develop, analyze and apply advance training strategies and specifications for the delivery of training programs.		K4			
5	Compare and contrast the different techniques involved in the performance appraisal process, for example, the giving and receiving of feedback		K5			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>		<b>18-hours</b>			
Human Resource Management –Definition-Objectives-Functions-Evolution and growth of HRM-Qualities of good HR Manager-Changing roles of a HR Manager-Problems and challenges of a HR Manager-Planning the Human resources-Objectives-Steps Human Resources planning –Dealing with surplus and deficient manpower-job analysis-Job description-Job Specification.						
<b>Unit:2</b>	<b>Recruitment and Selection</b>		<b>18-hours</b>			
Recruitment and Selection-Procurement Process-Placement-Induction-Objectives Of Recruitment-sources-Internal and External recruitment –Application blank-Testing-Interviews-Types.						
<b>Unit:3</b>	<b>Training and Development</b>		<b>18-hours</b>			
Training and Development-Principles of Training-Assessment of training needs-On the Job training methods-Off The Job Training Methods-Evolution Effectiveness Training Programmes. Work Life Balance.						
<b>Unit:4</b>	<b>Discipline</b>		<b>18-hours</b>			

Discipline-Meaning-Causes of indiscipline-Acts Of Indiscipline-ProcedureforDisciplinaryAction-Organization conflict-Conflict in organizational behavior-Individual Aspect Of Conflict-Organizational conflict-Management of conflict.		
<b>Unit:5</b>	<b>PerformanceAppraisal</b>	<b>18-hours</b>
Performance Appraisal-Process-Methods of performance appraisal-Appraisal counseling-Motivation Process-TheoriesofMotivation-Managinggrievancesand Discipline.		
<b>Unit:6</b>	<b>ContemporaryIssue</b>	
Online assignment,Group discussion and seminar Moc- Interview Resume Preparation Group Discussion		
<b>TotalLecturehours</b>		<b>90-hours</b>
<b>BooksforStudy</b>		
1	L.M.Prasad.HumanResourceManagement,Sultan Chand&Sons, New Delhi,2018	
2	C.B.Memoria,PersonnelManagement,HimalayaPublishingHouse,2018	
<b>BooksforReferences</b>		
1	P.C.Tirupathi,PersonnelManagement &IndustrialRelations,SultanChand&Sons,New Delhi,2016	
2	S.S.Khanka,HumanResourceManagement,S.CHAND,NewDelhi,2016	
3	KeithDarvis,Human Behaviours atwork,McGrawHillHigherEducation,2018	
<b>RelatedOnlineContents</b>		
1	<a href="https://youtu.be/A2HFusWQIeE">https://youtu.be/A2HFusWQIeE</a>	
2	<a href="https://youtu.be/Z3lOca6YVSc">https://youtu.be/Z3lOca6YVSc</a>	
3	<a href="https://youtu.be/EwOtrqEO8wA">https://youtu.be/EwOtrqEO8wA</a>	
4	<a href="https://youtu.be/AHMSNngmwYk">https://youtu.be/AHMSNngmwYk</a>	
CourseDesigned By:		

<b>MappingwithProgrammeOutcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	M	M
<b>CO2</b>	M	M	S	M	S
<b>CO3</b>	S	S	S	S	M
<b>CO4</b>	M	M	S	M	S
<b>CO5</b>	S	S	M	S	M

\*S-Strong;M-Medium;L-Low

Course code	BUSINESS RESEARCH METHODS			L	T	P	C
Core/Elective/Supportive	CORE			4			4
Pre-requisite	Basic knowledge in research and statistical tools is needed			Syllabus Version		2022 onwards	
<b>Course Objectives:</b>							
The Main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Develop an idea about various research designs and techniques.</li> <li>2. Understand Sampling Techniques Of Research And Its applications.</li> <li>3. Emphasis The Learners in application of appropriate tools in research.</li> <li>4. Make The learners understand the significance of testing hypotheses.</li> <li>5. Lay a foundation to become familiar with the style of preparing research reports.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On The Successful completion the course, student will be able to:							
1	Apply a range of quantitative and /or qualitative research techniques in business and management problems/issues			K1 & K2			
2	Organize And Conduct Research Using sampling method			K2			
3	Develop Necessary Critical thinking skills in order to evaluate different statistical tools used in research.			K2 & K3			
4	Demonstrate knowledge and understanding of data analysis and interpretation in relation to the research process by testing hypothesis.			K4			
5	Write A Research Report and thesis.			K5 & K6			
<b>K1-Remember; K2 -Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>							
<b>Unit:1</b>	<b>Introduction</b>			<b>18-hours</b>			
Business Research: Meaning – Scope - Significance – challenges-types-process– Qualities a good researcher–Ethics Problems: Identification-Selection. Hypothesis–Research Design. Research-Research							
<b>Unit:2</b>	<b>Sampling Design</b>			<b>18-hours</b>			
Sampling design: Meaning-Sampling frame- Sampling and Non-Sampling Errors- Type I Error And Type II Error in research- Level of Significance- determination of sample size Methods of sampling. Census: merits and demerits - Census Vs Sampling. Pilot study –Pre test. Primary and Secondary data: Meaning-sources-merits-demerits. Methods Data Collection: Observation-Interview-Survey-Email-Schedule and Questionnaire. Level of measurement: Nominal-Ordinal-Interval Ratio. Scaling techniques: Rating scales-Attitude scales–Likert’s Scale- Guttmans scale-Thurston scale.							
<b>Unit:3</b>	<b>Statistical tools</b>			<b>18-hours</b>			
Statistical tools used in research-Measures of Central tendency – Standard deviation –Correlation–simple, partial and multiple correlation–Autocorrelation–Regression Models– Ordinary Least Square methods–Multiple Regression.							
<b>Unit:4</b>	<b>Testing Of Hypothesis</b>			<b>18-hours</b>			

Testing of Hypothesis-Parametric test: 'Z' test: Test for differences between proportions, difference between Means of two samples- differences between two Standard deviations and testing the correlation coefficient- 't' test: To Test the significance of the mean of a random		
sample, Difference between means of two samples (Independent and paired Samples) testing. Anova: One way ANOVA -Two way ANOVA. Non-parametric test: Chi-square Test - Mann-Whitney 'U' Test-Kruskal-Wallis 'H' Test.		
<b>Unit:5</b>	<b>Interpretation</b>	<b>18-hours</b>
Interpretation: Meaning-Significance. Report writing: Significance – Layout of research report-mechanics of writing a Research report–Precautions to be followed in Research Report-Types of reports-footnotes and bibliography writing; checking plagiarism.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	
Online assignment, Group discussion and seminar		
Activity: SPSS: Introduction-Data Entry:Data view and variable view – storing and retrieving data files- Statistical Menus : Data file handling – generating new variables – running statistical procedures- constructing graphical displays- OUTPUT VIEWER – chart editor.		
	<b>Total Lecture hours</b>	<b>90-hours</b>
<b>Books for Study</b>		
1	Business Research Methods: Emory, 2017	
2	Business Research Methods: Rummel & Ballaine, 2018	
3	Statistical Methods: S.P. Gupta, 2016	
<b>Books for References</b>		
1	Research Methodology: C.R. Kothari, 2019	
2	Methodology of Research in Social Science: Krishnaswami O.R, Ranganathan K, 2019	
3	Research methodology: Paneerselvam, 2019	
<b>Related Online Contents</b>		
1	www.managementstudyguide.com	
2	www.pondiuni.edu.in.	
3	www.modares.ac.ir	
Course Designed By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	M	M
<b>CO2</b>	S	M	S	M	S
<b>CO3</b>	S	S	M	S	M
<b>CO4</b>	M	S	S	M	S
<b>CO5</b>	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Coursecode		<b>OBJECT ORIENTED PROGRAMMING WITH C++</b>	L	T	P	C
Core/Elective/Supportive		<b>CORE</b>	4			4
Pre-requisite		<b>Hands on training in C programming is needed</b>	Syllabus Version		2022 onwards	
<b>Course Objectives:</b>						
The Main objectives of this course are to:						
1. Introduce The elements of object oriented programming and structure of C++ program.						
2. Explain Programming Fundamentals, including statement and control flow and recursion.						
3. Describe Operator Overloading, rules for overloading operators and data conversion, inheritance						
4. Apply The concepts of class, method, constructor, instance, data abstraction, function abstraction, inheritance, overriding, overloading, and polymorphism.						
5. Clarify Virtual Functions And Polymorphism.						
<b>Expected Course Outcomes:</b>						
On The Successful completion the course, student will be able to:						
1	Outline The Essential Features And Elements Of The C++ programming language.		K1 & K2			
2	Understand Concepts Of Inheritance and polymorphism.		K2			
3	Understand the difference between function overloading and function overriding		K2 & K3			
4	Analyze, write, debug and test basic C++ codes using the approaches introduced in the course.		K3 & K4			
5	Incorporate Exception Handling In Object-oriented programs.		K5 & K6			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>				<b>18-hours</b>	
Evaluation of Programming Paradigm – Elements of Object oriented programming -Data Encapsulation and Abstraction classes – Inheritance – Derived classes – Polymorphism –Operator overloading –Friend functions – Polymorphism – virtual functions – Merits and demerits of OOP – Popular OOP languages – C++ at a glance – Applications of C++ - C++ statements – structure of C++ program.						
<b>Unit:2</b>	<b>Datatypes</b>				<b>18-hours</b>	
Data types – character set – Token, Identifiers and Keywords – variables – operators and expressions – Control Flow – IF, IF..Else, Nested If..Else, For Loop, While..loop, do..while loop, break statement, switch statement, continue statement goto statement. Arrays – operations on arrays – Multidimensional arrays – strings – string manipulations. Functions – Function Components – Library Functions – Inline Functions.						
<b>Unit:3</b>	<b>Classes And Objects</b>				<b>18-hours</b>	
Classes and objects – Class specification – class objects – Accessing class members – defining member functions – Data Hiding – Friend functions and friend classes. Constructor – parameterized constructors – destructors – constructor overloading – order of constructor and destructor – copy constructor.						



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<b>Unit:4</b>	<b>Operator over loading</b>	<b>18-hours</b>
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Operator overloading – over loadable operators – Rules for overloading operators – Data Conversion. Inheritance – Forms of inheritance – single, multiple, multi level, hierarchal and hybrid inheritance – when to use inheritance – Benefits of Inheritance.

<b>Unit:5</b>	<b>Virtual functions and Polymorphism</b>	<b>18-hours</b>
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Virtual functions and Polymorphism – need for virtual functions – Pointers to derived class objects – Pure virtual functions – Abstract classes – Rules for Virtual functions – Data file operations – Opening File – closing of file – stream state member functions – reading/writing character from file – structure and file operations – classes and file operations.

<b>Unit:6</b>	<b>Contemporary Issue</b>	<b>90-hours</b>
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Online Assignment, Group Discussion And Seminar

	<b>Total Lecture hours</b>	<b>90-hours</b>
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**Books for Study**

1 | E. Balagurusamy, "Object Oriented Programming with C++", Tata McGraw Hill Publishing Company Ltd. 2016

2 | D. Ravichandran, "Programming with C++", Tata McGraw Hill Publishing Company Ltd. 2016

**Books for References**

1 | K.R. Venugopal, Rajkumar, T. Ravishanker., "Mastering C++", Tata McGraw-Hill publishing Company Ltd 2012

**Related Online Contents**

1 | <https://youtu.be/cgVVZMfLjEI>

2 | <https://youtu.be/Aze8Jt9TkVk>

Course Designed By:

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	M	M	S	M	S
<b>CO3</b>	S	S	M	S	M
<b>CO4</b>	M	M	M	M	S
<b>CO5</b>	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Coursecode		COMPUTER APPLICATIONSPRACTICALS-I I : TALLY & C++TALLY	L	T	P	C
Core/Elective/Supportive					4	4
Pre-requisite		Hands on training in tally and Cprogrammingin UGlevel	Syllabus Version			2022 onwards
<b>TALLY</b>						
1. MASTER CREATION-Ledger & Trial Balance						
2.Inventory statement: LIFO. FIFO, SIMPLE AVERAGE METHOD						
3.Purchase and sales invoice with GST.						
4.Prepare fund flow statement, cash flow statement and present your view.						
5.Accounting Vouchers (min 15 entries) and Day book preparation.						
6.. Prepare Profit & Loss A/C and Balance Sheet						
7.Analyze the performance of an organization by using Ratio (Minimum5Ratiosareessential).						
8.Bank Reconciliation statement						
<b>C++</b>						
7.PayRoll calculation(Usingsimpleprogram)						
8.FindoutEOQ,Minimum Level,MaximumLevel,Re-orderlevel(Usingsimpleprogram)						
9.Write a c++ program to calculate working capital using class and objects (memberfunction shouldwriteinsideandoutsidetheclass)						
10.Programto calculate contribution, P/vRatio,BEP andMargin ofsafetyusingFunctions.						
.						
11CalculateDepreciation – byusingconstructorsand Destructors						
.						
12.Writeac++programto preparecostsheetusinginheritance.						

Coursecode		<b>COST AND MANAGEMENT ACCOUNTING</b>	L	T	P	C
<b>Core/Elective/Supportive</b>		<b>CORE</b>	<b>4</b>		<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic Knowledge In Cost Sheet And Ratio Analysis</b>	<b>Syllabus Version</b>			<b>2021-22 &amp; 2022 onwards</b>
<b>CourseObjectives:</b>						
The main objectives of this course are to enable the students to						
1. Be familiar with the components of cost.2.give an insight into methods of cost.						
3. Understand the budgeting and budgetary control.						
4. Be aware of the funds flow and cash flow statements.						
5. Give An Insight Into Financial Statement Analysis.						
<b>ExpectedCourseOutcomes:</b>						
On The Successful completion of the course, student will be able to:						
1	Recall The Components Of cost			K1		
2	Classify And Compare The Methods Of cost			K2		
3	Construct Different Types of budget			K3		
4	Apply Different cost variances and solve the adverse situations			K3&K6		
5	Analyze The Financial statements of a company			K4		
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>			<b>18hrs</b>		
CostAccounting–Meaning–Definition–DifferencebetweenFinancialandCostAccounting–Importance of CostAccounting–Relationship between Cost And Management Accounting – Methods of Costing – Elements of Cost – Cost Concepts –preparationofCostSheet–MaterialControl–Fixation Of Stock levels–E.O.Q-Pricing material issues – inventoryControl.						
<b>Unit:2</b>	<b>LabourCost</b>			<b>18hours</b>		
Labour Cost – Methods of Wage payment – Incentive Systems – idle time –over-time –labour Turnover – Causes of Labour Turnover – overheads – allocation and absorption of overheads.						
<b>Unit:3</b>	<b>RatioAnalysis</b>			<b>18hours</b>		
NatureandScopeofManagementaccounting–Meaning–Objectives–Importance–limitations –Financial Statement Analysis–Ratio Analysis–Uses and limitations of Ratios.						
<b>Unit:4</b>	<b>FinancialStatementAnalysis</b>			<b>18hours</b>		
FundsFlowandCashFlowstatements,WorkingCapitalManagement						
<b>Unit:5</b>	<b>Budgeting</b>			<b>18hours</b>		

Cost – Volume – Profit Analysis – marginal costing – Break Even Analysis – Managerial application of Marginal Costing – significance – limitations – Budgeting And Budgetary Control – Preparation of Budgets – Material Procurement – Production – Sales – Flexible and Cash budgets.	
	<b>Total Lecture hours</b>
	<b>90 hours</b>

<b>Books for Study</b>	
1	N.K.Prasad, principles & Practice of Cost accounting, Book Syndicate. 2018
2	Bierman & Drebeng, Managerial Accounting, Macmillan. 2016
3	L.M.Pandey, Managerial Accounting, Vikas Pub House. 2015

<b>Books for References</b>	
1	Advanced Cost Accounting, Jarn & Narang, Kalyani Pub. 2016
2	Management Accounting and Financial Control, S.N. Maheswari, Sultan Chand. 2013
3	Hobert N. Aanthony, Management Accounting – Text and Cases, Irwin. 2019

<b>Related Online Contents</b>	
1	<a href="https://www.youtube.com/watch?v=Paecdg2_fb4">https://www.youtube.com/watch?v=Paecdg2_fb4</a>

<b>Mapping with Programme Outcomes</b>					
COs	PO1	PO2	PO3	PO4	PO5
<b>CO1</b>	M	M	M	L	L
<b>CO2</b>	M	M	M	M	M
<b>CO3</b>	M	M	M	M	M
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	M	M	M	M	M

Coursecode	VISUAL BASIC			L	T	P	C
Core/Elective/Supportive	CORE			4			4
Pre-requisite	Basic Understanding About Computer And Visual Components.			Syllabus Version		2021-22 & 2022 onwards	
<b>Course Objectives:</b>							
The Main objectives of this course to enable the students to							
1. Introduce Different Forms Of Visual							
2. Explore Different Forms intrinsic controls							
3. Understand Expert Idea About visual variable and procedure.							
4. Gain Expert Knowledge About Database.							
5. Describe Different Type of data report							
<b>Expected Course Outcomes:</b>							
On The Successful completion of the course, student will be able to:							
1	Recall Various Form Of Visuals					K1	
2	Understand Different Types Of intrinsic controls					K2	
3	Expert Knowledge about visual variable and procedure.					K3 & K4	
4	Analyze The Method of database working.					K3 & K4	
5	Evaluate Different Types Of Data report					K5 & K6	
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6-Create</b>							
<b>Unit:1</b>	<b>Introduction</b>			<b>18-hours</b>			
First steps with Microsoft VB6: Integrated Development Environment - First program in VB - Introduction to forms: Common properties, methods and events.							
<b>Unit:2</b>	<b>Intrinsic Controls</b>			<b>18-hours</b>			
Intrinsic Controls: Text box controls, Label and frame controls, command button, check box and option button controls, list box and combo controls, picture and image controls, drive list box, dir-list box and file list box control and other controls, control arrays.							
<b>Unit:3</b>	<b>Variables and Procedures</b>			<b>18-hours</b>			
Variables & Procedures: Scope & Lifetime of variables, native datatypes, aggregate datatypes - Arrays - VB for application and VB libraries: Control flow, Working with numbers, Strings, Date and Time.							
<b>Unit:4</b>	<b>Databases</b>			<b>18-hours</b>			
Databases: Data access SAGA, VB Data Base Tools, ADO Data Binding, Data Environment designer, crash course in SQL. Database Programming: ADO at work - setting up a connection, Processing data.							
<b>Unit:5</b>	<b>Tables And Reports</b>			<b>18-hours</b>			
Tables and Reports - Data grid control, Flex grid control, Data Report - Data Report Designer.							
			<b>Total Lecture hours</b>			<b>90-hours</b>	
<b>Books for Study</b>							
1	Visual Basic 6 Programming, Black Book - Steven Holzner, Dreamtech Press Publisher, New Delhi 2016						

2	VisualBasic6–HowtoProgram,H.M.Deitel.,P.J.DeitalandT.R.Nieto2015
<b>BooksforReferences</b>	
1	ProgrammingMicrosoftVisualBasic-Francesco Balenda,WPPublicationsand Distributors.2016
2	VisualBasic6-Gary Cornell, Tata McGraw Hill Publishing Company Ltd 2019
<b>RelatedOnlineContents</b>	
1	<a href="https://www.youtube.com/watch?v=gcFHyVYdeFU">https://www.youtube.com/watch?v=gcFHyVYdeFU</a>
2	<a href="https://www.youtube.com/watch?v=3FkWddODLno">https://www.youtube.com/watch?v=3FkWddODLno</a>
3	<a href="https://www.youtube.com/watch?v=dyrdG3ExZvA">https://www.youtube.com/watch?v=dyrdG3ExZvA</a>
CourseDesigned By:	

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	M	M	L	L
<b>CO2</b>	M	M	M	M	M
<b>CO3</b>	M	M	M	M	M
<b>CO4</b>	S	S	S	S	S
<b>CO5</b>	M	M	M	M	M

Course code	FINANCIAL MANAGEMENT		L	T	P	C
Core/Elective/Supportive	CORE		4			4
Pre-requisite	Understanding about finance, management and source of finance.		Syllabus Version		2021-22 & 2022 onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to enable the students to						
1. Understand the concept and importance of financial management.						
2. Identify various sources of long-term and short-term finance.						
3. Understand various method and technique for calculating cost of capital.						
4. Know different types leverages used by the organization.						
5. Understand various dividend policies followed by organization.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Recollect the concept and importance of financial management.		K1			
2	Have thorough knowledge about various sources of long-term and short-term finance.		K2			
3	Examine various method and technique for calculating cost of capital.		K3			
4	Examine different type leverage technique followed by a organization.		K4&K5			
5	Expert knowledge about various dividend policies.		K5&K6			
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>						
<b>Introduction</b>						
Financial Management - Meaning, Nature, scope and objectives–Role and functions of Financial Management–Financial decisions–relationship between Risk and Return–Sources of finance–Short-term and Long-term finance.						
<b>Unit:2</b>						
<b>Cost of Capital</b>						
<b>18- hours</b>						
Cost of Capital-Meaning and importance–Cost of Debt, Preference, Equity and Retained Earnings– Weighted Average Cost of capital–Capital budgeting–Techniques – ROI, Payback period and Discounted cash flow.						
<b>Unit:3</b>						
<b>Leverages</b>						
<b>18- hours</b>						
Leverages - Financial Leverage– Operating leverage–EBIT and EPS analysis–Theories of Capital Structure – Net income approach– Net operating income Approach. MM Hypothesis – Determinants of capital structure–Capitalization –Over and Under Capitalization- Merits and Demerits.						
<b>Unit:4</b>						
<b>Dividend Theories</b>						
<b>18- hours</b>						
Dividend Theories: Walter’s model – Gordon and MM’s models –Dividend policy -Forms of Dividend – Determinants of dividend policy.						
<b>Unit:5</b>						
<b>Working Capital Management</b>						
<b>18- hours</b>						
Working Capital Management–Cash Management–Receivables Management–Inventory Management – Financial management of public sector undertakings – Budget- Accounting – Financial Decision						
<b>Total Lecture hours</b>						
<b>90- hours</b>						

<b>Books for Study</b>	
1	Financial Management – Prasanna Chandra 2016
2	Financial Management – I.M.Pandey, 2016
3	Financial Management – Khan & Jain 2018

<b>Books for References</b>	
1	Financial Management-S.N.Maheswari 2015
2	Principles of Managerial Finance-L.J.Gitman and Dr.M.Manickam 2016
3	Financial Management- Sharma and Shashi K.Gupta 2018

<b>Related Online Contents</b>	
1	<a href="https://www.youtube.com/watch?v=SkygviP28Ho">https://www.youtube.com/watch?v=SkygviP28Ho</a>
2	<a href="https://www.youtube.com/watch?v=4i0jNDzCOE">https://www.youtube.com/watch?v=4i0jNDzCOE</a>
3	<a href="https://www.youtube.com/watch?v=lEu8TrIjVV8">https://www.youtube.com/watch?v=lEu8TrIjVV8</a>
4	<a href="https://www.youtube.com/watch?v=wRRM0EWGBYU&amp;t=6s">https://www.youtube.com/watch?v=wRRM0EWGBYU&amp;t=6s</a>

Course Designed By:

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	M	L	M	S
<b>CO2</b>	S	S	S	M	M
<b>CO3</b>	S	S	S	M	M
<b>CO4</b>	S	S	S	M	L
<b>CO5</b>	M	M	M	M	M



**COMPUTER APPLICATIONS PRACTICAL III–VB**

**Practical List (Visual Basic) Visual Basic**

1. Write a VB program to use the Menu Editor for adding a picture and also increase and decrease the height and width of the image box, option button & checkbox.
2. Write a VB program to prepare a payslip.
3. Write a VB program to calculate depreciation.
4. Write a VB program to calculate Various Leverages.
5. Write a VB program to find the PV and FV using Financial Functions.
6. Write a VB program to use MDI Form and include the image list control.
7. Write a VB program to find the currency conversion.
8. Program to compute cost of capital using Finance function.
9. Program To Design advertisement copy using Image and Picture, File, Drive and Directory.
10. Program To prepare Capital Budgeting Option Button and box.
11. Design a form to link it with inventory management table from database.
12. Design a form using option button, combo box, and list box for preparing a supermarket bill.
13. Program to create customer databases and prepare reports using Flex Grid control and common control.
14. Program to create student databases and prepare reports using ADO control and common control.

Coursecode	INVESTMENT MANAGEMENT		L	T	P	C
Core/Elective/Supportive	CORE		4			4
Pre-requisite	Basic understanding about investment and portfolio management.		Syllabus Version	2021-22 & 2022 onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to enable the students to						
1. Provide a general understanding about investment avenues and personal finance.						
2. Give a broader understanding about behavioral finance and how to equipto decide personal investment.						
3. Understand the characteristics of securities markets and the instruments traded therein.						
4. Give a broader understanding about fundamental and technical analysis.						
5. Analyze risk and return of securities and manage portfolios of investment.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Recall Various Investment Avenues And Personal finance.		K1			
2	Understand Securities Markets, regulation and its instruments		K2			
3	Examine fundamental analysis of an organization using financial data information.		K3 & K4			
4	Examine technical analysis of an organization using financial data information.		K3 & K4			
5	Evaluate Risk Return Of Securities in different investment proposal.		K5 & K6			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>		<b>18-hours</b>			
Nature, Meaning and scope of Investment – Importance of Investment – Factors Influencing Investment – Investment media – Features of investment Programme – Investment Process – Development of Financial system in India.						
<b>Unit:2</b>	<b>Capital Market</b>		<b>18-hours</b>			
Capital Market, Capital Market – New issue Market and stock exchange in India – B.S.E – N.S.E – Kinds of Trading activity – Listing of Securities – SEBI and its Role and guidelines. Returns: Measurement – Traditional Technique – Holding period- Yield- Probability Distributions – Statistical Methods. Risk: Systematic and unsystematic-Methods.						
<b>Unit:3</b>	<b>Fundamental and Technical Analysis</b>		<b>18-hours</b>			
Fundamental and Technical Analysis – Security evaluation – Economic Analysis – Industry Analysis – Company Analysis – Technical Analysis – behavioral finance.						
<b>Unit:4</b>	<b>Investment Alternatives</b>		<b>18-hours</b>			
Investment Alternatives – Investment in Bonds, Equity Shares, Preference shares, Government Securities – Mutual Funds – Real Estate – Gold – Silver – Provident Fund – Unit Trust – The Post Office Savings Scheme – LIC.						
<b>Unit:5</b>	<b>Portfolio Management</b>		<b>18-hours</b>			

Portfolio Management–Nature, Scope–SEBI Guidelines to Portfolio Management–Portfolio Investment Process–Elements of Portfolio Management–Portfolio Revision–Needs and Problems–Capital Asset Pricing Model (CAPM)		
	<b>Total Lecture hours</b>	<b>90-hours</b>
<b>Books for Study</b>		
1	Investment Management - Francis Cherunilam 2018	
2	Investment Management - Khan and Jain 2016	
3	Investment Management - Preeti Singh 2019	

<b>Books for References</b>		
1	Investment Management - V.K. Bhalla 2016	
2	Investment Management - Dr. R.P. Rustogi 2019	
3	Investment Management - Radha and Panameshwaran 2019	
4	Investment Management – Avadhanl 2018	
<b>Related Online Contents</b>		
1	<a href="https://www.youtube.com/watch?v=jAOWf4Zef2E">https://www.youtube.com/watch?v=jAOWf4Zef2E</a>	
2	<a href="https://www.youtube.com/watch?v=ope5Y3Mrsaw">https://www.youtube.com/watch?v=ope5Y3Mrsaw</a>	
3	<a href="https://www.youtube.com/watch?v=8TJQhQ2GZ0Y">https://www.youtube.com/watch?v=8TJQhQ2GZ0Y</a>	
4	<a href="https://www.youtube.com/watch?v=_fLlS50rf-k">https://www.youtube.com/watch?v=_fLlS50rf-k</a>	
Course Designed By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	M	S	L	M	S
<b>CO3</b>	S	M	S	M	S
<b>CO4</b>	S	S	S	L	M
<b>CO5</b>	S	M	S	M	S

\*S-Strong; M-Medium; L-Low

Coursecode		DIRECT TAXES	L	T	P	C
Core/Elective/Supportive		CORE	4			4
Pre-requisite		Basic Understanding Of Income Tax Practice And law	Syllabus Version			2021-22 & 2022 onwards
<b>CourseObjectives:</b>						
The main objective of this course are to enable the students to						
<ol style="list-style-type: none"> <li>1. Enable students to understand computation of taxable income for various entities.</li> <li>2. Acquaint The Students With The Concepts Of Tax administration.</li> <li>3. Impart deep knowledge about the latest provisions of income tax act.</li> <li>4. Develop application and analytical skill of the provisions of income tax law for income tax planning and management.</li> <li>5. Educate learners about procedure for assessment and e-filing.</li> </ol>						
<b>ExpectedCourseOutcomes:</b>						
On The Successful Completion of the course, student will be able to:						
1	Calculate Computation Of taxable income under various sources.		K4&K5			
2	Recollect The Concept Of Tax Administration And Practices.		K1&k2			
3	Acquire The knowledge about the latest provision of income tax act.		K3			
4	Gain expert knowledge regarding the legitimate way of tax planning and management.		K6			
5	Able To pertain procedure for assessment and e-filing.		K3&k6			
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>		<b>18-hours</b>			
Income Tax Act–Definition–Income–Agricultural Income–Assessee–Previous year–Assessment year–Residential status–Scope of Total Income–Capital and Revenue–Receipts and Expenditure–Exempted Incomes.						
<b>Unit:2</b>	<b>Computation of Income</b>		<b>18-hours</b>			
Computation Of Income from Salaries and Income from House property.						
<b>Unit:3</b>	<b>Computation of Profits and Gains</b>		<b>18-hours</b>			
Computation Profits and Gains of Business or profession–Calculation Capital gain.						
<b>Unit:4</b>	<b>Computation of Income from other sources</b>		<b>18-hours</b>			
Computation of Income from other sources–Set-Off and Carry Forward Losses–Deduction from Gross Total Income–Assessment of Individuals.						
<b>Unit:5</b>	<b>Income Tax Authorities</b>		<b>18-hours</b>			
Income Tax Authorities–Procedure for Assessment–Collection Tax–Procedure of e-filing.						
		<b>Total Lecture hours</b>	<b>90-hours</b>			
<b>Books for Study(s)</b>						
1	Direct Taxes-B.B.Lal					
2	Income Tax Law & Practice-Gaur & Narang					

3	IncomeTaxLaw&Practice-Dr.H.C.Mehorotra

<b>BooksforReferences</b>	
1	TaxLaws-DingarPagare
2	IncomeTax -BhagavathiPrasad
3	
<b>RelatedOnlineContents</b>	
1	<a href="https://www.youtube.com/watch?v=2PTQ7zQ1hv8">https://www.youtube.com/watch?v=2PTQ7zQ1hv8</a>
2	<a href="https://www.youtube.com/watch?v=saOtcilW1FY">https://www.youtube.com/watch?v=saOtcilW1FY</a>
3	<a href="https://www.youtube.com/watch?v=Qgt8I3Pqg-Q">https://www.youtube.com/watch?v=Qgt8I3Pqg-Q</a>
4	<a href="https://www.youtube.com/watch?v=lrEneCa7gFI">https://www.youtube.com/watch?v=lrEneCa7gFI</a>
CourseDesigned By:	

<b>MappingwithProgrammeOutcomes</b>					
COs	PO1	PO2	PO3	PO4	PO5
<b>CO1</b>	S	S	S	S	M
<b>CO2</b>	S	M	S	S	S
<b>CO3</b>	M	S	M	M	M
<b>CO4</b>	S	M	S	S	M
<b>CO5</b>	S	S	M	S	M

\*S-Strong;M-Medium;L-Low

Coursecode		JAVA PROGRAMMING AND HTML	L	T	P	C
Core/Elective/Supportive		CORE	4			4
Pre-requisite		Basic knowledge on JAVA PROGRAMMING AND HTML	Syllabus Version			2021-22 & 2022 onwards
<b>Course Objectives:</b>						
The Main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Acquaint the students with the basic concepts of JAVA programming.</li> <li>2. Understanding The Principles Of Creating An Effective webpage.</li> <li>3. Understand Object Oriented Programming Concept.</li> <li>4. Help The Student To insert heading levels within a webpage.</li> <li>5. Train To create head and body section in HTML page.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On The Successful Completion Of The Course, student will be able to:						
1	It Help to understand the concept of Java and HTML				K2	
2	Be able to understand the difference between object oriented programming and procedural oriented language				K3	
3	To familiarize the students with language environment and to implement various concepts related to language.				K3	
4	It help the student to understand basic concept about control statements and trends.				K5	
5	Understand how to insert the heading levels within a webpage and insert ordered and unordered lists within a web page.				K2	
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>				<b>18Hours</b>	
History of java-Java features-Java and internet-Java and www-Java language: Introduction- Simple java program structures-JVM						
<b>Unit:2</b>	<b>Constants</b>				<b>18Hours</b>	
Constants-Variables-Data types-Arithmetic, relational, logical, assignment operators-if,if...else, else...if ladder-while, do, for-jumps in loops-Defining a class-Creating objects-Method declaration-fields declaration.						
<b>Unit:3</b>	<b>Array</b>				<b>18Hours</b>	
One dimensional array-creating an array-Strings-Multiple Inheritance-Creating threads-Extending thread classes-Stepping and blocking in a thread-Life cycle of thread.						

<b>Unit:4</b>	<b>HTML</b>	<b>18Hours</b>
HTML-History of HTML-HTML generation-HTML documents- Anchortag- Hyperlinks Sample HTML documents		
<b>Unit:5</b>	<b>WebpageComment</b>	<b>18Hours</b>
Headandbodysection-Headersection-Title-Prologue-Links-ColourfulwebpageCommentline -SampleHTMLdocuments-Lists-Ordered lists-Unordered lists-Nested lists.		
<b>Unit:6</b>	<b>Contemporary issues</b>	
Online assignments, workshop, test		
	<b>TotalLecturehours</b>	<b>90Hours</b>
<b>TextBook(s)</b>		
1	Programming With Java-A Primer-E.Balagurusamy, TMH Publications, 3rd Edition.	
2	WorldWideWeb design with HTML-C.XavierTMH Publications, 2000.	
3		
<b>ReferenceBooks</b>		
1	The Complete Reference Java2- Patrick Naughton and Herbert Schildt , 3rd Edition TMH Publications, 2000.	
2	Programming With Java 2-C.Xavier, Scitech Publications, 2000.	
3		
<b>RelatedOnlineContents</b>		
1	<a href="https://www.youtube.com/watch?v=uWYPVz_i7W4">https://www.youtube.com/watch?v=uWYPVz_i7W4</a>	
2	<a href="https://www.youtube.com/watch?v=hBh_CC5y8-s">https://www.youtube.com/watch?v=hBh_CC5y8-s</a>	
3	<a href="https://www.youtube.com/watch?v=-G7bJVAIiEI">https://www.youtube.com/watch?v=-G7bJVAIiEI</a>	
4	<a href="https://www.oracle.com/topics/technologies/newtojava/programming-center.html#Training">https://www.oracle.com/topics/technologies/newtojava/programming-center.html#Training</a>	
Course Designed By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	S	S
<b>CO2</b>	M	S	L	M	S
<b>CO3</b>	S	M	S	M	S
<b>CO4</b>	S	S	S	L	M
<b>CO5</b>	S	M	S	M	S

\*S-Strong; M-Medium; L-Low





<b>Course Code</b>		<b>SERVICES MARKETING</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>ELECTIVE</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>		<b>BasicknowledgeonserviceMarketing</b>	<b>Syllabus Version</b>			<b>2022 onwards</b>
<b>CourseObjectives:</b>						
The Main objectives of this course are to enable the students to:						
<ol style="list-style-type: none"> <li>1. Understand The concepts of service marketing management.</li> <li>2. Learn about service marketing processes for different types of products and services.</li> <li>3. Understand The tools used by marketing managers in decision situations.</li> <li>4. Know More About marketing mix for selected marketing services.</li> <li>5. Get insights on Service Quality.</li> </ol>						
<b>ExpectedCourseOutcomes:</b>						
On The Successful completion the course,student will be able to:						
1	Examine The Nature Of Services,and distinguish between products and services					K2
2	Identify The Major elements needed to improve the marketing of services					K4
3	Develop an understanding of the roles of relationship marketing and customer service adding value to the customer's perception of a service					K4
4	Examining The Key Marketing Services and market segmentation					K4
5	Evaluating service quality, measurement, causes and problems, principles guiding improving of quality					K5
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6-Create</b>						
<b>Unit:1</b>	<b>Introduction</b>					<b>18hours</b>
Services:-Meaning And Definition Inservices–Importance of services India Environment – Classification of services – Characteristic features of services – Growth of the service sector–Economic policy on services – Differences between goods and services.						
<b>Unit:2</b>	<b>ServiceMarketing</b>					<b>18hours</b>
ServiceMarketing:-Concept–Significance–Customer'sexpectationinServiceMarketing–Managing Demand and supply in service business.						
<b>Unit:3</b>	<b>MarketingMix</b>					<b>18hours</b>
MarketingMixforServices–Marketing Mix Of Selected Services:-PersonalcareMarketing – Entertainment Marketing – Education Marketing – Communication Marketing –ElectricityMarketing.						
<b>Unit:4</b>	<b>KeyServices</b>					<b>18-hours</b>

Key Services Marketing:- Banking services – Insurance services – Transport services –Tourism Services–Hotelservices-Consultancyservices–Hospital services-Marketsegmentation.

<b>Unit:5</b>	<b>ServiceQuality</b>	<b>16hours</b>
Service Quality: - Introduction – Measurement of Service Quality – Scope of ServiceQuality–ToolsforachievingServiceQuality–Causes serviceQuality–Problems–Principles Guiding Improving Of service quality.		
<b>Unit:6</b>	<b>ContemporaryIssue</b>	<b>2hours</b>
Online Assignment And Online Seminar		
<b>TotalLecturehours</b>		<b>90hours</b>
<b>BooksforStudy</b>		
1	ServicesMarketing -P.N.Reddy,H.R.Appannaiah,S.AnilKumar,Nirmala.2017	
2	ServicesMarketing -S.M.Jha. 2010	
<b>BooksforReferences</b>		
1	ServicesMarketing -Dr.S.Shajahan.2018	
2	ServicesMarketing– Dr.P.Natarajan,2019	
<b>RelatedOnlineContents</b>		
1	<a href="https://youtu.be/GhFpvXsmBXY">https://youtu.be/GhFpvXsmBXY</a>	
2	<a href="https://youtu.be/MnsVEKEqVoM">https://youtu.be/MnsVEKEqVoM</a>	
CourseDesigned By:		

<b>Mapping with Program Outcomes</b>					
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	M	M	M	S
<b>CO2</b>	M	S	M	S	S
<b>CO3</b>	S	S	S	S	S
<b>CO4</b>	M	S	S	M	M
<b>CO5</b>	S	M	S	M	S

\*S-Strong;M-Medium;L-Low

Course Code	MARKETING OF FINANCIAL SERVICES		L	T	P	C
Core/Elective/Supportive	ELECTIVE		4			4
Pre-requisite	Basic knowledge on Financial Services		Syllabus Version		2022 onwards	
<b>Course Objectives:</b>						
<p>The Main objectives of this course to enable the students to</p> <ol style="list-style-type: none"> <li>1. Develop and expand knowledge in the overall marketing environment of financial service.</li> <li>2. Understand The key issues and future trends that surround financial service marketing</li> <li>3. Be familiar with the nature and scope of various types of financial services.</li> <li>4. Know About Various Services Related to insurance and its policies.</li> <li>5. Referring Various Real estate industry about their classification and its mechanism.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On The Successful Completion Of The Course, student will be able to:						
1	Understand how marketing theory underpins the marketing of financial services		K2&K6			
2	Appreciate How Recent thinking in marketing and services marketing applies to financial services		K3			
3	Identify Key Issues for marketers of financial services		K4			
4	Interpretation of various reforms and types of insurance services related to life insurance		K2			
5	Discussing about the concepts based on real estate industry and her investment pattern in markets, securitization mechanism in India.		K6			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>						
<b>Unit:1</b>	<b>Financial Market India</b>		<b>18hours</b>			
Financial Market in India – Financial Sector Reforms – Money Market – Capital Market – Bond Market – Types of Bonds.						
<b>Unit:2</b>	<b>Stock Exchanges</b>		<b>18hours</b>			
Stock Exchanges – Objectives of NSE – Bombay Stock Exchange (BSE) – OTCEI.						
<b>Unit:3</b>	<b>Plastic Cards</b>		<b>18hours</b>			
Plastic cards – Types of Card – Current Trends in Credit Card Industry – Benefits of Plastic Cards – Disadvantages of Plastic Cards. Bancassurance – Benefits of Bancassurance – Distribution Channels in Bancassurance – Success Of Bancassurance.						
<b>Unit:4</b>	<b>Insurance Services</b>		<b>18-hours</b>			

Insurance Services – Insurance Sector Reforms – Types of Insurance Companies – Need of Insurance – Types of Insurance Policies – Role of Life Insurance.		
<b>Unit:5</b>	<b>Real Estate Industry</b>	<b>16 hours</b>
Real Estate Industry – Concept – Classification – Benefit of Real Estate Investment – Developments in the Indian Real Estate Markets. Securitization: Mechanism of Securitization – Advantages Of Securitization – Securitization in India		
<b>Unit:6</b>	<b>Contemporary Issue</b>	<b>2 hours</b>
Online Assignment And Online Seminar		
	<b>Total Lecture hours</b>	<b>90 hours</b>
<b>Books for Study</b>		
1	Financial Services - Nalini Prava Tripathy, 2017	
2	Financial Institutions and Markets - L.M. Bole 2010	
3		
<b>Books for References</b>		
1	Financial Markets & Institutions - Frederic S. Mishkin 2017	
2	Financial Markets & Institutions – Gordon and Natarajan, 2019	
<b>Related Online Contents</b>		
1	<a href="https://youtu.be/MsPgw4FodgE">https://youtu.be/MsPgw4FodgE</a>	
2	<a href="https://youtu.be/qSPDtYWIKVU">https://youtu.be/qSPDtYWIKVU</a>	
3	<a href="https://youtu.be/-qvrRRTBYAk">https://youtu.be/-qvrRRTBYAk</a>	
Course Designed By:		

Mapping with Program Outcomes					
Cos	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	M	M
CO2	S	M	S	M	S
CO3	M	S	S	S	M
CO4	M	M	S	S	S
CO5	S	S	M	M	S

\*S-Strong; M-Medium; L-Low

Coursecode	MARKETING OF HEALTH SERVICES			L	T	P	C
Core/Elective/Supportive	ELECTIVE			4			4
Pre-requisite	Basic Knowledge On Health Services			Syllabus Version		2022 onwards	
<b>CourseObjectives:</b>							
The Main objective of this course are to enable the students to							
<ol style="list-style-type: none"> <li>1. Understand Healthcare Decision Making</li> <li>2. Develop Skills In Applying Marketing Strategies</li> <li>3. Predict the environmental trends and opportunities in the health sector.</li> <li>4. Comparing Various Online Health Services Related to clinical healthcare.</li> <li>5. Assessing various rights and legal aspects related to consumer protection and safety measures.</li> </ol>							
<b>ExpectedCourseOutcomes:</b>							
On The Successful Completion of the course, student will be able to:							
1	Understand and critically and effectively apply a number of tools available to marketing managers in healthcare sector					K2	
2	Appreciate and exercise critical judgment in implementing the marketing strategies in the healthcare sector					K5	
3	Analyse Real-life situations and provide solutions to challenges					K6	
4	Assessing various online critical judgment in implementing the marketing strategies in the healthcare sector					K5	
5	Adapting various legal systems related to consumer rights & protection, promotion agencies and food nutrition's in India					K6	
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6–Create</b>							
<b>Unit:1</b>	<b>Marketing Plan For Services</b>					<b>18hours</b>	
Marketing Plans for services: process, strategy formulation, resource allocation and monitoring services communications- customer focused services- service quality- SERV QUAL model.							
<b>Unit:2</b>	<b>Hospital services</b>					<b>18hours</b>	
Hospital Services-Selecting Health Care Professionals-Emerging trends Medicare Marketing Medicare– Thrust areas for Medicare services.							
<b>Unit:3</b>	<b>Marketing Mix for Hospitals</b>					<b>18hours</b>	
Marketing Mix for Hospitals-Product Mix-Promotion Mix-Price Mix-Place Mix Strategic Marketing for Hospitals.							
<b>Unit:4</b>	<b>Online Health Services</b>					<b>18hours</b>	

OnlineHealthServices-Organization OnlineHealthCareBusiness-On-lineMarketingand On-line financial & clinical transaction.		
<b>Unit:5</b>	<b>Legalsystem</b>	<b>16hours</b>
Legal System:ConsumerRights&Protection,medicine safety rules-Food Nutrition Security India -Health Promotion Agencies.		
<b>Unit:6</b>	<b>ContemporaryIssue</b>	<b>2hours</b>
Online Assignment And Online Seminar		
	<b>TotalLecturehours</b>	<b>90hours</b>
<b>BooksforStudy</b>		
1	MarketingHealthServices:Richard.K.Thomas	
2	ServiceMarketing:S.M.Jha, 2017	
3	ChangingTrends inHealth &Nutrition : Sujata,K.Dass, 2016	
4	TeachingToday"sHealth:DavidJ.AnsPaugh&GeneEzell,2015	
<b>BooksforReferences</b>		
1	MarketingforHealthservices:Aframeworkforcommunications,evaluation&TotalQuality Management:RodSheaff,2015	
2	ServiceMarketing:HelenWoodruffe,2018	
3	ServiceMarketing:P.K.Sinha&S.C.Sahoo, 2016	
<b>RelatedOnlineContents</b>		
1	www.courseerra.org	
2	www.edx.org	
CourseDesigned By:		

Mapping with Program Outcomes					
Cos	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	S	S	M
CO3	M	S	S	M	S
CO4	M	S	S	S	M
CO5	S	S	M	S	S

\*S-Strong;M-Medium;L-Low

Course Code	TRAVEL AND HOSPITALITY SERVICES			L	T	P	C
Core/Elective/Supportive	ELECTIVE			4			4
Prerequisite	Basic Knowledge On Hospitality Services			Syllabus Version	2022 onwards		
<b>Course Objectives:</b>							
<p>The main objectives of this course are to enable the students to :</p> <ol style="list-style-type: none"> <li>1. Understand Structure, nature and operating characteristics of the different sectors of the hospitality industry: food service, lodging and tourism</li> <li>2. Obtain Appreciation For Various Functions Of management and their interrelationships with other key concerns of managers such as marketing, finance and human resource management</li> <li>3. Identify the role of managers in the hospitality industry and to highlight their principal responsibilities.</li> <li>4. Make Understand the classification of hotels by physical characteristics.</li> <li>5. Summarize hospitality services and behavioral profile of users related to hotel marketing indian perspective.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On The Successful completion of the course, student will be able to:							
1	Apply Relevant technology for the production and management of travel and hospitality experiences.			K1			
2	Plan, lead, organize and control resources for effective and efficient travel and hospitality operations.			K2			
3	Create, apply, and evaluate marketing strategies for travel and hospitality destinations and organizations.			K3			
4	Discussing about various hospitality services and its classification of hotels by price level.			K6			
5	Examining The Various Behavioral profile of users and related to hotel marketing indian perspective.			K4			
<b>K1-Remember; K2-Understand; K3 -Apply; K4-Analyze; K5-Evaluate; K6–Create</b>							
<b>Unit:1</b>	<b>Introduction</b>			<b>18hours</b>			
Tourism: Concept-Nature Tourism: Significance of Tourism – Classification – Tourism in India – Future of Tourism – Basic and Geographical Components of Tourism – Definitions of Tourist and Foreign Tourist – Elements of Tourism.							
<b>Unit:2</b>	<b>Tourist Destination</b>			<b>18hours</b>			
India – A Tourist Destination- Tourism Marketing: the concept – users of Tourism Services – Product Planning and Development – Market Segmentation for Tourism – Marketing Information System for Tourism							
<b>Unit:3</b>	<b>Marketing Mix for Tourism</b>			<b>18hours</b>			

Marketing Mix for Tourism – the Product Mix – Promotion Mix – Price Mix – the Place Mix – the people – Tourism Marketing in Indian Perspective.

<b>Unit:4</b>	<b>Hospitality Services</b>	<b>18-hours</b>
Hospitality Services: Hotels – classification of hotels by price level.		
<b>16hours</b>		
<b>Unit:5</b>	<b>Behavioural Profile Of users</b>	
Behavioural Profile Users – Market Information System for Hotels – Product Planning and Development – Marketing Mix for Hotels – Hotel Marketing Indian Perspective.		
<b>Unit:6</b>	<b>Contemporary Issue</b>	<b>2hours</b>
Online Assignment And Online Seminar		
<b>Total Lecture hours</b>		<b>90hours</b>
<b>Books for Study</b>		
1	Tourism and Travel Management – Bishwanath Ghosh, 2017	
2	International Tourism Management – A.K. Bhatia, 2016	
<b>Books for References</b>		
1	Services Marketing – S.M. Jha, 2014	
2	Services Marketing – Dr. P. Natarajan, 2019	
<b>Related Online Contents</b>		
1	<a href="https://youtu.be/MsPgw4FodgE">https://youtu.be/MsPgw4FodgE</a>	
2	<a href="https://youtu.be/qSPDtYWIKVU">https://youtu.be/qSPDtYWIKVU</a>	
3	<a href="https://youtu.be/-qvrRRTBYAk">https://youtu.be/-qvrRRTBYAk</a>	
Course Designed By:		

<b>Mapping with Program Outcomes</b>					
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	S	S	S	M
<b>CO2</b>	S	S	M	M	S
<b>CO3</b>	M	M	S	S	S
<b>CO4</b>	S	S	M	M	S
<b>CO5</b>	M	S	S	M	M

\*S-Strong; M-Medium; L-Low



Course Code	FUTURESANDOPTIONS		L	T	P	C
Core/Elective/Supportive	ELECTIVE		4			4
Prerequisite	Basic knowledge on Derivative market		Syllabus Version		2021-22 Batch only	
<b>CourseObjectives:</b>						
The Main objectives of this course to enable the students to:						
<ol style="list-style-type: none"> <li>1. Provide Delegates With a good understanding of how the futures and options markets work,together with the functions of the clearing house.</li> <li>2. Understand and evaluate the basic derivatives and their applications in financial risk management and investment.</li> <li>3. Learn the theoretical underpinnings and the practical applications in real world of derivative securities.</li> <li>4. Learn the theoretical underpinnings and the practical applications in real world of derivative securities.</li> <li>5. Defining Various types of payoff for buyer and identifying commodity markets</li> </ol>						
<b>ExpectedCourseOutcomes:</b>						
On The Successful Completion of the course, student will be able to:						
1	Evaluating concepts and market mechanics of different types of financial derivatives		K1&K2			
2	Analyze How financial derivatives are valued,based on the no-arbitrage and risk-neutral valuation approaches		K4			
3	Evaluate The Instruments That can be used to implement risk management strategies.		K5			
4	Discovering Various payoff for buyer of futures and other options like hedging and speculation.		K4			
5	Identifying The Evolution Of commodity markets and exchanges in india.		K3			
<b>K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6–Create</b>						
<b>Unit:1</b>	<b>Introduction</b>		<b>18hours</b>			
IntroductiontoDerivatives–Definition Derivative Products–participants in derivatives market, economic forever of derivatives market.						
<b>Unit:2</b>	<b>IndexDerivatives</b>		<b>18hours</b>			
IndexDerivatives–Index Number–economic significance of index movements–types of Indices –desirable attributes of an index–Derivatives in Nifty And Sensex.						
<b>Unit:3</b>	<b>Forwardcontracts</b>		<b>18hours</b>			
Forward contracts - Limitations of forward markets – futures – Distinction betweenFuture and Forward contracts – Futures terminitory options – Options terminitory , Call optionsand Put option.						
<b>Unit:4</b>	<b>PayoffforBuyer</b>		<b>18hours</b>			

Payoff For Buyer(long futures)of futures–payoff for seller(short futures)offutures  
 – Hedging,speculation and arbitrage–Options Payoff–payoff profit for buyer of call options  
 – Pay off profit for writer of call options. Hedging And speculation in options.

<b>Unit:5</b>	<b>CommodityMarkets</b>	<b>16hours</b>
Evolution of Commodity Markets – Commodity markets in India – New york Mercantile Exchange- London Metal Exchange , Chicago Board of Trades –Tokyo Commodity Exchange,ChicagoMercantile Exchange.		
<b>Unit:6</b>	<b>ContemporaryIssue</b>	<b>2hours</b>
Online Assignment And Online Seminar		
	<b>TotalLecturehours</b>	<b>90hours</b>
<b>BooksforStudy</b>		
1	FinancialServicesandMarkets:Dr.S.Gurusamy, VijayNicoleImprints(P)Ltd,2016	
2	FinancialServices:M. Y.Khan, TataMcGraw-HillPublishingCompanyLimited.2017	
3	.FinancialServices: Dr.D.JosephAnbarasu& Others,Sultan Chand&Sons.2018	
<b>BooksforReferences</b>		
1	TheFinancialandAnalysisofCapital: A.J.Merrett,AllenYkesprojects2016	
2	FinancialManagement:P.V.Kulkarni&B.G.SathyaPrasad2019	
3	FinancialManagement:M. Y.Khan&P.K.Jain2018	
<b>RelatedOnlineContents</b>		
1	www.udemy.com	
2	<a href="https://youtu.be/-MveJRIDdgU">https://youtu.be/-MveJRIDdgU</a>	
3	www.nscindia.com	
CourseDesigned By:		

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	M	S	S	M	M
<b>CO2</b>	S	S	M	M	M
<b>CO3</b>	M	S	S	M	S
<b>CO4</b>	M	M	S	S	M
<b>CO5</b>	M	S	S	S	S

\*S-Strong;M-Medium;L-Low

Course Code	FUNDAMENTAL AND TECHNICAL ANALYSIS			L	T	P	C
Core/Elective/Supportive	ELECTIVE			4			4
Pre-requisite	Basic knowledge on Derivative market			Syllabus Version	2021-22 Batch Only		
<b>Course Objectives:</b>							
The Main objectives of this course to enable the students							
1. Discovering Various concepts based on investments and security analysis.							
2. Define technical analysis and contrast it with fundamental analysis.							
3. Explain the logic behind technical analysis and company analysis.							
4. Discuss The Basic tools used by technical analysts.							
5. Explaining the concepts based on moving averages, charts and its related functions.							
<b>Expected Course Outcomes:</b>							
On The Successful Completion Of the course, student will be able to:							
1	Examining various concepts related to investment and approaches to security valuation.			K4			
2	Outline the theoretical context of the fundamental and technical analysis			K2			
3	Summarize Work On the basic tools used by technical analysts			K5			
4	Determining the various theory and technical analysis related meaning			K5			
5	Evaluate Securities by measuring the intrinsic value of stock			K5			
<b>K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create</b>							
<b>Unit:1</b>	<b>Introduction</b>			<b>18hours</b>			
Investment-meaning-importance-security analysis-risk and return-various approaches to security valuation.							
<b>Unit:2</b>	<b>Fundamental Analysis</b>			<b>18hours</b>			
Fundamental Analysis-meaning-Market Analysis -Indices of NSE and BSE							
<b>Unit:3</b>	<b>Industry Analysis</b>			<b>18hours</b>			
Industry Analysis-meaning-methods -Company analysis-meaning-methods.							
<b>Unit:4</b>	<b>Technical Analysis</b>			<b>18hours</b>			
Technical Analysis-meaning-Dow Theory-Elliot Wave Theory							
<b>Unit:5</b>	<b>Moving Averages</b>			<b>16hours</b>			
Moving Averages -Charts-MACD-relative strengths.							
<b>Unit:6</b>	<b>Contemporary Issue</b>			<b>2hours</b>			

Online Assignment And Online Seminar		
	<b>Total Lecture Hours</b>	<b>90hours</b>

<b>BooksforStudy</b>	
1	Investment Analysis And Portfolio Management:Reily. 2016
2	Portfolio Management:S.K.Baura.2013
3	Modern Portfolio Theory And investment analysis:Elton andGurbar.2018
<b>BooksforReferences</b>	
1	Securities Analysis And Portfolio Management:FischerandJordan2018
2	Investment:JackClarkFrancis&Richardw.Taylor.2015
3	Investment Management:V.K.Bhalla.2016
<b>RelatedOnlineContents</b>	
1	<a href="http://www.tradingcompus.in">www.tradingcompus.in</a>
2	<a href="http://Learn.tradimo.com">Learn.tradimo.com</a>
3	<a href="http://www.mooclist.com">www.mooclist.com</a>
CourseDesigned By:	

<b>Mapping with Program Outcomes</b>					
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>
<b>CO1</b>	S	S	S	M	M
<b>CO2</b>	M	M	S	M	M
<b>CO3</b>	M	S	S	M	S
<b>CO4</b>	M	M	S	S	M
<b>CO5</b>	S	S	M	S	M

\*S-Strong;M-Medium;L-Low



# BACHELOR OF COMPUTER APPLICATIONS



## Syllabus

Program Code:3SC

**Autonomous**

Providence College for women  
(Autonomous)  
Accredited with 'A' grade by NAAC  
Spring field, Coonoor- 643 104  
The Nilgiris, India.

2022-2023  
(Onwards)

<b>Program Educational Objectives (PEOs)</b>	
The <b>BCA</b> program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
<b>PEO 1</b>	To impart advance knowledge about various sub-domains related to the field of computer applications
<b>PEO 2</b>	To provide the strong character to uphold the spiritual and cultural values of our country to make students acceptable to both industries and higher education.
<b>PEO 3</b>	Graduates will be capable of attaining higher position in their professional carrier, capable to do quality research by strengthening their mathematical, scientific and basic engineering fundamentals.
<b>PEO 4</b>	Graduate will be capable of adopting the changing technologies, tools, and industrial environment.
<b>PEO 5</b>	Graduates will promote collaborative learning and spirit of team work through <u>multidisciplinary</u> projects and diverse <u>professional</u> activities.



<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of BCA program, the students are expected to	
<b>PSO 1</b>	Develop proficiency in problem solving and logical thinking skill.
<b>PSO 2</b>	To impart the knowledge of programming languages, web designing, networking and Software development cycle.
<b>PSO 3</b>	Enrich the communicative ability to present orally throughout all the stages of Software development process
<b>PSO 4</b>	Learn latest development and technologies in IT and Communications system.
<b>PSO 5</b>	Implementation of professional engineering solutions for the betterment of society keeping the environmental context in mind, be aware of professional ethics and be able to communicate effectively.





<b>Program Outcomes (POs)</b>	
On successful completion of the BCA program	
PO1	<b>Disciplinary knowledge:</b> Capable to apply the knowledge of mathematics, algorithmic principles and computing fundamentals in the modeling and design of computer based systems of varying complexity.
PO2	<b>Scientific reasoning/ Problem analysis:</b> Ability to critically analyze, categorizes, formulate and solve the problems that emerges in the field of computer science.
PO3	<b>Problem solving:</b> Able to provide software solutions for complex scientific and business related problems or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal and environmental considerations.
PO4	<b>Environment and sustainability:</b> Understand the impact of software solutions in environmental and societal context and strive for sustainable development.
PO5	<b>Modern tool usage:</b> Use contemporary techniques, skills and tools necessary for integrated solutions.
PO6	<b>Ethics:</b> Function effectively with social, cultural and ethical responsibility as an individual or as a team member with positive attitude.
PO7	<b>Cooperation / Team Work:</b> Function effectively as member or leader on multidisciplinary teams to accomplish a common objective.
PO8	<b>Communication Skills:</b> An ability to communicate effectively with diverse types of audience and also able to prepare and present technical documents to different groups.
PO9	<b>Self-directed and Life-long Learning:</b> Graduates will recognize the need for self-motivation to engage in lifelong learning to be in par with changing technology.
PO10	Enhance the research culture and uphold the scientific integrity and objectivity

**PROVIDENCE COLLEGE FOR WOMEN****(Autonomous)Coonoor 643 104****B.C.A. (CBCS PATTERN)***(For the students admitted from the academic year 2021-2022)***Scheme of Examination**

Part	Title of the Course	Hours/ Week	Examination				Credits
			Duration in Hours	Maximum Marks			
				CIA	CEE	Total	
<b>Semester I</b>							
I	Language – I	6	3	50	50	100	4
II	English – I	6	3	50	50	100	4
III	Core 1: Computing Fundamentals and C Programming	4	3	50	50	100	4
III	Core 2: Digital Fundamentals and Computer Architecture	4	3	50	50	100	4
III	Core Lab 1: Programming Lab – C	3	3	50	50	100	4
III	Allied 1: Mathematical Structures for Computer Science	5	3	50	50	100	4
IV	Environmental Studies*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>300</b>	<b>350</b>	<b>650</b>	<b>26</b>
<b>Semester II</b>							
I	Language – II	6	3	50	50	100	4
II	English – II	6	3	50	50	100	4
III	Core 3: C++ Programming	5	3	50	50	100	4
III	Core Lab 2: Programming Lab - C++	4	3	50	50	100	4
III	Core Lab 3: Internet Basics	2	3	25	25	50	2
III	Allied 2: Discrete Mathematics	5	3	50	50	100	4
IV	Value Education – Human Rights*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>275</b>	<b>325</b>	<b>600</b>	<b>24</b>
<b>Semester III</b>							
III	Core 4: Data Structures	6	3	50	50	100	4
III	Core 5: Java Programming	6	3	50	50	100	4
III	Core Lab 4: Programming Lab – Java	5	3	50	50	100	4
III	Allied 3: Computer Based Optimization Techniques	6	3	50	50	100	4
III	Skill based Subject 1: Web Programming	5	3	30	45	75	3
IV	Tamil**/ Advanced Tamil* (OR) Non-major elective - I (Yoga for Human Excellence)* / Women's Rights*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>230</b>	<b>295</b>	<b>525</b>	<b>21</b>
<b>Semester IV</b>							
III	Core 6: System Software and Operating System	6	3	50	50	100	4
III	Core 7: Linux and Shell Programming	6	3	50	50	100	4
III	Core Lab 5: Linux and Shell Programming Lab	6	3	50	50	100	4
III	Allied 4: Business Accounting	6	3	50	50	100	4
III	Skill based Subject 2 Lab: Web Programming – Lab	4	3	30	45	75	3
IV	Tamil**/Advanced Tamil* (OR) Non-major elective -II (General Awareness*)	2	3	-	50	100	2
<b>Total</b>		<b>30</b>		<b>230</b>	<b>295</b>	<b>525</b>	<b>21</b>

<b>Semester V</b>							
III	Core 8: RDBMS & Oracle	6	3	50	50	100	4
III	Core 9: Visual Basic	6	3	50	50	100	4
III	Core Lab 6: Programming Lab – VB & Oracle	6	3	50	50	100	4
III	Elective – I: Introduction to Compiler Design / PHP & Scripting Language / PYTHON Programming	6	3	50	50	100	4
III	Skill based Subject 3: CASE Tools Concepts and Applications	6	3	30	45	75	3
	<b>Total</b>	<b>30</b>		<b>230</b>	<b>245</b>	<b>475</b>	<b>19</b>
<b>Semester VI</b>							
III	Core 10: Graphics & Multimedia	6	3	50	50	100	4
III	Core 11: Project Work Lab % %	8	-	100	100	200	8
III	Core 7: Programming Lab – Graphics & Multimedia	3	3	50	50	100	4
III	Elective – II: Computer Networks/ Dot Net programming /Distributed Computing	5	3	50	50	100	4
III	Elective – III: Internet of Things(IoT) / Web Services / Software Testing	5	3	50	50	100	4
III	Skill Based Subject 4 : CASE Tools Lab	3	3	30	45	75	3
V	Extension Activities**	-	-	50	-	50	2
	<b>Total</b>	<b>30</b>		<b>380</b>	<b>345</b>	<b>725</b>	<b>29</b>
	<b>Grand Total</b>			<b>1645</b>	<b>1855</b>	<b>3500</b>	<b>140</b>



# **First Semester**

Course code	Computing Fundamentals and C Programming			L	T	P	C
Core/Elective/Supportive	Core Paper: 1			4	0	0	4
Pre-requisite	Students should have basic Computer Knowledge			Syllabus Version	2022-23 Onward		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. To impart knowledge on fundamentals of Computer							
2. To understand the concepts and techniques in C Programming							
3. To equip and indulge themselves in problem solving using C							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Learn about the Computer fundamentals and the Problem solving						K2
2	Understand the basic concepts of C programming						K2
3	Describe the reason why different decision making and loop constructs are available for iteration in C						K3
4	Demonstrate the concept of User defined functions , Recursions , Scope and Lifetime of Variables, Structures and Unions						K4
5	Develop C programs using pointers Arrays and file management						K3
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create							
<b>Unit:1</b>	<b>Fundamentals of Computers &amp; Problem Solving in C</b>					<b>12 hours</b>	
Fundamentals of Computers : Introduction – History of Computers-Generations of Computers-Classification of Computers-Basic Anatomy of a Computer System- Input device-output device-Processor-Memory Management – Types of Software – <b>Algorithm - Characteristics of Algorithm-Flowcharts-Programming Languages-Translator Programs-Problem Solving Techniques .</b>							
<b>Unit:2</b>	<b>Overview of C</b>					<b>15 hours</b>	
Overview of C - Introduction - Character set - C tokens - keyword & Identifiers - Constants - Variables - Data types - Declaration of variables - Assigning values to variables - Defining Symbolic Constants - Arithmetic, Relational, Logical, Assignment, Conditional, Bitwise, Special, Increment and Decrement operators - Arithmetic Expressions - Evaluation of expression - precedence of arithmetic operators - Type conversion in expression – operator precedence & associativity - Mathematical functions - Reading & Writing a character - Formatted input and output.							
<b>Unit:3</b>	<b>Decision Making , Looping and Arrays</b>					<b>15 hours</b>	
Decision Making and Branching: Introduction – if, if...else, nesting of if ...else statements- else if ladder – The switch statement, The ?: Operator – The goto Statement. Decision Making and Looping: Introduction- The while statement- the do statement – the for statement-jumps in loops. Arrays – Character Arrays and Strings							
<b>Unit:4</b>	<b>User-Defined Functions, Structures and Unions</b>					<b>15 hours</b>	
User-Defined Functions: Introduction – Need and Elements of User-Defined Functions- Definition-Return Values and their types - Function Calls – Declarations – Category of							

Functions- Nesting of Functions - Recursion – Passing Arrays and Strings to Functions - The Scope, Visibility and Lifetime of Variables- Multi file Programs. Structures and Unions		
<b>Unit:5</b>	<b>Pointers &amp; File Management</b>	<b>15 hours</b>
Pointers: Introduction-Understanding pointers -Accessing the address of a variable Declaration and Initialization of pointer Variable – Accessing a variable through its pointer Chain of pointers- Pointer Expressions – Pointer Increments and Scale factor- Pointers and Arrays- Pointers and Strings – Array of pointers – Pointers as Function Arguments Functions returning pointers – Pointers to Functions – Pointers and Structures. Files: <b>Introduction-Types-Steps to File operation- File I/O –Command Line Arguments- The Preprocessor Directives.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
<b>Expert Lectures on C, Webinars, Problem Solving through C Programming, – Edureka</b>		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	E Balagurusamy: Computing Fundamentals & C Programming – Tata McGraw-Hill, Second Reprint 2008	
<b>Reference Books</b>		
1	Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson, 2002.	
2	Henry Mullish & Hubert L.Cooper: The Sprit of C, Jaico, 1996.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	Introduction to Programming in C – NPTEL	
2	Problem solving through Programming in C – SWAYAM	
3	C for Everyone : Programming Fundamentals – Coursera	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	S	M	S	L
<b>CO2</b>	S	M	S	M	M	L	S	L	S	L
<b>CO3</b>	S	S	S	M	M	M	S	M	S	M
<b>CO4</b>	S	S	S	M	S	M	S	M	S	M
<b>CO5</b>	S	S	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	Digital Fundamentals and Computer Architecture		L	T	P	C
Core/Elective/Supportive	Core Paper : 2		4	0	-	4
Pre-requisite	Students should have basic computer knowledge	Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>						
On successful completion of this subject the students should have Knowledge on						
<ol style="list-style-type: none"> <li>To familiarize with different number systems and digital arithmetic &amp; logic circuits</li> <li>To understand the concepts of Combinational Logic and Sequential Circuits</li> <li>To impart the knowledge of buses, I/O devices, flip flops, Memory and bus structure.</li> <li>To understand the concepts of memory hierarchy and memory organization</li> <li>To understand the various types of microprocessor architecture</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Learn the basic structure of number system methods like binary, octal and hexadecimal and understand the arithmetic and logical operations are performed by computers.					K3
2	Define the functions to simplify the Boolean equations using logic gates.					K1
3	Understand various data transfer techniques in digital computer and control unit operations.					K2
4	Compare the functions of the memory organization					K4
5	Analyze architectures and computational designs concepts related to architecture organization and addressing modes					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>Number System and Arithmetic circuits</b>				<b>12 hours</b>	
Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtractor, Full subtractor, Parallel binary subtractor - Digital Logic: The Basic Gates – NOR, NAND, XOR Gates.						
<b>Unit:2</b>	<b>Combinational Logic and Sequential Circuits</b>				<b>14 hours</b>	
Combinational Logic Circuits: Boolean algebra – Karnaugh map – Canonical form Construction and properties – Implementations – Don't care combinations - Product of sum, Sum of products, Simplifications. Sequential circuits: Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder Encoder – digital comparator, parity checker/generator.						
<b>Unit:3</b>	<b>Input – Output Organization and Data Transfer</b>				<b>12 hours</b>	
Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy- Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.						
<b>Unit:4</b>	<b>Memory Organization</b>				<b>10 hours</b>	
Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory, <b>Semiconductor memories and Programmable logic devices.</b>						

<b>Unit:5</b>	<b>Case Studies</b>	<b>6 hours</b>
CASE STUDY: Pin out diagram, Architecture, Organization and addressing modes of 80286-80386-80486-Introduction to microcontrollers.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>56 hours</b>
<b>Text Book(s)</b>		
1	Digital principles and applications, Albert Paul Malvino, Donald P Leach, TMH, 1996.	
2	Computer System Architecture -M. Morris Mano , PHI.	
3	Microprocessors and its Applications-Ramesh S. Goankar	
<b>Reference Books</b>		
1	Digital Electronics Circuits and Systems, V.K. Puri, TMH.	
2	Computer Architecture, M. Carter, Schaum’s outline series, TMH.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/103/106103068/">https://nptel.ac.in/courses/106/103/106103068/</a>	
2	<a href="http://www.nptelvideos.in/2012/12/digital-computer-organization.html">http://www.nptelvideos.in/2012/12/digital-computer-organization.html</a>	
3	<a href="http://brittunculi.com/foca/materials/FOCA-Chapters-01-07-review-handout.pdf">http://brittunculi.com/foca/materials/FOCA-Chapters-01-07-review-handout.pdf</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	S	M	M	L
<b>CO2</b>	S	M	S	M	M	S	M	M	M	L
<b>CO3</b>	S	S	S	M	S	S	S	M	M	M
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



Course code		Programming Lab – C	L	T	P	C
Core/Elective/Supportive		Core Lab: 1	0	0	3	4
Pre-requisite		Students should have basic knowledge in C programming and algorithms	Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To practice the Basic concepts, Branching and Looping Statements and Strings in C programming						
2. To implement and gain knowledge in Arrays, functions, Structures, Pointers and File Handling						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember and Understand the logic for a given problem and to generate Prime numbers & Fibonacci Series ( <b>Program-1,2,3</b> )					K1, K2
2	Apply the concepts to print the Magic square, Sorting the data, Strings, Recursive functions and Pointers ( <b>Program-4,5,6,8,10</b> )					K2, K3
3	Remember the logic used in counting the vowels in a sentence ( <b>Program-7</b> )					K1
4	Apply and Analyze the concepts of Structures and File management ( <b>Program-9,11,12</b> )					K3&K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Programs</b>						<b>36 hours</b>
<b>1. Write a C program to find the sum of digits of number.</b>						
2. Write a C program to generate n prime numbers.						
3. Write a C program to generate Fibonacci series.						
<b>4. Write a C program to check Armstrong number of three digits</b>						
5. Write a C program to sort the given set of numbers in ascending order.						
6. Write a C program to check whether the given number is a palindrome or not.						
7. Write a C program to count the number of Vowels in the given sentence.						
8. Write a C program to find the factorial of a given number using recursive function.						
9. Write a C program to print the students Mark sheet assuming roll no, name, and marks in 5 subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.						
10. Write a function using pointers to add two matrices and to return the resultant matrix to the calling function.						
11. Write a C program which receives two filenames as arguments and check whether the file contents are same or not.						
12. Write a program which takes a file as command line argument and copy it to another file. At the end of the second file write the total i) no of chars ii) no. of words and iii) no. of lines.						
<b>Total Lecture hours</b>						<b>36 hours</b>
<b>Text Book(s)</b>						
1	E Balagurusamy: Computing Fundamentals & C Programming – Tata McGraw-Hill, Second Reprint 2008					
<b>Reference Books</b>						

1	Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson, 2002.
2	Henry Mullish & Hubert L.Cooper: The Sprit of C, Jaico, 1996.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	Introduction to Programming in C – NPTEL
2	Problem solving through Programming in C – SWAYAM
3	C for Everyone : Programming Fundamentals – Course

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	L	M	S	S	S	L
<b>CO3</b>	S	S	S	M	L	M	S	S	S	M
<b>CO3</b>	S	S	S	L	L	M	S	S	S	L
<b>CO4</b>	S	S	S	M	L	M	S	S	S	M

\*S-Strong; M-Medium; L-Low





**Second  
Semester**

Course code	C++ PROGRAMMING			L	T	P	C
Core/Elective/Supportive	Core: 3			5	0	0	4
Pre-requisite	Before starting this course one should have a basic understanding of computer programs and computer programming language. If you know the concepts of C programming it will be much easier to understand this course			Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Impart knowledge of object oriented programming concepts and implement them in C++</li> <li>2. Enable to differentiate procedure oriented and object-oriented concepts.</li> <li>3. Equip with the knowledge of concept of Inheritance so that learner understands the need of inheritance.</li> <li>4. Explain the importance of data hiding in object oriented programming</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Define the different programming paradigm such as procedure oriented and object oriented programming methodology and conceptualize elements of OO methodology					K1	
2	Illustrate and model real world objects and map it into programming objects for a legacy system.					K2	
3	Identify the concepts of inheritance and its types and develop applications using overloading features.					K3	
4	Discover the usage of pointers with classes					K4	
5	Explain the usage of Files, templates and understand the importance of exception Handling					K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION TO C++</b>					<b>10 hours</b>	
Key concepts of Object-Oriented Programming –Advantages – Object Oriented Languages – I/O in C++ - C++ Declarations. Control Structures: - Decision Making and Statements: If.. Else, jump, goto, break, continue, Switch case statements - Loops in C++: for, while, do - functions in C++ - inline functions – Function Overloading..							
<b>Unit:2</b>	<b>CLASSES AND OBJECTS</b>					<b>10 hours</b>	
Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions – Bit fields and classes – Constructor and destructor with static members.							
<b>Unit:3</b>	<b>OPERATOR OVERLOADING</b>					<b>12 hours</b>	
Overloading unary, binary operators – Overloading Friend functions – type conversion – Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.							
<b>Unit:4</b>	<b>POINTERS</b>					<b>13 hours</b>	

Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes – Arrays – Characteristics – array of classes – Memory models – new and delete operators – dynamic object – Binding, Polymorphism and Virtual Functions.		
<b>Unit:5</b>	<b>FILES</b>	<b>13 hours</b>
File stream classes – file modes – Sequential Read / Write operations – Binary and ASCII Files – Random Access Operation – Templates- <b>Function Template- Class Template</b> – Exception Handling - <b>Try and catch block- Throw statement</b> - String – Declaring and Initializing string objects – StringAttributes – Miscellaneous functions .		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Ashok N Kamthane, Object-Oriented Programming with Ansi And Turbo C++, Pearson Education, 2003.	
<b>Reference Books</b>		
1	E. Balagurusamy, Object-Oriented Programming with C++, TMH, 1998.	
2	Maria Litvin & Gray Litvin, C++ for you, Vikas publication, 2002.	
3	John R Hubbard, Programming with C, 2nd Edition, TMH publication, 2002.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.spoken-tutorial.org">https://www.spoken-tutorial.org</a>	
2	<a href="https://www.tutorialspoint.com/cplusplus/index.htm">https://www.tutorialspoint.com/cplusplus/index.htm</a>	
3	<a href="https://www.w3schools.com/cpp/">https://www.w3schools.com/cpp/</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	M	M	M	L
<b>CO2</b>	S	S	S	S	S	S	S	M	M	M
<b>CO3</b>	S	S	S	S	S	S	S	M	M	M
<b>CO4</b>	S	S	S	S	S	S	S	M	M	S
<b>CO5</b>	S	S	S	S	S	S	S	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	PROGRAMMING LAB - C++			L	T	P	C
Core/Elective/Supportive	Core Lab : 2			0	0	4	4
Pre-requisite	Basic understanding of computer programs and computer programming language like C.			Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Impart knowledge of object oriented programming concepts and implement them in C++</li> <li>2. Enable to differentiate procedure oriented and object-oriented concepts.</li> <li>3. Equip with the knowledge of concept of Inheritance so that learner understands the need of inheritance.</li> <li>4. Explain the importance of data hiding in object oriented programming</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Define the different programming paradigm such as procedure oriented and object oriented programming methodology and conceptualize elements of OO methodology						K1
2	Illustrate and model real world objects and map it into programming objects for a legacy system.						K2
3	Identify the concepts of inheritance and its types and develop applications using overloading features.						K3
4	Discover the usage of pointers with classes						K4
5	Explain the usage of Files, templates and understand the importance of exception Handling						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Programs</b>						<b>36 hours</b>	
1. Write a C++ Program to create a class to implement the data structure STACK. Write a constructor to initialize the TOP of the STACK. Write a member function PUSH() to insert an element and member function POP() to delete an element check for overflow and underflow conditions..							
2. Write a C++ Program to create a class ARITHMETIC which consists of a FLOAT and an INTEGER variable. Write member functions ADD (), SUB(), MUL(), DIV() to perform addition, subtraction, multiplication, division respectively. Write a member function to get and display values.							
3. Write a C++ Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.							
4. Write a C++ Program to create a class FLOAT that contains one float data member. Overload all the four Arithmetic operators so that they operate on the object FLOAT							
5. Write a C++ Program to create a class STRING. Write a Member Function to initialize, get and display strings. Overload the operators ++ and == to concatenate two Strings and to compare two strings respectively.							
6. Write a C++ Program to create class, which consists of EMPLOYEE Detail like E_Number, E_Name, Department, Basic, Salary, Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.							
7. Write a C++ Program to create a class SHAPE which consists of two VIRTUAL FUNCTIONS Calculate_Area() and Calculate_Perimeter() to calculate area and perimeter of various figures. Derive three classes SQUARE, RECTANGLE, TRIANGLE from class Shape and Calculate Area and							

Perimeter of each class separately and display the result.	
8. Write a C++ Program to create two classes each class consists of two private variables, a integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes as arguments and the integer and float values of both objects separately and display the result.	
9. Write a C++ Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.	
10. Write a C++ Program to check whether the given string is a palindrome or not using Pointers	
<b>11. Write a C++ program to use pointer for both base and derived classes and call the member function. Use Virtual keyword.</b>	
<b>12. Write a C++ program to use scope resolution operator. Display the various values of the same variables declared at different scope levels.</b>	
Text Book(s)	
1	Ashok N Kamthane, Object-Oriented Programming with Ansi And Turbo C++, Pearson Education, 2003.
<b>Reference Books</b>	
1	E. Balagurusamy, Object-Oriented Programming with C++, TMH, 1998.
2	Maria Litvin & Gray Litvin, C++ for you, Vikas publication, 2002.
3	John R Hubbard, Programming with C, 2nd Edition, TMH publication, 2002.

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	M	M	M	L
<b>CO2</b>	S	S	S	S	S	S	S	M	M	M
<b>CO3</b>	S	S	S	S	S	S	S	M	M	M
<b>CO4</b>	S	S	S	S	S	S	S	M	M	S
<b>CO5</b>	S	S	S	S	S	S	S	M	M	S

Course code		Internet Basics	L	T	P	C
Core/Elective/Supportive		Core Lab : 3	0	0	2	2
Pre-requisite		Knowledge of WINDOWS Operating Systems	Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Introduce the fundamentals of Internet and the Web functions.</li> <li>2. Impart knowledge and essential skills necessary to use the internet and its various components.</li> <li>3. Find, evaluate, and use online information resources.</li> <li>4. Use Google Apps for education effectively.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the fundamentals of Internet and the Web concepts					K2
2	Explain the usage of internet concepts and analyze its components.					K2
3	Identify and apply the online information resources					K3
4	Inspect and utilize the appropriate Google Apps for education effectively					K3, K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Programs</b>						<b>36 hours</b>
1. Create an email account in Gmail. Using the account created compose a mail to invite other college students for your college fest, enclose the invitation as attachment and send the mail to at least 50 recipients. Use CC and BCC options accordingly.						
2. Open your inbox in the Gmail account created, check the mail received from your peer from other college inviting you for his college fest, and download the invitation. Reply to the mail with a thank you note for the invite and forward the mail to other friends.						
3. Assume that you are studying in final year of your graduation and are eagerly looking for a job. Visit any job portal and upload your resume.						
4. Create a meeting using Google calendar and share meeting id to the attendees. Transfer the ownership to the Manager once the meeting id is generated.						
<b>5. Create an account in Microsoft Teams</b>						
6. Create your own Google classroom and invite all your friends through email id. Post study material in Google classroom using Google drive. Create a separate folder for every subject and upload all unit wise E-Content Materials.						
7. Create and share a folder in Google Drive using 'share a link' option and set the permission to access that folder by your friends only.						
8. Create one page story in your mother tongue by using voice recognition facility of Google docs.						
9. Create a registration form for your Department Seminar or Conference using Google Forms.						
10. Create a question paper with multiple choice types of questions for a subject of your choice, using Google Forms.						
11. Create a Google form with minimum 25 questions to conduct a quiz and generate a certificate after submission.						



<b>12. Create a Google form to enter the person details and upload your photo.</b>	
13. Create a Google slides for a topic and share the same with your friends.	
14. Create template for a seminar certificate using Google Slides.	
15. Create a sheet to illustrate simple mathematical calculations using Google Sheets.	
16. Create student's internal mark statement and share the Google sheets via link.	
17. Create different types of charts for a range in CIA mark statement using Google Sheets.	
18. Create a mark statement in Google Sheets and download it as PDF, .xls and .csv files.	
<b>Text Book(s)</b>	
1	Ian Lamont, Google Drive & Docs in 30 Minutes, 2 <sup>nd</sup> Edition.
<b>Reference Books</b>	
1	Sherry Kinkoph Gunter, My Google Apps, 2014.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=NzPNk44tdlQ">https://www.youtube.com/watch?v=NzPNk44tdlQ</a>
2	<a href="https://www.youtube.com/watch?v=PKuBtQuFa-8">https://www.youtube.com/watch?v=PKuBtQuFa-8</a>
4	<a href="https://www.youtube.com/watch?v=hGER1hP58ZE">https://www.youtube.com/watch?v=hGER1hP58ZE</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	S	M	M	S	L
<b>CO2</b>	S	M	S	S	S	S	S	S	S	M
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



**Third  
Semester**

Course code	Data Structures		L	T	P	C
Core/Elective/Supportive	Core: 4		6	0	0	4
Pre-requisite	Basic understanding of Data storage, retrieval and algorithms.		Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To introduce the fundamental concept of data structures						
2. To emphasize the importance of data structures in developing and implementing efficient algorithms.						
3. Understand the need for Data Structures when building application						
4. Ability to calculate and measure efficiency of code						
5. Improve programming logic skills.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts of data structures and algorithms					K1-K2
2	Construct and analyze of stack and queue operations with illustrations					K2-K4
3	Enhance the knowledge of Linked List and dynamic storage management.					K2-K3
4	Demonstrate the concept of trees and its applications					K2-K3
5	Design and implement various sorting and searching algorithms for applications and understand the concept of file organizations					K1-K4
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>15 hours</b>	
Introduction of Algorithms, Analysing Algorithms. Arrays: Sparse Matrices – Representation of Arrays. Stacks and Queues. Fundamentals – Evaluation of Expression Infix to Postfix Conversion – <b>Magic Square</b>						
<b>Unit:2</b>	<b>LINKED LIST</b>				<b>12 hours</b>	
Linked List: Singly Linked List – Linked Stacks and Queues – Polynomial Addition- More on Linked Lists – Sparse Matrices – Doubly Linked List and Dynamic – Storage Management – Garbage Collection and Compaction.						
<b>Unit:3</b>	<b>TREES</b>				<b>15 hours</b>	
Basic Terminology – Binary Trees : Binary Tree Representations – Binary Trees Traversal– Threaded Binary Trees – Counting Binary Trees. Graphs: Terminology and Representations- Traversals, Connected Components and Spanning Trees, Shortest Paths and Transitive Closure						
<b>Unit:4</b>	<b>EXTERNAL SORTING</b>				<b>15 hours</b>	
Storage Devices – K-Way Merging – Sorting with Tapes Symbol Tables:Static Tree Tables – Dynamic Tree Tables – Hash Tables: Hashing Functions – OverflowHandling.						

<b>Unit:5</b>	<b>INTERNAL SORTING</b>	<b>15 hours</b>
Insertion Sort – Quick Sort – 2 Way Merge Sort – Heap Sort – Shell Sort – Files: Files, Queries and Sequential organizations – Index Techniques –File Organizations.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Ellis Horowitz, Sartaj Shani, Data Structures, Galgotia Publication.	
2	Ellis Horowitz, Sartaj Shani, Sanguthevar Rajasekaran, Computer Algorithms, Galgotia Publication.	
3	S.Lovelyn Rose, R.Venkatesan, Data Structures, Wiley India Private Limited,2015, 1 <sup>st</sup> Edition	
<b>Reference Books</b>		
1	Jean-Paul,Tremblay & Paul G.Sorenson , An Introduction to Data structures with Applications Tata McGraw Hill Company 2008, 2ndEdition.	
2	Samanta.D , Classic Data Structure Prentice Hall of India Pvt Ltd 2007, 9 <sup>th</sup> Edition	
3	Seymour Lipschutz, Data Structures McGraw Hill Publications, 2014, 1 <sup>st</sup> Edition	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	S	M	M	M
<b>CO2</b>	S	S	S	M	M	M	M	M	M	M
<b>CO3</b>	S	S	S	M	S	M	M	M	S	S
<b>CO4</b>	S	S	S	M	S	S	S	S	M	M
<b>CO5</b>	S	S	S	M	M	S	S	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	Java Programming			L	T	P	C
Core/Elective/Supportive	Core: 5			6	0	0	4
Pre-requisite	Students Should have the basic understanding of oops concept.			Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. To expose the students with the introduction to OOPs and advantages of object oriented programming.</li> <li>2. The concepts of OOPs make it easy to represent real world entities.</li> <li>3. The course introduces the concepts of converting the real time problems into objects and methods and their interaction with one another to attain a solution.</li> <li>4. Simultaneously it provides the syntax of programming language Java for solving the real world problems.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	The competence and the development of small to medium sized application programs that demonstrate professionally acceptable coding						K1-K2
2	Demonstrate the concept of object oriented programming through Java						K2-K4
3	Apply the concept of Inheritance, Modularity, Concurrency, Exceptions handling and data persistence to develop java program						K3
4	Develop java programs for applets and graphics programming						K3
5	Understand the fundamental concepts of AWT controls, layouts and events						K1-K2
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>FUNDAMENTALS OF OBJECT-ORIENTED PROGRAMMING</b>					<b>15 hours</b>	
Object-Oriented Paradigm – Basic Concepts of Object-Oriented Programming – Benefits of Object-Oriented Programming –Application of Object-Oriented Programming. Java Evolution:History – Features – How Java differs from C and C++ – Java and Internet – Java and www –Web Browsers. Overview of Java: simple Java program – Structure – Java Tokens – Statements – Java Virtual Machine.							
<b>Unit:2</b>	<b>BRANCHING AND LOOPING</b>					<b>12 hours</b>	
Constants, Variables, Data Types – Operators and Expressions – Decision Making and Branching: if, if...else, nested if, switch, ? : Operator – Decision Making and Looping: while, do, for – Jumps in Loops – Labeled Loops – Classes, Objects and Methods.							
<b>Unit:3</b>	<b>ARRAYS AND INTERFACES</b>					<b>15 hours</b>	
Arrays, Strings and Vectors – Interfaces: Multiple Inheritance – Packages: Putting Classes together – Multithreaded Programming.							
<b>Unit:4</b>	<b>ERROR HANDLING</b>					<b>15 hours</b>	
Managing Errors and Exceptions – Applet Programming – Graphics Programming.							

<b>Unit:5</b>	<b>MANAGING INPUT / OUTPUT FILES IN JAVA</b>	<b>15 hours</b>
Concepts of Streams- Stream Classes – Byte Stream classes – Character stream classes – Using streams – I/O Classes – File Class – I/O exceptions – Creation of files – Reading / Writing characters, <b>Introduction to Java Server Technologies- Java Server Pages.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Programming with Java – A Primer – E. Balagurusamy, 5 <sup>th</sup> Edition, TMH.	
2	Herbert Schildt , Java: The Complete Reference, McGraw Hill Education, Oracle Press 10 <sup>th</sup> Edition, 2018	
3	Programming with Java – A Primer – E. Balagurusamy, 3 <sup>rd</sup> Edition, TMH.	
<b>Reference Books</b>		
1	The Complete Reference Java 2 – Patrick Naughton & Hebert Schildt, 3 <sup>rd</sup> Edition, TMH	
2	Programming with Java – John R. Hubbard, 2 <sup>nd</sup> Edition, TMH.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.spoken-tutorial.org">www.spoken-tutorial.org</a>	
2	<a href="http://www.nptel.ac.in">www.nptel.ac.in</a>	
3	<a href="https://www.w3schools.in/java-tutorial/">https://www.w3schools.in/java-tutorial/</a>	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	L	S	M	M	M
<b>CO2</b>	S	S	S	M	S	L	S	M	M	M
<b>CO3</b>	S	S	S	M	S	M	S	S	M	M
<b>CO4</b>	S	S	S	M	S	M	M	S	M	M
<b>CO5</b>	S	S	S	M	S	M	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code		Programming Lab – JAVA	L	T	P	C
<b>Core/Elective/Supportive</b>		<b>Core Lab: 4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>4</b>
<b>Pre-requisite</b>		Students should know about the OOPs concept and basic knowledge in java theory.	<b>Syllabus Version</b>		<b>2022-23 Onwards</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
3. The main objective of JAVA Programming Lab is to provide the students a strong foundation on programming concepts and its applications through hands-on training.						
4. To practice the Basic concepts, Branching and Looping Statements and Strings in C programming						
5. To implement and gain knowledge in Arrays, functions, Structures, Pointers and File handling						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts of Java Programming with emphasis on ethics and principles of professional coding					<b>K1, K2</b>
2	Demonstrate the creation of objects, classes and methods and the concepts of constructor, methods overloading, Arrays, branching and looping					<b>K2</b>
3	Create data files and Design a page using AWT controls and Mouse Events in Java programming Implement the concepts of code reusability and debugging.					<b>K2, K3</b>
4	Develop applications using Strings, Interfaces and Packages and applets					<b>K3</b>
5	Construct Java programs using Multithreaded Programming and Exception Handling					<b>K3</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Programs</b>						<b>36 hours</b>
1. Write a Java Applications to extract a portion of a character string and print the extracted string.						
2. Write a Java Program to implement the concept of multiple inheritance using Interfaces.						
3. Write a Java Program to create an Exception called payout-of-bounds and throw the exception.						
4. Write a Java Program to implement the concept of multithreading with the use of any three multiplication tables and assign three different priorities to them.						
5. Write a Java Program to draw several shapes in the created windows.						
6. Write a Java Program to create a frame with four text fields name, street, city and pin code with suitable tables. Also add a button called my details. When the button is clicked its corresponding values are to be appeared in the text fields.						
7. Write a Java Program to demonstrate the Multiple Selection List-box.						
8. Write a Java Program to create a frame with three text fields for name, age and qualification and a text field for multiple line for address						
9. Write a Java Program to create Menu Bars and pull down menus.						
10. Write a Java Program to create frames which respond to the mouse clicks. For each events with mouse such as mouse up, mouse down, etc., the corresponding message to be						
<b>11. Write a Java program to creating frame with button by extending frame class.</b>						

displayed.	
12. Write a Java Program to draw circle, square, ellipse and rectangle at the mouse click positions.	
13. Write a Java Program which open an existing file and append text to that file.	
<b>Total Lecture hours</b>	
<b>36 hours</b>	
<b>Text Book(s)</b>	
1	Programming with Java – A Primer – E. Balagurusamy, 5 <sup>th</sup> Edition, TMH.
2	Herbert Schildt , Java: The Complete Reference, McGraw Hill Education, Oracle Press 10 <sup>th</sup> Edition, 2018
3	Programming with Java – A Primer – E. Balagurusamy, 3 <sup>rd</sup> Edition, TMH.
<b>Reference Books</b>	
1	The Complete Reference Java 2 – Patrick Naughton & Hebert Schildt, 3 <sup>rd</sup> Edition, TMH
2	Programming with Java – John R. Hubbard, 2 <sup>nd</sup> Edition, TMH.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.w3resource.com/java-exercises/">https://www.w3resource.com/java-exercises/</a>
2	<a href="https://www.udemy.com/introduction-to-java-programming/">https://www.udemy.com/introduction-to-java-programming/</a>

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	L	S	S	S	M	M	L
<b>CO2</b>	S	S	S	L	S	M	S	M	M	L
<b>CO3</b>	S	S	S	M	S	M	S	M	M	L
<b>CO4</b>	S	S	S	M	S	M	S	S	M	S
<b>CO5</b>	S	S	S	M	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low



Course code	Web Programming		L	T	P	C
Core/Elective/Supportive	Skill based Subject – 1		5	0	0	3
Pre-requisite	Students should have basic knowledge on internet and world wide web.		Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To enhance the knowledge of students in web programming</li> <li>2. To learn about the scripting languages HTML and its elements</li> <li>3. To understand concept of DHTML to integrate dynamic web pages</li> <li>4. To understand XML, CSS and XSL for formatting the web pages</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts of Internet, WWW, browsers and Email and protocols.				K1	
2	Understand and apply the HTML, HTML elements and formatting styles				K1-K3	
3	Knowledge on creating tables, forms and DHTML				K3	
4	Understand the structure of XML document, DTD and Schema				K1-K3	
5	Knowledge on working with SML, Style sheets and XSL				K1-K4	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Introduction to Internet</b>				<b>15 hours</b>	
Introduction to Internet – World Wide Web – Browsers: Introduction – Popular Web Browsers – know your browsers – Electronic Mail: Introduction – E-mail networks and servers – E-mail protocols – <b>WSDL-SOAP</b> .						
<b>Unit:2</b>	<b>HTML</b>				<b>12 hours</b>	
HTML : Introduction – Getting started – Creating and saving an HTML document – Document Layout of HTML Page – HTML elements – Some other formatting Styles – Hypertext Links.						
<b>Unit:3</b>	<b>HTML &amp; DHTML</b>				<b>15 hours</b>	
HTML (contd): URLs – Images – HTML tables – Forms- <b>Frame</b> – Metatages.Interactivity Tools and Multimedia: Introduction – DHTML – Scripting Languages – Java – ASP- <b>jQuery</b> .						
<b>Unit:4</b>	<b>XML basics and DTD</b>				<b>15 hours</b>	
XML :XML basics – Introduction – need for XML – Advantages – Working with an XML Document – Structure of an XML Document – DTD- XML Schema.						
<b>Unit:5</b>	<b>XML Schema and XSL</b>				<b>15 hours</b>	
XML (contd) : Working with XML Schema – Declaring Attributes – XML namespaces – Reusing Schema Components – Grouping elements and attributes. XML Style sheets : Introduction – CSS – extensible Style Sheet language – Formatting Data based on controls – Displaying data in a Tabular Format.						

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Internet and Web Design, ITL Education, Macmillan India Ltd.	
2	HTML and XML an Introduction, NIIT, Prentice Hall of India Pvt. Ltd	
<b>Reference Books</b>		
1	World Wide Web Design with HTML, C. Xavier, 2007, TMH.	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	S	M	S	L
<b>CO2</b>	L	M	S	M	M	L	S	L	S	L
<b>CO3</b>	S	S	L	M	M	M	S	M	S	M
<b>CO4</b>	S	M	S	M	S	M	S	M	S	M
<b>CO5</b>	M	S	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low





# **Fourth Semester**

Course code	System Software and Operating Systems		L	T	P	C
Core/Elective/Supportive	Core : 6		6	0	0	4
Pre-requisite	Students Should have the basic knowledge in computer.		Syllabus Version	2021-22 (Only)		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To understand the processing of programs on a computer system to design and implementation of language processor.</li> <li>2. To enhance the ability of program generation through expansion and gain knowledge about Code optimization using software tools.</li> <li>3. Students will gain knowledge of basic operating system concepts.</li> <li>4. To have an in-depth understanding of process concepts, deadlock and memory management.</li> <li>5. To provide an exposure to scheduling algorithms, devices and information management.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Know the program generation and program execution activities in detail					K1
2	Understand the concepts of Macro Expansions and Gain the knowledge of Editing processes					K2-K3
3	Remember the basic concepts of operating system					K1
4	Understand the concepts like interrupts, deadlock , memory management and file management					K2
5	Analyze the need for scheduling algorithms and implement different algorithms used for representation, scheduling, and allocation in DOS and UNIX operating system.					K1-K4
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION TO SYSTEM SOFTWARE</b>				<b>12 hours</b>	
Introduction–System Software and machine architecture. Loader and Linkers: Basic Loader Functions –Assembler- Machine dependent loader features –Machine independent loader features – Loaderdesign options						
<b>Unit:2</b>	<b>MACHINE AND COMPILER</b>				<b>15 hours</b>	
Machine dependent compiler features – Intermediate form of the program – Machine dependent code optimization – Machine independent compiler features – Compiler design options – Division into passes – Interpreters – p-code compilers – Compiler-compilers.						
<b>Unit:3</b>	<b>OPERATING SYSTEM</b>				<b>15 hours</b>	
What is an Operating System? – Process Concepts: Definition of Process – Process States – Process States Transition – Interrupt Processing – Interrupt Classes – Storage Management: Real Storage: Real Storage Management Strategies – Contiguous versus Non-contiguous storage allocation – Single User Contiguous Storage allocation- Fixed partition multiprogramming – Variable partition multiprogramming.						
<b>Unit:4</b>	<b>VIRTUAL STORAGE</b>				<b>15 hours</b>	

Virtual Storage: Virtual Storage Management Strategies – Page Replacement Strategies – Working Sets – Demand Paging – Page Size. Processor Management: Job and Processor Scheduling: Preemptive Vs Non-preemptive scheduling – Priorities – Deadline scheduling.		
<b>Unit:5</b>	<b>DEVICE AND INFORMATION MANAGEMENT</b>	<b>15 hours</b>
Device and Information Management Disk Performance Optimization: Operation of moving head disk storage – Need for disk scheduling – Seek Optimization – File and Database Systems: File System – Functions – Organization – Allocating and freeing space – File descriptor – Access control matrix.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Leland L.Beck, System Software: An Introduction to Systems Programming, Pearson, Third Edition.	
2	H.M. Deitel, Operating Systems, 2 <sup>nd</sup> Edition, Perason, 2003.	
<b>Reference Books</b>		
1	Achy8ut S. Godbole, Operating Systems, TMH, 2002.	
2	John J. Donovan, Systems Programming, TMH, 1991.	
3	D.M. Dhamdhare, Systems Programming and Operating Systems, 2 <sup>nd</sup> Revised Edition, TMH.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	M	S	M	M	M	M	L
<b>CO2</b>	S	S	S	S	S	M	M	M	S	L
<b>CO3</b>	S	M	M	M	S	M	S	S	S	L
<b>CO4</b>	S	S	S	M	S	S	S	M	M	M
<b>CO5</b>	S	S	S	M	S	S	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	Linux and Shell Programming		L	T	P	C
Core/Elective/Supportive	Core : 7		6	0	0	4
Pre-requisite	Before starting the course students should have the basic knowledge about operating system and C programming.	Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>Linux is a multi-user and multi-tasking operating system and after learning the concepts of an operating system</li> <li>Student will be able to write simple shell programming using Linux utilities, pipes and filters.</li> <li>The file system, process management and memory management are discussed.</li> <li>Various commands used by Linux shell is also discussed which makes the users to interact with each other.</li> <li>Bourne shell programming is dealt in depth which can be used to develop applications.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Describe the architecture and features of Linux Operating System and distinguish it from other Operating System.					K1
2	Develop Linux utilities to perform File processing, Directory handling, User Management and display system configuration					K2-K3
3	Develop shell scripts using pipes, redirection, filters and Pipes					K2
4	Apply and change the ownership and file permissions using advance Unix commands.					K3
5	Build Regular expression to perform pattern matching using utilities and implement shell scripts for real time applications.					K3-K6
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>12 hours</b>	
Introduction to LINUX Operating System: Introduction – The LINUX Operating System.						
<b>Unit:2</b>	<b>MANAGING FILES AND DIRECTORIES</b>				<b>15 hours</b>	
Managing Files and Directories: Introduction – Directory Commands in LINUX – File Commands in LINUX.						
<b>Unit:3</b>	<b>VI EDITOR</b>				<b>15 hours</b>	
Creating files using the vi editor: Text editors – The vi editor. Managing Documents: Locating files in LINUX – Standard files – Redirection – Filters – Pipes.						
<b>Unit:4</b>	<b>SECURING FILES</b>				<b>15 hours</b>	
Securing files in LINUX: File access permissions – viewing File access permissions – Changing File access permissions. Automating Tasks using Shell Scripts: Introduction – Variables- <b>Linux System Commands</b> -Local and Global Shell variables – Command Substitution.- <b>Linux Networking</b>						

<b>Unit:5</b>	<b>CONDITIONAL EXECUTION IN SHELL SCRIPTS</b>	<b>15 hours</b>
Using Conditional Execution in Shell Scripts: Conditional Execution – The case...esac Construct. Managing repetitive tasks using Shell Scripts: Using Iteration in Shell Scripts – The while construct – until construct – for construct – break and continue commands – Simple Programs using Shell Scripts.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Operating System LINUX, NIIT, PHI, 2006, Eastern Economy Edition.	
2	N.B. Venkateswarlu , Introduction to Linux: Installation and Programming, BS Publications, 2008, 1 <sup>st</sup> Edition	
<b>Reference Books</b>		
1	Richard Petersen, Linux: The Complete Reference, Sixth Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi, Edition 2008.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://spoken-tutorial.org/">http://spoken-tutorial.org/</a>	
2	<a href="https://www.tutorialspoint.com/linux/index.htm">https://www.tutorialspoint.com/linux/index.htm</a>	
3	<a href="https://www.javatpoint.com/linux-system-admin-commands">https://www.javatpoint.com/linux-system-admin-commands</a>	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	M	S	M	M	M	M	L
<b>CO2</b>	S	S	S	M	S	M	M	M	M	L
<b>CO3</b>	S	S	S	M	S	M	S	S	S	M
<b>CO4</b>	S	S	S	M	S	M	S	S	S	M
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	Programming Lab – LINUX and SHELL PROGRAMMING		L	T	P	C
Core/Elective/Supportive	Core Lab: 5		0	0	6	4
Pre-requisite	Students should have the prior basic knowledge in operating system.	Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Describe the architecture and features of Linux Operating System</li> <li>2. To create programs in the Linux environment using Linux utilities and commands.</li> <li>3. Student is given an introduction of Linux shell commands and they will be able to write own shell scripts.</li> <li>4. Shell programming is dealt in depth which can be used to develop applications.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Develop Linux utilities to perform File processing, Directory handling and User Management				K1, K2	
2	Understand and develop shell scripts using pipes, redirection, filters, Pipes and display system configuration				K2-K3	
3	Develop simple shell scripts applicable to file access permission network Administration				K3	
4	Apply and change the ownership and file permissions using advance Unix commands.				K4-K5	
5	Create shell scripts for real time applications.				K6	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Programs</b>					<b>36 hours</b>	
1. Write a shell script to stimulate the file commands: rm, cp, cat, mv, cmp, wc, split, diff.						
2. Write a shell script to show the following system configuration : <ol style="list-style-type: none"> <li>a. currently logged user and his log name</li> <li>b. current shell , home directory , Operating System type , current Path setting , current working directory</li> <li>c. show currently logged number of users, show all available shells</li> <li>d. show CPU information like processor type , speed</li> <li>e. show memory information</li> </ol>						
3. Write a Shell Script to implement the following: pipes, Redirection and tee commands.						
4. Write a shell script for displaying current date, user name, file listing and directories by getting user choice.						
5. Write a shell script to implement the filter commands.						
6. Write a shell script to remove the files which has file size as zero bytes.						
7. Write a shell script to find the sum of the individual digits of a given number.						
8. Write a shell script to find the greatest among the given set of numbers using command line arguments.						
9. Write a shell script for palindrome checking.						



10. Write a shell script to print the multiplication table of the given argument using for loop.	
11. Write a shell script to stimulate the system admin commands :man,uptime,pkill,user, info,service	
12. Write a shell script to stimulate the networking commands:ip,traceroute,ping	
	<b>Total Lecture hours</b>
	<b>36 hours</b>
<b>Text Book(s)</b>	
1	Operating System LINUX, NIIT, PHI, 2006, Eastern Economy Edition.
2	N.B. Venkateswarlu , Introduction to Linux: Installation and Programming, BS Publications, 2008, 1 <sup>st</sup> Edition
<b>Reference Books</b>	
1	Richard Petersen, Linux: The Complete Reference, Sixth Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi, Edition 2008.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.w3resource.com/linux-exercises/">https://www.w3resource.com/linux-exercises/</a>
2	<a href="http://spoken-tutorial.org/">http://spoken-tutorial.org/</a>

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	S	M	M	M
<b>CO3</b>	S	S	S	M	S	M	S	S	M	M
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code		Lab – Web Programming	L	T	P	C
Core/Elective/Supportive		Skill Based Subject 2 (Lab) :1	0	0	4	3
Pre-requisite		Basic knowledge in internet and basic of html.	Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To gain knowledge about how to develop web applications</li> <li>2. To create web applications using HTML</li> <li>3. To create web applications using HTML with Style sheets</li> <li>4. To design interactive web sites with all the features given in Web programming</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the problems and create applications in basics of web programming					K2-K4, K6
2	Understand and develop Web pages with formatting styles.					K2-K3
3	Apply the features in HTML to present the details given					K3
4	Analyze the problem, apply the concept for developing applications					K4-K5
5	Create web sites of real time applications					K6
K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create						
<b>Programs</b>						<b>36 hours</b>
1. Develop a HTML document which displays you name as <h1> heading and displays any four of your friends. Each of your friend's names must appear as hot text. When you click your friend's name, it must open another HTML document, which tells about your friend.						
2. Write names of several countries in a paragraph and store it as an HTML document, world.html. Each country name must be a hot text. When you click India (for example), it must open india.html and it should provide a brief introduction about India.						
3. Design a HTML document describing you. Assign a suitable background design and background color and a text color.						
4. Develop a HTML document to print the following: Who can use the solar heaters? Anybody with a regular hot water demand. In houses for domestic purposes (cooking, bathing and washing). For engineering / chemical industries, dairies and textile/leather process plants, to –preheat boiler feed water. For hostels, hospitals, guest houses and industrial canteens. For food-processing plants and for process applications.						
5. Write a HTML document to print the following: The family has the following facilities: 1. Own House Living area 2400 square feet, Separate bungalow, Car shed, 2 Car Maruti Esteem, Registration Number TN 38 A 9650, 1996 Model, Farm, 35 acres Coconut Groves, 10 acres Mango Groves.						
6. Write a HTML document to print your class Time Table.						
7. Develop a Complete Web Page using Frames and Framesets which gives the Information						

about a Hospital using HTML.	
8. Write a HTML document to print your Bio-Data in the following format: NAME Religion Community Street Town District State Address PIN Code Office Phone Residence Mobile Educational Qualification Degree University/Institute Month& year Grade / Mark	
9. Develop complete set of web pages to describe your skills in various areas using HTML.	
10. Develop a web site to publish your family and the details of each member using HTML.	
11. Develop a HTML document to display a Registration Form for an inter-collegiate function.	
12. Develop a HTML document to design Alumni Registration form of your college.	
<b>13. Develop a HTML document to design College website.</b>	
<b>Total Lecture hours</b>	<b>36 hours</b>
<b>Text Book(s)</b>	
1	Internet and Web Design, ITL Education, Macmillan India Ltd.
2	HTML and XML an Introduction, NIIT, Prentice Hall of India Pvt. Ltd
<b>Reference Books</b>	
1	World Wide Web Design with HTML, C. Xavier, 2007, TMH.

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	L	M	M	M
<b>CO3</b>	L	S	M	M	S	M	S	S	M	M
<b>CO3</b>	S	M	S	S	M	S	S	M	S	S
<b>CO4</b>	M	S	S	S	M	S	M	S	S	L
<b>CO5</b>	S	M	L	S	S	M	S	S	M	S

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# **Fifth Semester**

Course code	RDBMS & Oracle			L	T	P	C	
Core/Elective/ Supportive	Core : 8			6	0	0	4	
Pre-requisite	Basic knowledge about the data, table and database in computers			Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>								
The main objectives of this course are to: <ol style="list-style-type: none"> <li>1. The course describes the data, organizing the data in database, database administration.</li> <li>2. To grasp the different issues involved in the design of a database system.</li> <li>3. To study the physical and logical database designs and database modeling like relational, Hierarchical, network models, database security, integrity and normalization.</li> <li>4. It also gives introduction to SQL language to retrieve the data from the database with suitable application development.</li> <li>5. Provide strong foundation of database concepts and to introduce students to application development in DBMS.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Understand the basic concepts of Relational Data Model, Entity-Relationship Model and process of Normalization						K1-K2	
2	Understand and construct database using Structured Query Language (SQL) in Oracle9i environment.						K1-K3	
3	Learn basics of PL/SQL and develop programs using Cursors, Exceptions, Procedures and Functions.						K1-K4	
4	Understand and use built-in functions and enhance the knowledge of handling multiple tables						K1-K3	
5	Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML)						K2-K4	
K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create								
<b>Unit:1</b>	<b>DATABASE CONCEPTS</b>					<b>15 hours</b>		
Database Concepts: A Relational approach: Database – Relationships – DBMS – <b>Difference between DBMS &amp; RDBMS</b> - Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De-normalization – Another Example of Normalization. <b>Features of RDBMS : ACID – CRUD.</b>								
<b>Unit:2</b>	<b>ORACLE9i</b>					<b>15 hours</b>		
Oracle9i: Overview: Personal Databases – Client/Server Databases – Oracle9i an introduction – SQL *Plus Environment – SQL – Logging into SQL *Plus – SQL *Plus Commands – Errors & Help – Alternate Text Editors – SQL *Plus Worksheet – I SQL *Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.								
<b>Unit:3</b>	<b>WORKING WITH TABLE</b>					<b>15 hours</b>		
Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from								

Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions – Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.		
<b>Unit:4</b>	<b>PL/SQL</b>	<b>15 hours</b>
PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions – Save Point – Commit – Rollback.		
<b>Unit:5</b>	<b>PL/SQL COMPOSITE DATA TYPES</b>	<b>12 hours</b>
PL/SQL Composite Data Types: <b>Introduction</b> - Records – Tables – arrays. Named Blocks: Procedures – Functions – Packages – Triggers – Data Dictionary Views.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Database Systems using Oracle, Nilesh Shah, 2 <sup>nd</sup> edition, PHI.	
2	E-Book : Diana Lorentz, “Oracle® Database SQL Reference”, ORACLE, Dec, 2005.	
3	E-Book : Bill Pribyl, Steven Feuerstein, “Oracle PL/SQL Programming”, O’Reilly Media, Inc., 6 <sup>th</sup> Edition, February 2014.	
<b>Reference Books</b>		
1	Database Management Systems, Majumdar & Bhattacharya, 2007, TMH.	
2	Database Management Systems, Gerald V. Post, 3 <sup>rd</sup> edition, TMH.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.digimat.in/nptel/courses/video/106105175/L01.html">http://www.digimat.in/nptel/courses/video/106105175/L01.html</a>	
2	<a href="https://www.tutorialspoint.com/oracle_sql/index.htm">https://www.tutorialspoint.com/oracle_sql/index.htm</a>	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	M	M	M	L
<b>CO2</b>	S	S	S	M	S	M	M	M	M	L
<b>CO3</b>	S	S	S	S	S	S	S	S	M	M
<b>CO4</b>	S	S	S	S	S	M	S	S	M	L
<b>CO5</b>	S	S	S	S	S	M	S	S	M	L

\*S-Strong; M-Medium; L-Low

Course code	Visual Basic			L	T	P	C	
Core/Elective/Supportive	Core : 9			6	0	0	4	
Pre-requisite	Knowledge in programming language and oopsconcept.			Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. The main aim of the course is to cover visual basic programming skills required for modern software development.</li> <li>2. To study the advantages of Controls available with visual basic.</li> <li>3. To gain a basic understanding of database access and management using data controls.</li> <li>4. To facilitate the learner to carry out project works using the tools available in VB and MS Access.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Demonstrate fundamental skills in utilizing the tools of a visual environment such as command, menus and toolbars.						<b>K1</b>	
2	Implement SDI and MDI applications using forms, dialogs and other types of GUI components.						<b>K2</b>	
3	Understand the connectivity between VB with MS-ACCESS database.						<b>K3</b>	
4	Implement the methods and techniques to develop projects.						<b>K4</b>	
5	Attain a good practical skill of managing ODBC and Data Access Objects						<b>K2-K4</b>	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>INTRODUCTION TO VB</b>					<b>15 hours</b>		
Getting Started with VB6, Programming Environment, working with Forms, Developing an application, Variables, Data types and Modules, procedures and control structures, arrays. Working with Controls: Creating and using controls, working with control arrays- <b>Data Visualization.</b>								
<b>Unit:2</b>	<b>MENUS IN VB</b>					<b>15 hours</b>		
Menus, Mouse events and Dialog boxes: Mouse events, Dialog boxes, MDI and Flex grid: MDI, Using the Flex grid control-Inheritance Margin.								
<b>Unit:3</b>	<b>ODBC AND DATA ACCESS OBJECTS</b>					<b>15 hours</b>		
ODBC and Data Access Objects: Data Access Options, ODBC, Remote data objects, ActiveX EXE and ActiveX DLL: Introduction, Creating an ActiveX EXE Component, Creating ActiveX DLL Component.								
<b>Unit:4</b>	<b>OBJECT LINKING AND EMBEDDING</b>					<b>15 hours</b>		
Object Linking and Embedding: OLE fundamentals, Using OLE Container Control, Using OLE Automation objects, OLE Drag and Drop, File and File System Control: File System Controls, Accessing Files.								
<b>Unit:5</b>	<b>CONTROLS IN VB</b>					<b>12 hours</b>		
Additional controls in VB: sstab control, setting properties at runtime, adding controls to tab, list control, tabstrip control, MS Flexgrid control, Why ADO, Establishing a reference, Crystal and								

<b>Data reports-Debugging.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Visual Basic 6.0 Programming, Content Development Group, TMH, 8 <sup>th</sup> reprint, 2007. <b>(Unit I to Unit IV)</b>	
2	Programming with Visual Basic 6.0, Mohammed Azam, Vikas Publishing House, Fourth Reprint, 2006. <b>(Unit V)</b>	
<b>Reference Books</b>		
1	Gray Cornell (2003), "Visual Basic 6 from ground up" TMH, New Delhi, 1 <sup>st</sup> Edition,	
2	Deitel and Deitel, T.R.Nieto (1998), "Visual Basic 6 – How to Program", Pearson Education. First Edition.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	L	M	M	M	M	M	L
<b>CO2</b>	S	S	S	M	M	M	S	S	M	L
<b>CO3</b>	S	S	S	S	S	M	S	S	S	M
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code		Programming Lab – VB & Oracle	L	T	P	C
<b>Core/Elective/Supportive</b>		<b>Core Lab : 6</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>4</b>
<b>Pre-requisite</b>	Students should have the theoretical knowledge in visual basic and oops concept.		<b>Syllabus Version</b>		<b>2022-23 Onwards</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To develop applications using Graphical User Interface tools.</li> <li>2. To understand the design concepts.</li> <li>3. To design and build database systems and demonstrate their competence.</li> <li>4. To create requirement analysis and specification for software applications.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the concepts of Visual Basic.					<b>K1</b>
2	Learn the advantages of Controls in VB					<b>K2</b>
3	Design and develop the event- driven applications using Visual Basic framework.					<b>K3</b>
4	Apply the knowledge of database methods.					<b>K4</b>
5	Learn basics of PL/SQL and develop programs using Cursors, Exceptions, Procedures and Functions					<b>K6</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Programs</b>						<b>36 hours</b>
1. Construction of an Arithmetic Calculator (Simple).						
2. Writing simple programs using loops and decision-making statements.						
<ol style="list-style-type: none"> <li>a. Generate Fibonacci series.</li> <li>b. Find the sum of N numbers.</li> </ol>						
3. Write a program to create a menu and MDI Forms.						
4. Write a program to display files in a directory using Drive ListBox, Dir ListBox and File ListBox control and open, edit and save text file using Rich text box control.						
5. Write a program to illustrate Common Dialog Control and to open, edit and save text file.						
6. Write a program to implement animation using timers.						
<b>7. Write a program in VB to store student information</b>						
8. Write a simple VB program to accept a number as input and convert it into						
<ol style="list-style-type: none"> <li>a. Binary</li> <li>b. Octal</li> <li>c. Hexa-decimal</li> </ol>						
9. Create a table for Employee details with Employee Number as primary key and following fields: Name, Designation, Gender, Age, Date of Joining and Salary. Insert at least ten rows and perform various queries using any one Comparison, Logical, Set, Sorting and Grouping operators.						
10. Write a PL/SQL to update the rate field by 20% more than the current rate in inventory table which has the following fields: ProNo, ProName and Rate. After updating the table a new field (Alter) called for Number of item and place for values for the new field without using PL/SQL block.						

11. Write a PL/SQL program to implement the concept of Triggers	
12. Write a PL/SQL program to implement the concept “Procedures”.	
13. Write a VB program to manipulate the student mark list with oracle database connectivity program.	
<b>Total Lecture hours</b>	
<b>36 hours</b>	
<b>Text Book(s)</b>	
1	Visual Basic 6.0 Programming, Content Development Group, TMH, 8 <sup>th</sup> reprint, 2007. <b>(Unit I to Unit IV)</b>
2	Programming with Visual Basic 6.0, Mohammed Azam, Vikas Publishing House, Fourth Reprint, 2006. <b>(Unit V)</b>
3	E-Book : Bill Pribyl, Steven Feuerstein, “Oracle PL/SQL Programming”, O’Reilly Media, Inc., 6 <sup>th</sup> Edition, February 2014.
<b>Reference Books</b>	
1	Gray Cornell (2003), ”Visual Basic 6 from ground up” TMH, New Delhi, 1 <sup>st</sup> Edition,
2	Deitel and Deitel, T.R.Nieto (1998), “Visual Basic 6 – How to Program”, Pearson Education. First Edition.

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	L	M	L	S	M	M	L
<b>CO3</b>	S	S	S	L	M	M	S	M	S	L
<b>CO3</b>	S	S	S	M	S	M	S	S	S	M
<b>CO4</b>	S	S	S	M	S	M	S	S	M	M
<b>CO5</b>	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	Introduction to Compiler Design		L	T	P	C
Core/Elective/Supportive	Elective : I		6	0	0	4
Pre-requisite	Basic knowledge in translators, compilation of high level language programming		Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To understand the use of translators and compiler</li> <li>2. To enable students to learn the phases of a compiler</li> <li>3. To familiar with context free grammars, regular expressions and parsing techniques</li> <li>4. To learn about the intermediate codes in translation</li> <li>5. To enable the students to learn about code generations</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the use of translators and compiler, structure of a compiler					<b>K1</b>
2	Understand and apply the context free grammars and parsing techniques					<b>K1-K4</b>
3	Understand and remember the syntax directed translations, intermediate codes					<b>K2</b>
4	Understand the run time storage schemes, error detection and recovery					<b>K3</b>
5	Understand and apply knowledge on code optimization and code generator					<b>K2-K4</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Introduction to Compilers</b>				<b>15 hours</b>	
Introduction to Compilers: Compilers and Translator – Need of Translator – The structure of a Compiler – Lexical analysis – Syntax analysis – Intermediate code generation – optimization – code generation – Compiler – writing tools. Finite automata and lexical Analysis: The role of the lexical analysis - Identifying Lexemes– A simple approach to the design of lexical analyzers- Regular expressions to finite automata – Minimizing the number of states of a DFA.						
<b>Unit:2</b>	<b>Syntactic programming languages and Parsing Techniques</b>				<b>15 hours</b>	
The Syntactic specification of programming languages: context free grammars – derivations and parse trees – capabilities of context free grammars. Basic parsing techniques: Parsers – shift – reduce parsing – operator – precedence parsing – top down parsing – predictive parsers- <b>Finding first and follow.</b>						
<b>Unit:3</b>	<b>Syntax directed Translation and Symbol Table</b>				<b>15 hours</b>	
Syntax – directed translation: syntax – directed translation schemes – implementation of syntax – directed translators – intermediate code – postfix notation – parse trees and syntax trees – 3 address code – quadruples and triples – translation of assignment statements – Boolean expressions – statements that alter the flow of control. Symbol tables: the contents of a symbol table – data structures for symbol table – representing scope information.						
<b>Unit:4</b>	<b>Storage allocation and Error detection and recovery</b>				<b>15 hours</b>	
Run time storage administration: Implementation of a simple stack allocation scheme – implementation of block-structured languages – storage allocation in block structured languages. Error deduction and recovery: errors – lexical phase errors – syntactic phase errors – semantic						

errors.		
<b>Unit:5</b>	<b>Code Optimization and Generation</b>	<b>12 hours</b>
Introduction of code optimization: The principle sources of optimization – loop optimization – the DAG representation of basic blocks – value numbers and algebraic laws – Global data flow analysis. Code generation: Object programs – problems in code generation – a machine model – a simple code generator – register allocation and assignment – code generation from DAGs – peephole optimization.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Principles of Compiler Design, Alfred V.Aho, Jeffrey D.Ullman, Narosa Publishing House.	
<b>Reference Books</b>		
1	Steven S. Muchnick, “Advanced Compiler Design and Implementation”, Morgan Kaufmann Publishers an imprint of Elsevier 2014.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	L	M	M	M	M	M	L
<b>CO2</b>	M	S	M	M	M	M	S	S	M	L
<b>CO3</b>	S	M	S	S	S	M	S	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	L	S	M	M	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	PHP & Scripting Languages		L	T	P	C
Core/Elective/Supportive	Elective : I		6	0	0	4
Pre-requisite	Basic knowledge on HTML and CSS and OOPs concept.		Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To understand the scripting languages used while developing web applications</li> <li>2. To enable students to learn VB script and Java script for implementing event procedures.</li> <li>3. To familiar SSI and Cookies and plugins</li> <li>4. To learn about the server side scripting language to build web applications</li> <li>5. To enable the students to learn how to build applications in PHP with database.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basics of .VB script and Java script					<b>K1</b>
2	Understand the I/O handling, data validation, Activex control and validation					<b>K2</b>
3	Understand and remember the java script objects, form validations, cookies and Plugins					<b>K2</b>
4	Understand the sever side scripting language basics					<b>K3</b>
5	Knowledge on PHP objects, cookies, connecting remote files, and database connections					<b>K2-K4</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Introduction to .NET Framework</b>				<b>15 hours</b>	
VB Script and Java Script: Language structure – control structure – Procedures and functions – Error handling.						
<b>Unit:2</b>	<b>File I/O, Object Oriented Concepts and Message Queues</b>				<b>15 hours</b>	
VB Script: Input & Output – Data Validation –Integration with Forms – Activex Control & Scripting						
<b>Unit:3</b>	<b>VB.NET IDE and Controls</b>				<b>15 hours</b>	
Java Script: Form Validation – SSI and Cookies – Frames and Windows – MIME Types – Plugins						
<b>Unit:4</b>	<b>VB.NET &amp; ASP.NET</b>				<b>15 hours</b>	
PHP: Server side scripting Language: Basic syntax – Types – Variables – Constants – Expressions – Operators – Control Structures.						
<b>Unit:5</b>	<b>Web Services</b>				<b>12 hours</b>	
PHP: Functions – Classes and Objects – HTML forms – HTTP authentication with PHP – Cookies Setting Cookies with PHP- Handling file uploads – Using remote files – Connection handling – Database Connections. <b>Data base Connectivity with sql</b>						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>3 hours</b>	
Expert lectures, online seminars – webinars						

	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Christopher J.Goddard, Mark White, Mastering VB Script, Galgotia Publications, New Delhi.	
2	Lee Purcell, Mary Jane Mara, The ABCs of Javascript.	
<b>Reference Books</b>		
1	Steven Holzner, PHP: The Complete Reference.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	L	M	M	M	M	M	L
<b>CO2</b>	S	S	L	M	M	S	S	M	M	L
<b>CO3</b>	M	M	S	M	S	M	M	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	L	S	M	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low



Course code	PYTHON Programming			L	T	P	C
Core/Elective/Supportive	Elective : I			6	0	0	4
Pre-requisite	Knowledge on logic of the programs and oops concept.			Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. To introduce the fundamentals of Python Programming.</li> <li>2. To teach about the concept of Functions in Python.</li> <li>3. To impart the knowledge of Lists, Tuples, Files and Directories.</li> <li>4. To learn about dictionaries in python.</li> <li>5. To explores the object-oriented programming, Graphical programming aspects of python with help of built in modules..</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remembering the concept of operators, data types, looping statements in Python programming.					<b>K1</b>	
2	Understanding the concepts of Input / Output operations in file..					<b>K2</b>	
3	Applying the concept of functions and exception handling					<b>K3</b>	
4	Analyzing the structures of list, tuples and maintaining dictionaries					<b>K4</b>	
5	Demonstrate significant experience with python program development environment					<b>K4-K6</b>	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>BASICS OF PYTHON</b>					<b>10 hours</b>	
BASICS : Python – Variables – Executing Python from the Command Line – Editing Python Files – Python Reserved Words – Basic Syntax-Comments – Standard Data Types – Relational Operators – Logical Operators – Bit Wise Operators – Simple Input and Output.							
<b>Unit:2</b>	<b>CONTROL STATEMENTS</b>					<b>10 hours</b>	
CONTROL STATEMENTS: Control Flow and Syntax – Indenting – if Statement – statements and expressions- string operations- Boolean Expressions –while Loop – break and continue – for Loop. LISTS: List-list slices – list methods – list loop – mutability – aliasing – cloning lists – list parameters. TUPLES: Tuple assignment, tuple as return value –Sets – Dictionaries- <b>Data visualization</b>							
<b>Unit:3</b>	<b>FUNCTIONS</b>					<b>10 hours</b>	
FUNCTIONS: Definition – Passing parameters to a Function – Built-in functions- VariableNumber of Arguments – Scope – Type conversion-Type coercion-Passing Functions to a Function – Mapping Functions in a Dictionary – Lambda – Modules – Standard Modules – sys – math – time – dir – help Function.							
<b>Unit:4</b>	<b>ERROR HANDLING</b>					<b>12 hours</b>	
ERROR HANDLING: Run Time Errors – Exception Model – Exception Hierarchy – Handling Multiple Exceptions – Data Streams – Access Modes Writing – Data to a File Reading – Data From a File – Additional File Methods – Using Pipes as Data Streams – Handling IO Exceptions – Working with Directories.							

<b>Unit:5</b>	<b>OBJECT ORIENTED FEATURES</b>	<b>12 hours</b>
OBJECT ORIENTED FEATURES: Classes Principles of Object Orientation – Creating Classes – Instance Methods – File Organization – Special Methods – Class Variables – Inheritance – Polymorphism – Type Identification – Simple Character Matches – Special Characters – Character Classes – Quantifiers – Dot Character – Greedy Matches – Grouping – Matching at Beginning or End – Match Objects – Substituting – Splitting a String – Compiling Regular Expressions.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>55 hours</b>
<b>Text Book(s)</b>		
1	Mark Summerfield, Programming in Python 3: A Complete introduction to the Python Language , Addison-Wesley Professional, 2009.	
2	Martin C. Brown, PYTHON: The Complete Referencel, McGraw-Hill, 2001	
3	E. Balagurusamy (2017), “Problem Solving and Python Programming”, McGraw-Hill, First Edition.	
<b>Reference Books</b>		
1	Allen B. Downey, “Think Python: How to Think Like a Computer Scientist”, 2 <sup>nd</sup> edition, Updated for Python 3, Shroff/O’Reilly Publishers, 2016	
2	Guido van Rossum and Fred L. Drake Jr, —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011	
3	Wesley J Chun, —Core Python Applications Programmingl, Prentice Hall, 2012.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	L	S	M	L	M	S	S
<b>CO2</b>	S	S	S	L	S	M	L	M	S	S
<b>CO3</b>	S	S	S	L	S	M	L	M	S	S
<b>CO4</b>	S	S	S	L	S	M	L	M	S	S
<b>CO5</b>	S	S	S	L	S	M	L	M	S	S

\*S-Strong; M-Medium; L-Low



<b>Course code</b>		<b>CASE Tools Concepts and Applications</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Skill based Subject – 3</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Pre-requisite</b>	Basic knowledge in software project, testing in SDLC		<b>Syllabus Version</b>		<b>2022-23 Onwards</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To enhance the basic software engineering methods and practices.</li> <li>2. To learn the techniques for developing software systems.</li> <li>3. To understand the object oriented design.</li> <li>4. To understand software testing approaches</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts of software engineering					K1
2	Apply the software engineering models in developing software applications					K2-K3
3	Implement the object oriented design in various projects					K4
4	Knowledge on how to do a software project with in-depth analysis.					K3
5	To inculcate knowledge on Software engineering concepts in turn gives a roadmap to design a new software project.					K1-K4
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>SOFTWARE ENGINEERING</b>					<b>15 hours</b>
Data Modeling: Business Growth-Organizational Model-Case Study of student MIS-What is the purpose of such Models-Understanding the business-Types of models-model development approach-the case for structural development-advantages of using a case tool. System analysis and design-what is DFD-General Rules for Drawing DFD-Difference Between Logical data flowdiagram and Physical data flow diagram-Software verses Information Engineering-How case tools store information.						
<b>Unit:2</b>	<b>SOFTWARE DESIGN</b>					<b>12 hours</b>
Approach used to solve the problem statement: How to deal with a problem statement-Data flow diagram for Payroll System-Presentation Diagram for Payroll System-schematics of the model-Forms-Screens-Menu Screens-Data entry Screens-Report Output Format-Utilities. Installation of Ubridge and Synthesis: How to use the tools in Ubridge Synthesis for case-Installation of Ubridge Synthesis-Computer Aided Software Engineering-Getting Ubridge to work-Setup-Assign-Housekeep-The Ubridge page.						
<b>Unit:3</b>	<b>SOFTWARE TESTING</b>					<b>15 hours</b>
Introduction to Ubridge: Introduction – Main flow of the system prototyping your Report-Introducing the Novice Model of the Operation. Introducing Synthesis – Synthesis basic – Synthesis – Menu Drawing the screen-Requirement Definition-Diagram-Data Dictionary- <b>Software Testing Basics- Types of Software Testing- Principles of software testing</b>						
<b>Unit:4</b>	<b>SOFTWARE CONFIGURATION MANAGEMENT</b>					<b>15 hours</b>
Diagram definition tool: Introduction-Starting DDT-Drawing your own Icon – Defining the connection rules-Rebuilding your icon. Object oriented methodologies: Rambaugh et.al._s object modeling techniques-The Booch methodology –The Jacobson et.al. Methodologies-Pattern-Frame works-The Unified Approach.						

<b>Unit:5</b>	<b>ESTIMATION</b>	<b>15 hours</b>
Introduction to UML-UML Diagram-Class Diagram-Use Case Diagram-Interaction Diagram-Sequence Diagram-Collaboration Diagram-State Chart Diagram-Activity Diagram-Component Diagram-Deployment Diagram.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Case Tools Concepts and Applications, Ivan N Bayross, BPB Publications	
2	Object Oriented System Development using the Unified Modeling Language, McGraw Hill International edition.	
<b>Reference Books</b>		
1	Software Engineering: A Practitioner's Approach, Roger S Pressman, McGraw Hill International Edition.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	L	M	M	M	M	M	L
<b>CO2</b>	S	S	L	S	M	S	S	S	M	L
<b>CO3</b>	M	M	M	M	S	M	M	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	L	S	S	M	S	S	M	M	M

\*S-Strong; M-Medium; L-Low



**Sixth  
Semester**

Course code	Graphics & Multimedia			L	T	P	C	
Core/Elective/Supportive	Core: 10			5	0	0	4	
Pre-requisite	Basic knowledge in 2D, 3D and multimedia file formats			Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>								
The main objectives of this course are to: <ol style="list-style-type: none"> <li>1. Design and apply two dimensional graphics and transformations.</li> <li>2. Design and apply three dimensional graphics and transformations.</li> <li>3. Apply Illumination, color models and clipping techniques to graphics.</li> <li>4. Understood Different types of Multimedia File Format.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Explain applications, principles, commonly used and techniques of computer graphics and algorithms for Line-Drawing, Circle- Generating and Ellipse-Generating.						K2	
2	Students will get the concepts of 2D and 3D, Viewing, Curves and surfaces, Hidden Line/surface elimination techniques						K3	
3	Studies concepts of Multimedia Systems, Text, Audio and Video tools						K3	
4	Compressing audio and video using MPEG-1 and MPEG-2						K4	
5	Creates Animation with special effects using algorithms						K6	
K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create								
<b>Unit:1</b>	<b>OUTPUT PRIMITIVES</b>					<b>15 hours</b>		
Introduction to Computer Graphics -Generative Graphics-Output Primitives: Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms. Attributes of Output Primitives: Line Attributes – Curve attributes – Color and Grayscale.								
<b>Unit:2</b>	<b>2D GEOMETRIC TRANSFORMATIONS</b>					<b>15 hours</b>		
2D Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. 2D Viewing: The Viewing Pipeline – Viewing Co-ordinate Reference .								
<b>Unit:3</b>	<b>TEXT</b>					<b>15 hours</b>		
Text: Types of Text – Font – Insertion of Text – Text compression – File formats. Image: Image Types – Seeing Color – Color Models – Basic Steps for Image Processing – Scanner – Digital Camera – CMS – Independent Color Models – Image Processing software – File Formats – Image Output on Monitor and Printer.								
<b>Unit:4</b>	<b>AUDIO</b>					<b>15 hours</b>		
Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound								

– Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio – Synthesizers – MIDI – Basics of Staff Notation – Sound Card – Audio Transmission – Audio File formats and CODECs – Audio Recording Systems – Audio and Multimedia – Voice Recognition and Response – Audio Processing Software.		
<b>Unit:5</b>	<b>VIDEO AND ANIMATION</b>	<b>12 hours</b>
Video: Analog Video Camera – Transmission of Video Signals – Video Signal Formats – Television Broadcasting Standards – PC Video – Video File Formats and CODECs – Video Editing – Video Editing Software. Animation: Types of Animation – Computer Assisted Animation – Creating Movement – Principles of Animation – Some Techniques of Animation – Animation on the Web – Special Effects.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Computer Graphics, Donald Hearn, M.Pauline Baker, 2 <sup>nd</sup> edition, PHI. (UNIT-I: 3.1-3.6,4.1-4.5 & UNIT-II: 5.1-5.4,6.1-6.5)	
2	Principles of Multimedia, Ranjan Parekh, 2007, TMH. (UNIT III: 4.1-4.7,5.1-5.16 UNIT-IV: 7.1-7.3,7.8-7.14,7.18-7.20,7.22,7.24,7.26-28 UNIT-V: 9.5-9.10,9.13,9.15,10.10-10.13)	
<b>Reference Books</b>		
1	Computer Graphics, Amarendra N Sinha, Arun D Udai, TMH.	
2	Multimedia: Making it Work, Tay Vaughan, 7 <sup>th</sup> edition, TMH.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	S	S	S	M
<b>CO2</b>	S	S	S	M	S	M	M	M	S	M
<b>CO3</b>	S	M	M	M	S	M	M	M	S	M
<b>CO4</b>	S	S	S	M	S	M	M	M	S	M
<b>CO5</b>	S	S	S	M	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		Project Work Lab	L	T	P	C
Core/Elective/Supportive		Core: 11	0	0	5	8
Pre-requisite	Students should have the strong knowledge in any one of the programming languages in this course.		Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to: <ol style="list-style-type: none"> <li>To understand and select the task based on their core skills.</li> <li>To get the knowledge about analytical skill for solving the selected task.</li> <li>To get confidence for implementing the task and solving the real time problems.</li> <li>Express technical and behavioral ideas and thought in oral settings.</li> <li>Prepare and conduct oral presentations</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Formulate a real world problem and develop its requirements develop a design solution for a set of requirements.					<b>K3</b>
2	Test and validate the conformance of the developed prototype against the original requirements of the problem.					<b>K5</b>
3	Work as a responsible member and possibly a leader of a team in developing software solutions.					<b>K3</b>
4	Express technical ideas, strategies and methodologies in written form. Self-learn new tools, algorithms and techniques that contribute to the software solution of the project.					<b>K1-K4</b>
5	Generate alternative solutions, compare them and select the optimum one.					<b>K6</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>AIM OF THE PROJECT WORK</b>						
6. The aim of the project work is to acquire practical knowledge on the implementation of the programming concepts studied.						
7. Each student should carry out individually one project work and it may be a work using the software packages that they have learned or the implementation of concepts from the papers studied or implementation of any innovative idea focusing on application oriented concepts.						
8. The project work should be compulsorily done in the college only under the supervision of the department staff concerned.						
<b>Viva Voce</b>						
1. Viva-Voce will be conducted at the end of the year by both Internal (Respective Guides) and External Examiners, after duly verifying the <b>Annexure Report</b> available in the College, for a total of 200 marks at the last day of the practical session.						
2. Out of 200 marks, 160 marks for project report and 40 marks for Viva Voce.						

**Project Report Format**

**PROJECT WORK**

**TITLE OF THE DISSERTATION**

Bonafide Work Done by

STUDENT NAME

REG. NO.

Dissertation submitted in partial fulfillment of the requirements for the award of

<Name of the Degree>

of

Providence College for Women (Autonomous)

Coonoor-643 104.

College Logo

Signature of the Guide

Signature of the HOD

Submitted for the Viva-Voce Examination held on \_\_\_\_\_

Internal Examiner

External Examiner

Month – Year

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3.2 Input Design

3.3 Output Design

3.4 Database Design

System Development

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### 5. Conclusion

### Bibliography

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- B. Table Structure
- C. Sample Coding
- D. Sample Input
- E. Sample Output

Mapping with Programme Outcomes										
Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	M	S	S	S	S
CO2	S	S	S	S	S	M	S	S	S	S
CO3	S	S	S	M	M	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code		Programming Lab – Graphics & Multimedia	L	T	P	C
Core/Elective/Supportive		Core Lab : 7	0	0	6	4
Pre-requisite		Students should have the basic knowledge on C and C++ to do computer graphics and multimedia applications.	Syllabus Version		2022-23 Onwards	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To learn the basic principles of 2-dimensional computer graphics.						
2. Provide an understanding of how to scan convert the basic geometrical primitives, how to transform the shapes to fit them as per the picture definition.						
3. Provide an understanding of mapping from a world coordinates to device coordinates, clipping and projections.						
4. To be able to discuss the application of computer graphics concepts in the development of computer games, information visualization and business applications.						
9. To comprehend and analyse the fundamentals of animation, virtual reality, underlying technologies, principles and applications.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the basic concepts of computer graphics.					<b>K1</b>
2	Design scan conversion problems using C and C++ programming.					<b>K2</b>
3	Apply clipping and filling techniques for modifying an object.					<b>K3</b>
4	Understand the concepts of different type of geometric transformation of objects in 2D.					<b>K4</b>
5	Understand and develop the practical implementation of modeling, rendering, viewing of objects in 2D					<b>K6</b>
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>						
<b>Programs</b>					<b>36 hours</b>	
<b>Graphics</b>						
1. Write a program to rotate an image.						
2. Write a program to drop each word of a sentence one by one from the top.						
3. Write a program to draw a line using DDA Algorithm.						
4. Write a program to move a car with sound effect.						
5. Write a program to bounce a ball and move it with sound effect.						
6. Write a program to test whether a given pixel is inside or outside or on a polygon.						
<b>7. Write a program to generate a Bar Graph.</b>						
<b>8. Write a program to generate a Pie Chart</b>						
<b>Multimedia</b>						
7. Create Sun Flower using Photoshop.						
8. Animate Plane flying in the Clouds using Photoshop.						
9. Create Plastic Surgery for the Nose using Photoshop.						
10. Create See-through text using Photoshop.						
11. Create a Web Page using Photoshop.						
12. Convert Black and White Photo to Color Photo using Photoshop.						
<b>Total Lecture hours</b>					<b>36 hours</b>	

<b>Text Book(s)</b>	
1	Computer Graphics, Donald Hearn, M.Pauline Baker, 2 <sup>nd</sup> edition, PHI.
2	Principles of Multimedia, Ranjan Parekh, 2007, TMH.
<b>Reference Books</b>	
1	Computer Graphics, Amarendra N Sinha, Arun D Udai, TMH.
2	Multimedia: Making it Work, Tay Vaughan, 7 <sup>th</sup> edition, TMH.

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	M	S	M	L	L	M	L
<b>CO2</b>	S	S	S	M	M	M	M	M	M	L
<b>CO3</b>	S	S	S	M	S	M	M	M	M	L
<b>CO4</b>	S	S	S	S	S	M	M	M	M	M
<b>CO5</b>	S	S	S	S	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low



Course code	Computer Networks			L	T	P	C	
Core/Elective/Supportive	Elective : II			5	0	0	4	
Pre-requisite	Students should have the knowledge on computer connectivity and connectivity peripherals.			Syllabus Version		2022-23 Onward		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>To identify various components in a data communication system and understand state-of-the-art in network protocols, architectures and applications.</li> <li>To enable students through the concepts of computer networks, different models and their involvement in each stage of network communication.</li> <li>To educate the concepts of terminology and concepts of the OSI reference model and the TCP/IP reference model and protocols such as TCP, UDP and IP.</li> <li>To be familiar with the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks.</li> <li>Introduce the student to a network routing for IP networks and how a collision occurs and how to solve it and how a frame is created and character count of each frame.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember the organization of computer networks, factors influencing computer network development and the reasons for having variety of different types of networks.						K1	
2	Understand Internet structure and can see how standard problems are solved and the use of cryptography and network security.						K2	
3	Apply knowledge of different techniques of error detection and correction to detect and solve error bit during data transmission.						K3	
4	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies						K4	
5	Knowledge about different computer networks, reference models and the functions of each layer in the models						K2-K4	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>BASICS OF NETWORKS AND OSI MODEL</b>					<b>15 hours</b>		
Network Hardware: LAN – WAN – MAN – Wireless – Home Networks. Network Software: Protocol Hierarchies – Design Issues for the Layers – Connection-oriented and connectionless services – Service Primitives – The Relationship of services to Protocols. Reference Models: OSI Reference Model – TCP/IP reference Model – Comparison of OSI and TCP/IP – Critique of OSI and protocols – Critique of the TCP/IP Reference model.								
<b>Unit:2</b>	<b>PHYSICAL LAYER</b>					<b>15 hours</b>		
PHYSICAL LAYER – Guided Transmission Media: Magnetic Media – Twisted Pair – Coaxial Cable – Fiber Optics. Wireless Transmission: Electromagnetic Spectrum – Radio Transmission – Microwave Transmission – Infrared and Millimeter Waves – Light Waves. Communication Satellites: Geostationary, Medium-Earth Orbit, Low Earth-orbit Satellites – Satellites versus Fiber.								
<b>Unit:3</b>	<b>DATA-LINK LAYER</b>					<b>15 hours</b>		
DATA-LINK LAYER: Error Detection and correction – Elementary Data-link Protocols – Sliding Window Protocols. MEDIUM-ACCESS CONTROL SUB LAYER: Multiple Access Protocols – Ethernet – Wireless LANs – Broadband Wireless – Bluetooth.								

<b>Unit:4</b>	<b>NETWORK LAYER</b>	<b>15 hours</b>
NETWORK LAYER: Routing algorithms – Congestion Control Algorithms. TRANSPORT LAYER: Elements of Transport Protocols – Internet Transport Protocols: TCP.		
<b>Unit:5</b>	<b>APPLICATION LAYER</b>	<b>12 hours</b>
APPLICATION LAYER: DNS – E-mail. APPLICATION LAYER PROTOCOLS: <b>Simple Network Management Protocol, File Transfer Protocol, Simple Mail Transfer Protocol, Telnet.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Computer Networks, Andrew S. Tanenbaum, 4 <sup>th</sup> edition, PHI. ( <i>UNIT-I:1.2-1.4 UNIT-II:2.2-2.4 UNIT-III:4.2-4.6 UNIT-IV:5.2,5.3,6.2,6.5 UNIT-V:7.1,7.2,8.1-8.4</i> )	
<b>Reference Books</b>		
1	Data Communication and Networks, Achyut Godbole, 2007, TMH.	
2	Computer Networks: Protocols, Standards, and Interfaces, Uyles Black, 2 <sup>nd</sup> ed, PHI	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	S	L	M	S	M	S	M	M
<b>CO2</b>	S	S	L	S	M	S	M	M	S	L
<b>CO3</b>	M	M	S	M	S	M	M	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	M	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	Dot Net Programming			L	T	P	C	
Core/Elective/Supportive	Elective : II			5	0	0	4	
Pre-requisite	Basic knowledge in web programming and VB programming			Syllabus Version		2022-23 Onward		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
6. To understand .NET framework to develop web centric applications.								
7. To enable students to learn the basics of I/O and object oriented programming.								
8. To familiar with VB.NET and ASP.NET IDE								
9. To learn about the ASP.NET controls and ADO.NET.								
10. To enable the students to learn how to build and deployment of web services.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Understand the basics of .NET framework and the object oriented programming.						K1	
2	Understand the procedures, File I/O, Error handling and Message queues.						K2	
3	Understand and remember the components in VB.NET IDE, ADO.NET and also the window forms.						K2	
4	Understand the HTML server controls, Web controls, Validation controls and state management and tracing.						K3	
5	Knowledge on SOAP, building web services and deploying and publishing web services, Finding and consuming web services.						K2-K4	
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>Introduction to .NET Framework</b>					<b>15 hours</b>		
Introduction to .Net: .NET framework- difference between VB6 and VB .Net-Object-Oriented programming and VB .Net-Data types-Variables-Operators-Arrays-Conditional logic- <b>Invoking Property and Methods.</b>								
<b>Unit:2</b>	<b>File I/O, Object Oriented Concepts and Message Queues</b>					<b>15 hours</b>		
Procedures- Dialog boxes- File IO and System objects- Error handling- Namespaces-Classes and Objects- Multithreading- <b>Thread synchronization</b> -Message Queue- <b>File Stream and Memory Stream.</b>								
<b>Unit:3</b>	<b>VB.NET IDE and Controls</b>					<b>15 hours</b>		
VB.Net IDE-Compiling and Debugging-Customizing- Data access: ADO.Net- Visual studio .Netand ADO .Net. Windows Forms: Controls-Specific controls- Irregular forms.								
<b>Unit:4</b>	<b>VB.NET &amp; ASP.NET</b>					<b>15 hours</b>		
VB.Net and web: Introduction to ASP .Net page framework- HTML server controls- Web controls- Validation controls- Events-CSS- State management- Tracing- Security.								
<b>Unit:5</b>	<b>Web Services</b>					<b>12 hours</b>		
UNIT V: Web Services: Introduction- Infrastructure- SOAP-Building web services- Deploying and publishing web services- Finding and consuming web services								
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>3 hours</b>		
Expert lectures, online seminars – webinars								

	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Bill Evjen, Jason Beres, et.al, Visual Basic .Net programming, Wiley Dreamtech India (p) Ltd. ISBN 81-265-0254-1. (Chapters: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 25, 26, 27, 29, 31, 32, 33, 34, 35, 36, 38, 39, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50).	
<b>Reference Books</b>		
1	Fergal Grimes, Microsoft .NET for programmers, Shroff Publishers & Distributors (P) Ltd. ISBN 81-7366-540-0.	
2	Thuan Thai & Hoang Q.Lam, .NET Framework Essentials, Shroff Publishers & Distributors (P) Ltd. ISBN 81-7366-654-7	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	S	L	M	M	M	M	M	L
<b>CO2</b>	M	S	L	M	M	S	S	M	L	L
<b>CO3</b>	M	M	S	M	S	S	S	L	S	M
<b>CO4</b>	M	M	S	S	S	S	M	S	M	S
<b>CO5</b>	S	L	S	M	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	Distributed Computing			L	T	P	C	
Core/Elective/ Supportive	Elective : II			5	0	0	4	
Pre-requisite	Basic knowledge in databases, client and server			Syllabus		2022-23 Onwards		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. To enable the students to learn the concepts and techniques in distributed computing and client server computing.</li> <li>2. To learn the pros and cons of distributed computing, distributed databases.</li> <li>3. To familiar with design considerations in distributed computing</li> <li>4. To understand the client server models and R* projection techniques</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Understand the concepts and techniques in distributed computing and client server computing.						<b>K1</b>	
2	Understand the pros and cons of distributed processing, databases, challenges.						<b>K2</b>	
3	Understand the design considerations in distributed computing						<b>K2</b>	
4	Understand and analyse the client server network model, file server, printer server and email server.						<b>K3</b>	
5	Understand and obtaining the Knowledge on distributed databases, R* project techniques.						<b>K2-K4</b>	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>Introduction to Distributed Systems</b>					<b>15 hours</b>		
Distributed Systems: Fully Distributed Processing systems – Networks and interconnection structures – designing a distributed processing g system - Complicating factors, Problem areas								
<b>Unit:2</b>	<b>Challenges and Managing Distributed Resources</b>					<b>15 hours</b>		
Distributed systems: Pros and Cons of distributed processing – Distributed databases – the challenges of distributed data – loading, factors – managing the distributed resources division of responsibilities.								
<b>Unit:3</b>	<b>Design Considerations</b>					<b>15 hours</b>		
Design considerations: Communication Line loading – line loading calculations- partitioning and allocation - data flow systems – dimensional analysis- network database design considerations- ration analysis- database decision trees- synchronization of network databases								
<b>Unit:4</b>	<b>Client Server Network Model</b>					<b>15 hours</b>		
Client server network model: Concept – file server – printer server and e-mail server- <b>Peer to Peer Network.</b>								
<b>Unit:5</b>	<b>Distributed Databases</b>					<b>12 hours</b>		
Distributed databases: An overview, distributed databases- principles of distributed databases – levels of transparency- distributed database design- the R* project techniques problem of heterogeneous distributed databases.								

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	John A. Sharp, An introduction to distributed and parallel processing, Blackwell Scientific Publication(Unit I & III)	
2	Uyless D. Black, Data communication and distributed networks (unit II)	
3	Joel M.Crichlow , Introduction to distributed & parallel computing (Unit IV)	
<b>Reference Books</b>		
1	Stefans Ceri, Ginseppe Pelagatti , Distributed database Principles and systems, McGraw Hill	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	S	L	M	M	M	M	M	L
<b>CO2</b>	S	S	L	S	S	S	S	S	M	L
<b>CO3</b>	S	M	L	M	S	M	S	L	S	M
<b>CO4</b>	M	M	M	S	S	S	M	S	M	M
<b>CO5</b>	M	L	M	M	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low



Course code		Internet of Things (IoT)	L	T	P	C
Core/Elective/Supportive		Elective: III	5	0	0	4
Pre-requisite	Students should have the basic understanding of logical circuits and hardware architecture.	Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To learn the concepts of IoT and its protocols.</li> <li>2. To learn how to analysis the data in IoT.</li> <li>3. To develop IoT infrastructure for popular applications.</li> <li>4. To report about the IoT privacy, security and vulnerabilities solution</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To understand the fundamentals of Internet of Things.					K1
2	To know the basics of communication protocols and the designing principles of Web connectivity.					K2
3	To gain the knowledge of Internet connectivity principles					K2-K3
4	Designing and develop smart city in IoT					K2-K3
5	Analyzing and evaluate the data received through sensors in IOT.					K4-K5
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create						
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>15 hours</b>
Introduction - Definition & characteristics of IoT - physical design of IoT - logical design of IoT - IoT enabling Technologies - IoT levels & Deployment templates. Domain specific Iots : Home Automation - cities - Environment - Energy - retail - logistics - Agriculture - Industry i Health and life style.						
<b>Unit:2</b>	<b>IOT and M2M</b>					<b>12 hours</b>
IoT and M2M - Deference between Iot and M2M - SDN and NFV for lot - IoT systems management - SNMP - YANG – NETOPEER						
<b>Unit:3</b>	<b>IOT SPECIFICATION</b>					<b>15 hours</b>
IoT platforms design Methodology - purpose and specification - process specification - Domain model specification - Information model specification - Service specification - IoT level specification - functional view specification - operational view specification - Device and component Integrators - Application Development.						
<b>Unit:4</b>	<b>LOGICAL DESIGN USING PYTHON</b>					<b>15 hours</b>
Logical design using python - Installing python - type conversions - control flow - functions - modules - File handling - classes. IoT physical devices and End points, building blocks of IoT device Raspberry Pi - Linux on Raspberry Pi - Raspberry Pi interfaces-Iot Network Design and Architecture- <b>Security Privacy and Trust.</b>						

<b>Unit:5</b>	<b>IOT AND CLOUD COMPUTING</b>	<b>15 hours</b>
IoT physical servers & cloud computing - WAMP - Xively cloud for IoT - python Web application frame work - Amazon web services for IoT.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Internet of Things - A hands on Approach Authors: Arshdeep Bahga, Vijay Madisetti Publisher: Universities press.	
<b>Reference Books</b>		
1	Internet of Things - Srinivasa K.G., Siddesh G.M. Hanumantha Raju R. Publisher: Cengage Learning India pvt. Ltd (2018)	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	L	M	M	M	M	M	L
<b>CO2</b>	S	S	L	M	M	S	S	M	M	L
<b>CO3</b>	M	M	S	M	S	M	M	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	L	S	M	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	Web Services		L	T	P	C
Core/Elective/ Supportive	Elective : III		5	0	0	4
Pre-requisite	Fundamentals of mark-up language, basic knowledge on distributed services.	Syllabus Version	2022-23 Onwards			
<b>Course Objectives:</b>						
The main objectives of this course are : <ol style="list-style-type: none"> <li>To familiar with distributed services, XML and web services, XML, SOAP, WSDL, UDDI specification.</li> <li>To learn about orchestration and refinement, transactions, security issues, the common attacks.</li> <li>To study the QOS metrics, mobile and wireless service, building real world web service applications.</li> <li>To learn about the deployment of Web services and applications onto application servers.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand about the distributed computing, web services, technologies and applications, XML document (WSDL) and the concepts of XML, protocol (SOAP), locating the remote web services					K1
2	Understand the concepts of UDDI and its specifications, Understand the concepts of system interface and its workflow, the common attacks.					K2
3	Examining the concepts of architecture of system to meet the user requirements and analyze the concepts of mobile and wireless services, Design and develop the real-world enterprise applications using web services.					K3
4	Analyzing the steps necessary to build and deploy the web services.					K4
5	Applying the applications created based on the web services on different web servers.					K4-K6
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create						
<b>Unit:1</b>	<b>Introduction to Web services</b>				<b>10 hours</b>	
UNIT I: Introduction to Web Services – Industry standards, Technologies and Concepts underlying Web Services – their support to Web Services, Applications that consume Web Services.						
<b>Unit:2</b>	<b>XML</b>				<b>10 hours</b>	
XML– its choice for web services – network protocols to back end databases technologies – SOAP, WSDL – exchange of information between applications in distributed environment –locating remote web services – its access and usage. UDDI specification – <b>RESTful Web Service- REST Vs SOAP</b>						
<b>Unit:3</b>	<b>Work flow, security attacks and QoS Metrics</b>				<b>10 hours</b>	
A brief outline of web services – conversation – static and interactive aspects of system interface and its implementation, work flow – orchestration and refinement, transactions, security issues – the common attacks – security attacks facilitated within web services quality of services –						

Architecting of systems to meet users requirement with respect to latency, performance, reliability, QOS metrics, Mobile and wireless services – energy consumption, network bandwidth utilization, portals and services management..		
<b>Unit:4</b>	<b>Building real world enterprise applications</b>	<b>12 hours</b>
Building real world enterprise applications using web services – sample source codes to develop web services – steps necessary to build and deploy web services and client applications to meet customer s requirement – Easier development, customization, maintenance, transactional requirements, seamless porting to multiple devices and platforms.		
<b>Unit:5</b>	<b>Deployment of Web services</b>	<b>12 hours</b>
Deployment of Web services and applications onto Tomcat application server and axis SOAP server (both are free wares) – Web services platform as a set of enabling technologies for XML based distributed computing.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>55 hours</b>
<b>Text Book(s)</b>		
1	Sandeep Chatterjee, James Webber, Developing Enterprise Web Services: An Architects Guide, Prentice Hall, Nov 2003.	
2	Keith Ballinger, NET Web services: Architecture and Implementation with .Net, Pearson Education, First Education Feb 2003.	
3	Sandeep Chatterjee, James Webber, Developing Enterprise Web Services: An Architects Guide, Prentice Hall, Nov 2003.	
<b>Reference Books</b>		
1	Ramesh Nagappan, Developing Java Web Services: Architecting and developing secure Web Services Using Java, John Wiley and Sons, 2003.	
2	Eric A Marks and Mark J Werrell, Executive Guide to Web Services, John Wiley and Sons, 2003	
3	Anne Thomas Manes, Web Services: A Managers Guide, Addison Wesley, 2003.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	S	L	M	S	M	S	M	M
<b>CO2</b>	S	S	L	S	M	S	M	M	S	L
<b>CO3</b>	M	M	S	M	S	M	M	L	S	M
<b>CO4</b>	M	S	M	S	S	S	M	S	M	S
<b>CO5</b>	S	M	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	Software Testing			L	T	P	C
Core/Elective/Supportive	Elective - III			5	0	0	4
Pre-requisite	Students should know about the software and Software Development Life Cycle.			Syllabus Version	2022-23 Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to: <ol style="list-style-type: none"> <li>1. To study fundamental concepts in software testing</li> <li>2. To discuss various software testing issues and solutions in software unit test, integration and system testing.</li> <li>3. To expose the advanced software testing topics, such as object-oriented software testing methods.</li> <li>4. List a range of different software testing techniques and strategies and be able to apply specific automated unit testing method to the projects.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Explain the basic concepts and the processes that lead to software testing					K2	
2	Design test cases from the given requirements using Black box testing techniques					K3	
3	Identify the test cases from Source code by means of white box testing techniques					K3	
4	Know about user acceptance testing and generate test cases for it					K4	
5	Examine the test adequacy criteria to complete the testing process					K4	
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create							
<b>Unit:1</b>	<b>SOFTWARE DEVELOPMENT LIFE CYCLE MODELS</b>					<b>15 hours</b>	
Software Development Life Cycle models: <b>Introduction</b> - Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models – <b>Manual Testing</b> . White-Box Testing: Static Testing – Structural Testing– Challenges in White - Box Testing. <b>Software Build Process</b> .							
<b>Unit:2</b>	<b>BLACK-BOX TESTING</b>					<b>15 hours</b>	
Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing – Integration Testing: Integration Testing as Type of Testing – Integration Testing as a Phase of Testing –Scenario Testing – Defect Bash.							
<b>Unit:3</b>	<b>SYSTEM AND ACCEPTANCE TESTING</b>					<b>15 hours</b>	
System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing –Acceptance Testing – Summary of Testing Phases.							
<b>Unit:4</b>	<b>PERFORMANCE TESTING</b>					<b>15 hours</b>	
Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. Regression Testing: What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.							

<b>Unit:5</b>	<b>TEST PLANNING, MANAGEMENT, EXECUTION AND REPORTING</b>	<b>12 hours</b>
Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. Test Metrics and Measurements: Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>3 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Software Testing Principles and Practices, Srinivasan Desikan & Gopalswamy Ramesh, 2006, Pearson Education. (UNIT-I: 2.1-2.5, 3.1-3.4 UNIT-II: 4.1-4.4, 5.1-5.5 UNIT III: 6 .1-6.7 (UNIT IV: 7.1-7.6, 8.1-8.5 UNIT-V: 15.1-15.6, 17.4-17.7)	
2	Limaye M.G., “Software Testing Principles, Techniques and Tools”, Second Reprint, TMH Publishers, 2010.	
3	Aditya P.Mathur, “Foundations of Software Testing”, 2nd Edition, Pearson Education, 2013.	
<b>Reference Books</b>		
1	Effective Methods of Software Testing, William E. Perry, 3rd ed, Wiley India.	
2	Software Testing, Renu Rajani, Pradeep Oak, 2007, TMH.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	M	S	M	L	L	M	L
<b>CO2</b>	S	S	S	M	M	M	M	M	M	L
<b>CO3</b>	S	S	S	M	S	M	M	M	M	L
<b>CO4</b>	S	S	S	S	S	M	M	M	M	M
<b>CO5</b>	S	S	S	S	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>Lab – CASE TOOLS LAB</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Skill Based Subject 4 (Lab) :2</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>
<b>Pre-requisite</b>	Students must have the basic understanding on verification and validations in software engineering.		<b>Syllabus Version</b>	2022-23 Onwards		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>To enable the students to get better understanding and knowledge in the field of CASE tools.</li> <li>To gain practical knowledge on developing case tools</li> <li>To develop UML diagrams for the real time problems</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Prepare the CASE tools for the given specification.					<b>K1, K2</b>
2	Understand and develop the UML diagram for real time applications.					<b>K2-K3</b>
3	Design the real time test cases					<b>K3</b>
4	Analyze the development of CASE tools					<b>K4-K5</b>
5	Design the CASE tools and generate VB code					<b>K6</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Programs</b>						<b>36 hours</b>
1. To design an ATM transfer system using UML diagram and to generate VB code.						
2. To design a student mark analysis using UML diagram and to generate VB code.						
3. To design a platform assignment system using UML diagram and to generate VB code.						
4. To design a railway reservation system using UML diagram and to generate VB code.						
5. To design an expert system for medicine field using UML diagram and to generate VB code.						
6. To design a stock maintenance system using UML diagram and to generate VB code.						
7. To design a quizzing system using UML diagram and to generate VB code.						
8. To design a remote computer monitoring system using UML diagram and to generate VB code.						
9. To design an online ticket reservation system using UML diagram and to generate VB code.						
10. To design an E-mail client server system using UML diagram and to generate VB code.						
<b>11. To design an Interfaces to a Diagram using UML diagram and to generate VB code</b>						
<b>12. To design a Library system using UML diagram and to generate VB code.</b>						
<b>Total Lecture hours</b>						<b>36 hours</b>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	M	S	M	S	L
<b>CO2</b>	L	M	S	M	M	L	S	L	S	L
<b>CO3</b>	S	S	L	M	M	M	S	M	S	M
<b>CO4</b>	S	M	S	M	S	M	S	M	S	M
<b>CO5</b>	M	S	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low





# Annexure

**BACHELOR OF COMPUTER APPLICATIONS**

Syllabus (2022 -2023 Onwards)

Program Code:



**DEPARTMENT OF COMPUTER APPLICATIONS**

**PROVIDENCE COLLEGE FOR WOMEN**

(Autonomous)

(Accredited with "A" Grade by NAAC)

Spring Field, Coonoor- 643 104,

THE NILGIRIS.

## THE COMPOSITION OF THE QUESTION PAPER FOR A MAXIMUM OF 50 MARKS

Internal AssessmentI INTERNAL ASSESSMENT

Time: 2 Hours

Max. Marks: 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 4 = 20)</b>		
Each question carries <i>four</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (2 x 10 = 20)</b>		
Each question carries <i>ten</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 17	Questions for Long Answers with internal choices (either (a) or (b) type)

II INTERNAL ASSESSMENT

Time: 2 Hours

Max. Marks: 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 4 = 20)</b>		
Each question carries <i>four</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)

<b>Section C - (2 x 10 = 20)</b>		
Each question carries <i>ten</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 17	Questions for Long Answers with internal choices (either (a) or (b) type)

**MODEL EXAMINATION**

**Time:** Three Hours

**Max. Marks:** 50

<b>NO. OF QUESTION</b>	<b>QUESTION NO</b>	<b>TYPE OF QUESTION</b>
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 3 = 15)</b>		
Each question carries <i>three</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (5 x 5 = 25)</b>		
Each question carries <i>five</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 20	Questions for Long Answers with internal choices (either (a) or (b) type)

**EXTERNAL EXAMINATION**

**Time:** Three Hours

**Max. Marks:** 50

<b>NO. OF QUESTION</b>	<b>QUESTION NO</b>	<b>TYPE OF QUESTION</b>
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 3 = 15)</b>		
Each question carries <i>three</i> marks		

Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (5 x 5 = 25)</b>		
Each question carries <i>five</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 20	Questions for Long Answers with internal choices (either (a) or (b) type)





# M.Sc COMPUTER SCIENCE



## Syllabus

Program Code: 4SC

**Autonomous**

Providence College for women  
(Autonomous)  
Accredited with 'A' grade by NAAC  
Spring field, Coonoor- 643 104  
The Nilgiris, India.

2022-2023  
(Onwards)

<b>Program Educational Objectives (PEOs)</b>	
The <b>M.Sc. CS</b> program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	To enrich the students with the clear picture of the course objectives and to map their requirements.
PEO2	To enable the students, to understand the core concepts, visualize and to apply them in the real time scenarios.
PEO3	To impart the need for consistent learning, importance of research & development for the welfare of the society and to the nation at large.

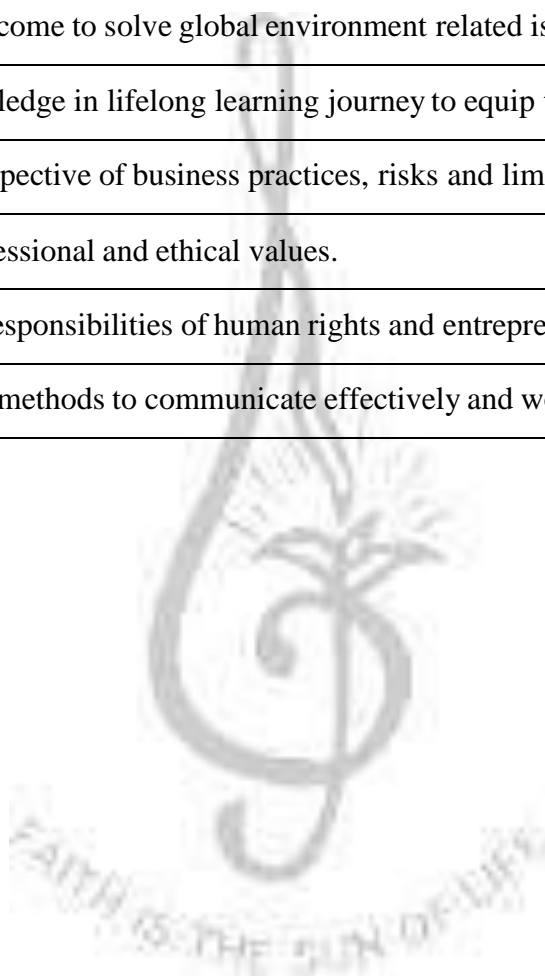




<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of <b>M.Sc. CS</b> program, the students are expected to	
PSO1	Able to analyze, design and develop problem solving skills in the discipline of computer science.
PSO2	Acquire evaluation of potential benefits of alternative solution in designing software and/or hardware systems in broad range of open source programming languages to withstand technological changes.
PSO3	Able to pursue careers in IT industry/ consultancy/ research and development, teaching and allied areas related to computer science.
PSO4	Adapt to the continuous technological change in computational science and update themselves to meet the industry requirements and standards.
PSO5	Apply the practices and strategies of computer science for software project development to deliver a quality software product and contribute to research in the chosen field and perform effectively.



<b>Program Outcomes (POs)</b>	
On successful completion of the <b>M.Sc. CS</b> program	
PO1	Develop creativity and problem solving skills with the knowledge of computing and mathematics.
PO2	Ability to develop and carry out experiments, interpret and infer data.
PO3	Design algorithms and develop software to aid solutions to industry and governments.
PO4	Review the latest technology and tool handling mechanism.
PO5	Analyze the outcome to solve global environment related issues.
PO6	Apply the knowledge in lifelong learning journey to equip themselves.
PO7	Identify the perspective of business practices, risks and limitations.
PO8	Work with professional and ethical values.
PO9	Formulate the responsibilities of human rights and entrepreneurial spirit.
PO10	Understand the methods to communicate effectively and work collectively.



**PROVIDENCE COLLEGE FOR WOMEN****(Autonomous)Coonoor 643 104****M.Sc Computer Science (CBCS PATTERN)***(For the students admitted from the academic year 2022-2023 onwards)***Scheme of Examination**

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	Paper I : Analysis & Design of Algorithms	4	5		50	50	100
	Paper II : Object Oriented Analysis and Design & C++	4	5		50	50	100
	Paper III : Python Programming	4	5		50	50	100
	Paper IV : Advanced Software Engineering	4	5		50	50	100
	Practical I: Algorithm and OOPS Lab	4		5	50	50	100
	Practical II : Python Programming Lab	4		5	50	50	100
<b>Total</b>		24	20	10			
<b>SECOND SEMESTER</b>							
	Paper V : Data Mining and Warehousing	4	4		50	50	100
	Paper VI Advanced Operating Systems	4	4		50	50	100
	Paper VII Advanced Java Programming	4	4		50	50	100
	Paper VIII : Artificial Intelligence & Machine Learning	4	4		50	50	100
	Elective – I	4	4		50	50	100
	Practical III: Data Mining Lab using R	4		5	50	50	100
	Practical IV: Advanced Java Programming Lab	4		5	50	50	100
<b>Total</b>		28	20	10			

<b>THIRD SEMESTER</b>							
	Paper IX : Digital Image Processing	4	4		50	50	100
	Paper X: Cloud Computing	4	4		50	50	100
	Paper XI: Network Security and Cryptography	4	4		50	50	100
	Paper XII : Data Science & Analytics	4	4		50	50	100
	Elective – II	4	4		50	50	100
	Practical V: Digital Image Processing Lab using MATLAB	4		4	50	50	100
	Practical VI : Cloud Computing Lab	4		4	50	50	100
	Practical VII : Web Application development & hosting	2		2	25	25	50
<b>Total</b>		30	20	10			
<b>FOURTH SEMESTER</b>							
	Project work and Viva-voce (200 marks)	8					200*
<b>Total</b>		8					200
<b>Grand Total</b>		90					2250
<b>ONLINE COURSES</b>							
1.	<b>#SWAYAM / MOOC</b>	2					
2.	<b>#Job oriented Certificate course</b>	2					



**First  
Semester**

<b>Course code</b>		<b>ANALYSIS &amp; DESIGN OF ALGORITHMS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>Core</b>		4			
<b>Pre-requisite</b>	Basic Data Structures & Algorithms		<b>Syllabus</b>	<b>Version</b>		
				<b>2022-23 (Onwards)</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Enable the students to learn the Elementary Data Structures and algorithms.</li> <li>2. Presents an introduction to the algorithms, their analysis and design</li> <li>3. Discuss various methods like Basic Traversal And Search Techniques, divide and conquer method, Dynamic programming, backtracking</li> <li>4. Understood the various design and analysis of the algorithms.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Get knowledge about algorithms and determines their time complexity. Demonstrate specific search and sort algorithms using divide and conquer technique.				K1,K2	
2	Gain good understanding of Greedy method and its algorithm.				K2,K3	
3	Able to describe about graphs using dynamic programming technique.				K3,K4	
4	Demonstrate the concept of backtracking & branch and bound technique.				K5,K6	
5	Explore the traversal and searching technique and apply it for trees and graphs.				K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>15 hours</b>	
Introduction: - Algorithm Definition and Specification – Space complexity-Time Complexity-Asymptotic Notations - <b>Properties of Asymptotic Notations</b> - Elementary Data Structure: Stacks and Queues – Binary Tree - Binary Search Tree - Heap – Heapsort- Graph.						
<b>Unit:2</b>	<b>TRAVERSAL AND SEARCH TECHNIQUES</b>				<b>15 hours</b>	
Basic Traversal And Search Techniques: Techniques for Binary Trees-Techniques for Graphs - Divide and Conquer: - General Method – Binary Search – Merge Sort – Quick Sort.						
<b>Unit:3</b>	<b>GREEDY METHOD</b>				<b>15 hours</b>	
The Greedy Method: - General Method – Knapsack Problem – Minimum Cost Spanning Tree – Single Source Shortest Path- <b>Job Sequencing with a Deadline.</b>						
<b>Unit:4</b>	<b>DYNAMIC PROGRAMMING</b>				<b>15 hours</b>	
Dynamic Programming - General Method – Multistage Graphs – All Pair Shortest Path – Optimal Binary Search Trees – 0/1 Knapsacks – Traveling Salesman Problem – Flow Shop Scheduling- <b>Longest Common Sub-sequence.</b>						

<b>Unit:5</b>	<b>BACKTRACKING</b>	<b>13 hours</b>
Backtracking: - General Method – 8-Queens Problem – Sum Of Subsets – Graph Coloring – Hamiltonian Cycles – Branch And Bound: - The Method – Traveling Salesperson.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Books</b>		
1	Ellis Horowitz,“Computer Algorithms”, Galgotia Publications.	
2	Alfred V.Aho,John E.Hopcroft,Jeffrey D.Ullman, "Data Structures and Algorithms".	
<b>Reference Books</b>		
1	Goodrich, “Data Structures & Algorithms in Java”, Wiley 3rd edition.	
2	Skiena,”The Algorithm Design Manual”,SecondEdition,Springer , 2008	
3	AnanyLevith,”Introduction to the Design and Analysis of algorithm”, Pearson Education Asia, 2003.	
4	Robert Sedgewick,Phillipe Flajolet,”An Introduction to the Analysis of Algorithms”, Addison-Wesley Publishing Company,1996.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/106/106106131/">https://nptel.ac.in/courses/106/106/106106131/</a>	
2	<a href="https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm">https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm</a>	
3	<a href="https://www.javatpoint.com/daa-tutorial">https://www.javatpoint.com/daa-tutorial</a>	
Course Designed By:		

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	S	L	M	S	S	M
<b>CO2</b>	S	S	S	S	S	M	S	M	S	M
<b>CO3</b>	S	S	S	S	S	M	S	M	S	M
<b>CO4</b>	S	S	S	S	S	M	S	M	S	M
<b>CO5</b>	S	S	S	S	S	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	<b>OBJECT ORIENTED ANALYSIS AND DESIGN &amp; C++</b>		L	T	P	C
Core/Elective/Supportive	Core		4			4
Pre-requisite	Basics of C++ and Object Oriented Concepts		Syllabus		Version 2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Present the object model, classes and objects, object orientation, machine view and model management view.						
2. Enables the students to learn the basic functions, principles and concepts of object oriented analysis and design.						
3. Enable the students to understand C++ language with respect to OOAD						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the concept of Object-Oriented development and modeling techniques					K1,K2
2	Gain knowledge about the various steps performed during object design					K2,K3
3	Abstract object-based views for generic software systems					K3
4	Link OOAD with C++ language					K4,K5
5	Apply the basic concept of OOPs and familiarize to write C++ program					K5,K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>OBJECT MODEL</b>				<b>15 hours</b>	
The Object Model: The Evolution of the Object Model – Elements of the Object Model – Applying the Object Model. Classes and Objects: The Nature of an Object – Relationship among Objects.						
<b>Unit:2</b>	<b>CLASSES AND OBJECTS</b>				<b>15 hours</b>	
Classes and Object: Nature of Class – Relationship Among classes – The Interplay of classes and Objects. Classification: The importance of Proper Classification –identifying classes and objects –Key Abstractions and Mechanism.						
<b>Unit:3</b>	<b>C++ INTRODUCTION</b>				<b>15 hours</b>	
Introduction to C++ - <b>Data Types –Operators</b> - Input and output statements in C++ - Declarations-control structures–Functions in C++.						
<b>Unit:4</b>	<b>INHERITANCE AND OVERLOADING</b>				<b>13 hours</b>	
Classes and Objects –Constructors and Destructors –operators overloading –Type Conversion-Inheritance – Arrays -Pointers and Arrays- <b>Multidimensional array</b>						



<b>Unit:5</b>	<b>POLYMORPHISM AND FILES</b>	<b>15 hours</b>
Memory Management Operators- Polymorphism – Virtual functions – Files – Exception Handling – String Handling -Templates.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Books</b>		
1	“Object Oriented Analysis and Design with Applications”, Grady Booch, Second Edition, Pearson Education.	
2	“Object -Oriented Programming with ANSI & Turbo C++”, Ashok N.Kamthane, First Indian Print -2003, Pearson Education.	
<b>Reference Books</b>		
1	Balagurusamy “Object Oriented Programming with C++”, TMH, Second Edition, 2003.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc19_cs48/preview">https://onlinecourses.nptel.ac.in/noc19_cs48/preview</a>	
2	<a href="https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs19/">https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs19/</a>	
3	<a href="https://www.tutorialspoint.com/object_oriented_analysis_design/ooad_object_oriented_analysis.htm">https://www.tutorialspoint.com/object_oriented_analysis_design/ooad_object_oriented_analysis.htm</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	M	S	M	S	S
<b>CO2</b>	S	S	S	M	S	M	S	M	S	S
<b>CO3</b>	S	S	S	M	S	M	S	M	S	S
<b>CO4</b>	S	S	S	M	S	M	S	M	S	S
<b>CO5</b>	S	S	S	M	S	M	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	PYTHON PROGRAMMING			L	T	P	C
Core/Elective/Supportive	Core			4			4
Pre-requisite	Basics of any OO Programming Language			Syllabus		version 2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Presents an introduction to Python, creation of web applications, network applications and working in the clouds</li> <li>2. Use functions for structuring Python programs</li> <li>3. Understand different Data Structures of Python</li> <li>4. Represent compound data using Python lists, tuples and dictionaries</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the basic concepts of Python Programming					K1,K2	
2	Understand File operations, Classes and Objects					K2,K3	
3	Acquire Object Oriented Skills in Python					K3,K4	
4	Develop web applications using Python					K5	
5	Develop Client Server Networking applications					K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>15 hours</b>	
<b>Python:</b> Introduction – Numbers – Strings – Variables – Lists – Tuples – Dictionaries – Sets– Comparison- <b>Features.</b>							
<b>Unit:2</b>	<b>CODE STRUCTURES</b>					<b>15 hours</b>	
<b>Code Structures:</b> if, elif, and else – Repeat with while – Iterate with for – Comprehensions – Functions – Generators – <b>Closures</b> - Decorators – Namespaces and Scope – Handle Errors with try and except – User Exceptions.							
<b>Unit:3</b>	<b>MODULES, PACKAGES AND CLASSES</b>					<b>15 hours</b>	
Modules, Packages, and Programs: Standalone Programs – Command-Line Arguments – Modules and the import Statement – The Python Standard Library. Objects and Classes: Define a Class with class – Inheritance – Override a Method – Add a Method – Get Help from Parent with super – In self Defense – Get and Set Attribute Values with Properties – Name Mangling for Privacy – Method Types – Duck Typing – Special Methods –Composition- <b>A short journey from Procedural to object approach.</b>							
<b>Unit:4</b>	<b>DATA TYPES AND WEB</b>					<b>13 hours</b>	
Data Types: Text Strings – Binary Data. Storing and Retrieving Data: File Input/Output – Structured Text Files – Structured Binary Files - Relational Databases – NoSQL Data Stores. Web: Web Clients – Web Servers – Web Services and Automation							

<b>Unit:5</b>	<b>SYSTEMS AND NETWORKS</b>	<b>15 hours</b>
Systems: Files –Directories – Programs and Processes – Calendars and Clocks. Concurrency: Queues – Processes – Threads – Green Threads and gevent – twisted – Redis. Networks: Patterns – The Publish-Subscribe Model – TCP/IP – Sockets – ZeroMQ –Internet Services – Web Services and APIs – Remote Processing – Big Fat Data and MapReduce – Working in the Clouds.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Books</b>		
1	Bill Lubanovic, “Introducing Python”, O’Reilly, First Edition-Second Release, 2014.	
2	Mark Lutz, “Learning Python”, O’Reilly, Fifth Edition, 2013.	
<b>Reference Books</b>		
1	David M. Beazley, “Python Essential Reference”, Developer’s Library, Fourth Edition, 2009.	
2	SheetalTaneja, Naveen Kumar, “Python Programming-A Modular Approach”, Pearson Publications.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.programiz.com/python-programming/">https://www.programiz.com/python-programming/</a>	
2	<a href="https://www.tutorialspoint.com/python/index.htm">https://www.tutorialspoint.com/python/index.htm</a>	
3	<a href="https://onlinecourses.swayam2.ac.in/aic20_sp33/preview">https://onlinecourses.swayam2.ac.in/aic20_sp33/preview</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	S	M
<b>CO2</b>	S	S	S	S	S	S	S	M	S	M
<b>CO3</b>	S	S	S	S	S	S	S	M	S	M
<b>CO4</b>	S	S	S	S	S	S	S	M	S	M
<b>CO5</b>	S	S	S	S	S	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	ADVANCED SOFTWARE ENGINEERING		L	T	P	C
Core/Elective/Supportive	Core		4			4
Pre-requisite	Basics of Software Engineering & SPM		Syllabus		Version 2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Introduce to Software Engineering, Design, Testing and Maintenance.</li> <li>2. Enable the students to learn the concepts of Software Engineering.</li> <li>3. Learn about Software Project Management, Software Design &amp; Testing.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand about Software Engineering process				K1,K2	
2	Understand about Software project management skills, design and quality management				K2,K3	
3	Analyze on Software Requirements and Specification				K3,K4	
4	Analyze on Software Testing, Maintenance and Software Re-Engineering				K4,K5	
5	Design and conduct various types and levels of software quality for a software project				K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>15 hours</b>	
Introduction: The Problem Domain – Software Engineering Challenges - Software Engineering Approach – Software Processes: Software Process – Characteristics of a Software Process – Software Development Process Models – <b>Software Coding - Introduction to Software Measurement and Metrics – Software Configuration.</b>						
<b>Unit:2</b>	<b>SOFTWARE REQUIREMENTS</b>				<b>15 hours</b>	
Software Requirements Analysis and Specification : Requirement engineering – Type of Requirements – Feasibility Studies – Requirements Elicitation – Requirement Analysis – Requirement Documentation – Requirement Validation – Requirement Management – SRS - Formal System Specification – Axiomatic Specification – Algebraic Specification - Case study: Student Result management system. Software Quality Management – Software Quality, Software Quality Management System, ISO 9000, SEI CMM.						
<b>Unit:3</b>	<b>PROJECT MANAGEMENT</b>				<b>15 hours</b>	
Software Project Management: Responsibilities of a software project manager – Project planning – Metrics for Project size estimation – Project Estimation Techniques – Empirical Estimation Techniques – COCOMO – Halstead’s software science – Staffing level estimation – Scheduling – Organization and Team Structures – Staffing – Risk management – Software Configuration Management – Miscellaneous Plan.						
<b>Unit:4</b>	<b>SOFTWARE DESIGN</b>				<b>15 hours</b>	

Software Design: Outcome of a Design process – Characteristics of a good software design – Cohesion and coupling - Strategy of Design – Function Oriented Design – Object Oriented Design - Detailed Design - IEEE Recommended Practice for Software Design Descriptions.		
<b>Unit:5</b>	<b>SOFTWARE TESTING</b>	<b>13 hours</b>
Software Testing: A Strategic approach to software testing – Terminologies – Functional testing – Structural testing – Levels of testing – Validation testing - Regression testing – Art of Debugging – Testing tools - Metrics-Reliability Estimation. Software Maintenance - MaintenanceProcess - Reverse Engineering – Software Re-engineering - Configuration Management Activities.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Books</b>		
1	An Integrated Approach to Software Engineering – Pankaj Jalote, Narosa Publishing House, Delhi, 3rd Edition.	
2	Fundamentals of Software Engineering – Rajib Mall, PHI Publication, 3rd Edition.	
<b>Reference Books</b>		
1	Software Engineering – K.K. Aggarwal and Yogesh Singh, New Age International Publishers, 3rd edition.	
2	A Practitioners Approach- Software Engineering, - R. S. Pressman, McGraw Hill.	
3	Fundamentals of Software Engineering - Carlo Ghezzi, M. Jarayeri, D. Manodrioli,PHIPublication.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.javatpoint.com/software-engineering-tutorial">https://www.javatpoint.com/software-engineering-tutorial</a>	
2	<a href="https://onlinecourses.swayam2.ac.in/cec20_cs07/preview">https://onlinecourses.swayam2.ac.in/cec20_cs07/preview</a>	
3	<a href="https://onlinecourses.nptel.ac.in/noc19_cs69/preview">https://onlinecourses.nptel.ac.in/noc19_cs69/preview</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	M	M
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	PRACTICAL I : ALGORITHM AND OOPS LAB		L	T	P	C
Core/Elective/Supportive	Core				4	4
Pre-requisite	Basic Programming of C++ language		Syllabus		Version 2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. This course covers the basic data structures like Stack, Queue, Tree , List.						
2. This course enables the students to learn the applications of the data structures using various techniques						
3. It also enable the students to understand C++ language with respect to OOAD concepts						
4. Application of OOPS concepts.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the concepts of object oriented with respect to C++				K1,K2	
2	Able to understand and implement OOPS concepts				K3,K4	
3	Implementation of data structures like Stack, Queue, Tree , List using C++				K4,K5	
4	Application of the data structures for Sorting, Searching using different techniques.				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>75 hours</b>	
1) Write a program to solve the tower of Hanoi using recursion.						
2) Write a program to traverse through binary search tree using traversals.						
3) Write a program to perform various operations on stack using linked list.						
<b>4) Write a program to display the numbers in reverse.</b>						
5) Write a program to perform various operation in circular queue.						
6) Write a program to sort an array of an elements using quick sort.						
7) Write a program to solve number of elements in ascending order using heap sort.						
8) Write a program to solve the knapsack problem using greedy method						
9) Write a program to search for an element in a tree using divide & conquer strategy.						
10) Write a program to place the 8 queens on an 8X8 matrix so that no two queens Attack.						
11) Write a C++ program to perform Virtual Function						
12) Write a C++ program to perform Parameterized constructor						
13) Write a C++ program to perform Friend Function						
14) Write a C++ program to perform Function Overloading						
15) Write a C++ program to perform Single Inheritance						
16) Write a C++ program to perform Employee Details using files.						
Expert lectures, online seminars – webinars						

<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Books</b>		
1	Goodrich, “Data Structures & Algorithms in Java”, Wiley 3rd edition.	
2	Skiena, ”The Algorithm Design Manual”, Second Edition, Springer , 2008	
<b>Reference Books</b>		
1	AnanyLevith, ”Introduction to the Design and Analysis of algorithm”, Pearson Education Asia, 2003.	
2	Robert Sedgewick, Phillipe Flajolet, ”An Introduction to the Analysis of Algorithms”, Addison-Wesley Publishing Company, 1996.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc19_cs48/preview">https://onlinecourses.nptel.ac.in/noc19_cs48/preview</a>	
2	<a href="https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs19/">https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs19/</a>	
3	<a href="https://www.tutorialspoint.com/object_oriented_analysis_design/ooad_object_oriented_analysis.htm">https://www.tutorialspoint.com/object_oriented_analysis_design/ooad_object_oriented_analysis.htm</a>	

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	S	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

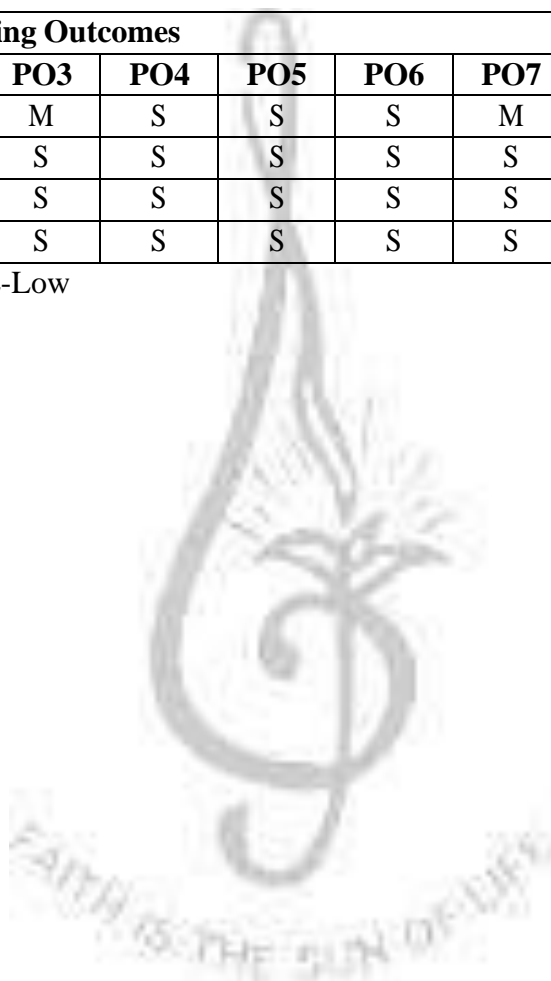
Course code	<b>PRACTICAL II : PYTHON PROGRAMMING LAB</b>		L	T	P	C
Core/Elective/Supportive	Core				4	4
Pre-requisite	Basics of any OO Programming Language		Syllabus		Version 2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. This course presents an overview of elementary data items, lists, dictionaries, sets and tuples</li> <li>2. To understand and write simple Python programs</li> <li>3. To Understand the OOPS concepts of Python</li> <li>4. To develop web applications using Python</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Able to write programs in Python using OOPS concepts				K1,K2	
2	To understand the concepts of File operations and Modules in Python				K2,K3	
3	Implementation of lists, dictionaries, sets and tuples as programs				K3,K4	
4	To develop web applications using Python				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>75 hours</b>	
Implement the following in Python:						
<ol style="list-style-type: none"> <li>1. Programs using elementary data items, lists, dictionaries and tuples</li> <li>2. Programs using conditional branches,</li> <li>3. Programs using loops.</li> <li>4. Programs using functions</li> <li>5. Programs using exception handling</li> <li>6. Programs using inheritance</li> <li>7. Programs using polymorphism</li> <li>8. Programs to implement file operations.</li> <li>9. Programs using modules.</li> <li>10. Programs for creating dynamic and interactive web pages using forms.</li> <li><b>11. Program to search any word in given string/sentence</b></li> </ol>						
<b>Total Lecture hours</b>					<b>75 hours</b>	
<b>Text Books</b>						
1	Bill Lubanovic, “Introducing Python”, O’Reilly, First Edition-Second Release, 2014.					
2	Mark Lutz, “Learning Python”, O’Reilly, Fifth Edition, 2013.					
<b>Reference Books</b>						



1	David M. Beazley, "Python Essential Reference", Developer's Library, Fourth Edition, 2009.
2	Sheetal Taneja, Naveen Kumar, "Python Programming-A Modular Approach", Pearson Publications.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.programiz.com/python-programming/">https://www.programiz.com/python-programming/</a>
2	<a href="https://www.tutorialspoint.com/python/index.htm">https://www.tutorialspoint.com/python/index.htm</a>
3	<a href="https://onlinecourses.swayam2.ac.in/aic20_sp33/preview">https://onlinecourses.swayam2.ac.in/aic20_sp33/preview</a>

Mapping with Programming Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	S	S	M	M	S	S
CO2	S	S	S	S	S	S	S	M	S	M
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low





**Second  
Semester**

<b>Course code</b>	<b>DATA MINING AND WAREHOUSING</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>Core</b>	4			4
<b>Pre-requisite</b>	Basics of RDBMS & Algorithms	<b>Syllabus</b>	Version <b>2022-23 (Onwards)</b>		
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Enable the students to learn the concepts of Mining tasks, classification, clustering and Data Warehousing.</li> <li>2. Develop skills of using recent data mining software for solving practical problems.</li> <li>3. Develop and apply critical thinking, problem-solving, and decision-making skills.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the basic data mining techniques and algorithms				K1,K2
2	Understand the Association rules, Clustering techniques and Data warehousing contents				K2,K3
3	Compare and evaluate different data mining techniques like classification, prediction, Clustering and association rule mining				K4,K5
4	Design data warehouse with dimensional modeling and apply OLAP operations				K5,K6
5	Identify appropriate data mining algorithms to solve real world problems				K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>					
<b>Unit:1</b>	<b>BASICS AND TECHNIQUES</b>	<b>12 hours</b>			
Basic data mining tasks – data mining versus knowledge discovery in databases – data mining issues – data mining metrics – social implications of data mining – data mining from a database perspective- <b>WebMining-Oracle Data Mining–Text Mining-Graph Mining.</b>					
Data mining techniques: Introduction – a statistical perspective on data mining – similarity measures – decision trees – neural networks – genetic algorithms.					
<b>Unit:2</b>	<b>ALGORITHMS</b>	<b>12 hours</b>			
Classification: Introduction – Statistical – based algorithms - distance – based algorithms- decision tree - based algorithms - neural network – based algorithms –rule - based algorithms – combining techniques.					
<b>Unit:3</b>	<b>CLUSTERING AND ASSOCIATION</b>	<b>12 hours</b>			
Clustering: Introduction – Similarity and Distance Measures – Outliers – Hierarchical Algorithms - Partitional Algorithms. Association rules: Introduction - large item sets - basic algorithms – parallel & distributed algorithms – comparing approaches- incremental rules – advanced association rules techniques – measuring the quality of rules.					
<b>Unit:4</b>	<b>DATA WAREHOUSING AND MODELING</b>	<b>11 hours</b>			
Data warehousing: introduction - characteristics of a data warehouse – data marts – other aspects					

of data mart. Online analytical processing: introduction - OLTP & OLAP systems		
Data modeling –star schema for multidimensional view –data modeling – multifactstar schema or snow flake schema – OLAP TOOLS – State of the market – OLAP TOOLS and the internet.		
<b>Unit:5</b>	<b>APPLICATIONS OF DATA WAREHOUSE</b>	<b>11 hours</b>
Developing a data WAREHOUSE: why and how to build a data warehouse –data warehouse architectural strategies and organization issues - design consideration – data content – metadata distribution of data – tools for data warehousing – performance considerations – crucial decisions in designing a data warehouse. Applications of data warehousing and data mining in government: Introduction - national data warehouses – other areas for data warehousing and data mining.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Margaret H. Dunham, “Data Mining: Introductory and Advanced Topics”, Pearson education,2003.	
2	C.S.R. Prabhu, “Data Warehousing Concepts, Techniques, Products and Applications”, PHI, Second Edition.	
<b>Reference Books</b>		
1	Arun K.Pujari, “Data Mining Techniques”, Universities Press (India) Pvt. Ltd.,2003.	
2	Alex Berson, Stephen J. Smith, “Data Warehousing, Data Mining and OLAP”, TMCH, 2001.	
3	Jiawei Han & Micheline Kamber, Academicpress.	“Data Mining Concepts & Techniques”, 2001,
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.javatpoint.com/data-warehouse">https://www.javatpoint.com/data-warehouse</a>	
2	<a href="https://nptel.ac.in/noc/courses/noc20/SEM1/noc20-cs12/">https://nptel.ac.in/noc/courses/noc20/SEM1/noc20-cs12/</a>	
3	<a href="https://www.btechguru.com/training--it--database-management-systems--file-structures--introduction-to-data-warehousing-and-olap-2-video-lecture--12054--26--151.html">https://www.btechguru.com/training--it--database-management-systems--file-structures--introduction-to-data-warehousing-and-olap-2-video-lecture--12054--26--151.html</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	S	S	M	M	M
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	ADVANCED OPERATING SYSTEMS		L	T	P	C
Core/Elective/Supportive	Core		4			4
Pre-requisite	Basics of OS & its functioning		Syllabus		Version 2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Enable the students to learn the different types of operating systems and their functioning.</li> <li>2. Gain knowledge on Distributed Operating Systems</li> <li>3. Gain insight into the components and management aspects of real time and mobile operating systems.</li> <li>4. Learn case studies in Linux Operating Systems</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the design issues associated with operating systems				K1,K2	
2	Master various process management concepts including scheduling, deadlocks and distributed file systems				K3,K4	
3	Prepare Real Time Task Scheduling				K4,K5	
4	Analyze Operating Systems for Handheld Systems				K5	
5	Analyze Operating Systems like LINUX and iOS				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>BASICS OF OPERATING SYSTEMS</b>				<b>12 hours</b>	
Basics of Operating Systems: What is an Operating System? – Main frame Systems –Desktop Systems – Multiprocessor Systems – Distributed Systems – Clustered Systems –Real-Time Systems – Handheld Systems – Feature Migration – Computing Environments – <b>Process concept: The Process-Process State-Process Control block</b> -Process Scheduling – Cooperating Processes – Inter Process Communication- Deadlocks –Prevention – Avoidance – Detection – Recovery.						
<b>Unit:2</b>	<b>DISTRIBUTED OPERATING SYSTEMS</b>				<b>12 hours</b>	
Distributed Operating Systems: Issues – Communication Primitives – Lamport’s Logical Clocks – Deadlock handling strategies – Issues in deadlock detection and resolution-distributed file systems –design issues – Case studies – The Sun Network File System-Coda.						
<b>Unit:3</b>	<b>REAL TIME OPERATING SYSTEM</b>				<b>10 hours</b>	
Real time Operating Systems : Introduction – Applications of Real Time Systems – Basic Model of Real Time System – Characteristics – Safety and Reliability - Real Time Task Scheduling						
<b>Unit:4</b>	<b>HANDHELD SYSTEM</b>				<b>12 hours</b>	
Operating Systems for Handheld Systems: Requirements – Technology Overview –Handheld Operating Systems – Palm OS-Symbian Operating System- Android –Architecture of android						

Securing handheld systems		
<b>Unit:5</b>	<b>CASE STUDIES</b>	<b>12 hours</b>
Case Studies : Linux System: Introduction – Memory Management – Process Scheduling – Scheduling Policy - Managing I/O devices – Accessing Files- iOS : Architecture and SDK Framework - Media Layer - Services Layer - Core OS Layer - File System.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	Abraham Silberschatz; Peter Baer Galvin; Greg Gagne, “Operating System Concepts”, Seventh Edition, John Wiley & Sons, 2004.	
2	MukeshSinghal and Niranjan G. Shivaratri, “Advanced Concepts in Operating Systems – Distributed, Database, and Multiprocessor Operating Systems”, Tata McGraw-Hill, 2001.	
<b>Reference Books</b>		
1	Rajib Mall, “Real-Time Systems: Theory and Practice”, Pearson Education India, 2006.	
2	Pramod Chandra P.Bhatt, An introduction to operating systems, concept and practice, PHI, Third edition, 2010.	
3	Daniel.P.Bovet& Marco Cesati,“Understanding the Linux kernel”,3 <sup>rd</sup> edition,O’Reilly, 2005	
4	Neil Smyth, “iPhone iOS 4 Development Essentials – Xcode”, Fourth Edition, Payload media, 2011.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc20_cs04/preview">https://onlinecourses.nptel.ac.in/noc20_cs04/preview</a>	
2	<a href="https://www.udacity.com/course/advanced-operating-systems--ud189">https://www.udacity.com/course/advanced-operating-systems--ud189</a>	
3	<a href="https://minnie.tuhs.org/CompArch/Resources/os-notes.pdf">https://minnie.tuhs.org/CompArch/Resources/os-notes.pdf</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	S	M	M	M	M
<b>CO2</b>	S	M	S	S	S	S	S	M	S	M
<b>CO3</b>	S	M	S	S	S	S	S	M	S	M
<b>CO4</b>	S	M	S	S	S	S	S	M	S	M
<b>CO5</b>	S	M	S	S	S	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	ADVANCED JAVA PROGRAMMING			L	T	P	C
Core/Elective/Supportive	Core			4			4
Pre-requisite	Basics of Java & its Usage			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Enable the students to learn the basic functions, principles and concepts of advanced java programming.</li> <li>2. Provide knowledge on concepts needed for distributed Application Architecture.</li> <li>3. Learn JDBC, Servlet packages, JQuery, Java Server Pages and JAR file format</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the advanced concepts of Java Programming					K1,K2	
2	Understand JDBC and RMI concepts					K2,K3	
3	Apply and analyze Java in Database					K3,K4	
4	Handle different event in java using the delegation event model, event listener and class					K5	
5	Design interactive applications using Java Servlet, JSP and JDBC					K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>BASICS OF JAVA</b>					<b>12 hours</b>	
Java Basics Review: Components and event handling – Threading concepts – Networking features – Media techniques							
<b>Unit:2</b>	<b>REMOTE METHOD INVOCATION</b>					<b>12 hours</b>	
Remote Method Invocation-Distributed Application Architecture- Creating stubs and skeletons- Defining Remote objects- Remote Object Activation-Object Serialization-Java Spaces							
<b>Unit:3</b>	<b>DATABASE</b>					<b>10 hours</b>	
Java in Databases- JDBC principles – database access- Interacting- database search – Creating multimedia databases – Database support in web applications							
<b>Unit:4</b>	<b>SERVLETS</b>					<b>12 hours</b>	
Java Servlets: Java Servlet and CGI programming- A simple java Servlet-Anatomy of a java Servlet-Reading data from a client-Reading http request header-sending data to a client and writing the http response header-working with cookies Java Server Pages: JSP Overview-Installation-JSP tags-Components of a JSP page-Expressions-Scriptlets-Directives-Declarations-A complete example							
<b>Unit:5</b>	<b>ADVANCED TECHNIQUES</b>					<b>12 hours</b>	
JAR file format creation – Internationalization – Swing Programming – Advanced java							

Techniques. <b>New Features - Java5, Java6, Java7 and Java8 - Auto-boxing, Generics, variables-Arguments, java Annotations, Enum.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	Jamie Jaworski, “Java Unleashed”, SAMS Techmedia Publications,1999.	
2	Campione, Walrath and Huml, “The Java Tutorial”, AddisonWesley,1999.	
<b>Reference Books</b>		
1	Jim Keogh,” The Complete Reference J2EE”, Tata McGrawHill Publishing Company Ltd,2010.	
2	David Sawyer McFarland, “JavaScript And JQuery- The Missing Manual”, Oreilly Publications, 3rd Edition,2011.	
3	Deitel and Deitel, “Java How to Program”, Third Edition, PHI/Pearson Education Asia.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.javatpoint.com/servlet-tutorial">https://www.javatpoint.com/servlet-tutorial</a>	
2	<a href="https://www.tutorialspoint.com/java/index.htm">https://www.tutorialspoint.com/java/index.htm</a>	
3	<a href="https://onlinecourses.nptel.ac.in/noc19_cs84/preview">https://onlinecourses.nptel.ac.in/noc19_cs84/preview</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	M	M	M	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



Course code	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING		L	T	P	C
Core/Elective/Supportive	Core		4			4
Pre-requisite	Basics of AI & an Introduction about ML		Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Enable the students to learn the basic functions of AI, Heuristic Search Techniques.</li> <li>2. Provide knowledge on concepts of Representations and Mappings and Predicate Logic.</li> <li>3. Introduce Machine Learning with respect Data Mining, Big Data and Cloud.</li> <li>4. Study about Applications &amp; Impact of ML.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Demonstrate AI problems and techniques				K1,K2	
2	Understand machine learning concepts and to gain basic knowledge on deep learning.				K2,K3	
3	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning				K3,K4	
4	Analyze the impact of machine learning on applications				K4,K5	
5	Analyze and design a real world problem for implementation and understand the dynamic behavior of a system.				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>12 hours</b>	
Introduction: AI Problems - AI techniques - Criteria for success. Problems, Problem Spaces, Search: State space search - Production Systems - Problem Characteristics - Issues in design of Search.						
<b>Unit:2</b>	<b>SEARCH TECHNIQUES</b>				<b>12 hours</b>	
Heuristic Search techniques: Generate and Test - Hill Climbing- Best-First, Problem Reduction, Constraint Satisfaction, Means-end analysis. Knowledge representation issues: Representations and mappings -Approaches to Knowledge representations -Issues in Knowledge representations - Frame Problem.						
<b>Unit:3</b>	<b>PREDICATE LOGIC</b>				<b>12 hours</b>	
Using Predicate logic: Representing simple facts in logic - Representing Instance and Isa relationships - Computable functions and predicates - Resolution - Natural deduction. Representing knowledge using rules: Procedural Vs Declarative knowledge - Logic programming - Forward Vs Backward reasoning - Matching - Control knowledge.						
<b>Unit:4</b>	<b>MACHINE LEARNING</b>				<b>12 hours</b>	

Understanding Machine Learning: What Is Machine Learning?-Defining Big Data-Big Data in Context with Machine Learning-The Importance of the Hybrid Cloud-Leveraging the Power of Machine Learning-The Roles of Statistics and Data Mining with Machine Learning-Putting Machine Learning in Context-Approaches to Machine Learning.		
<b>Unit:5</b>	<b>APPLICATIONS OF MACHINE LEARNING</b>	<b>10 hours</b>
Looking Inside Machine Learning: The Impact of Machine Learning on Applications - Data Preparation-The Machine Learning Cycle. <b>Introduction to Deep learning- Differences between Machine and Deep learning.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Elaine Rich and Kevin Knight," Artificial Intelligence", Tata McGraw Hill Publishers company Pvt Ltd, Second Edition, 1991.	
2	George F Luger, "Artificial Intelligence",4th Edition, Pearson Education Publ,2002.	
<b>Reference Books</b>		
1	Machine Learning For Dummies®, IBM Limited Edition by Judith Hurwitz, Daniel Kirsch.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.ibm.com/downloads/cas/GB8ZMQZ3">https://www.ibm.com/downloads/cas/GB8ZMQZ3</a>	
2	<a href="https://www.javatpoint.com/artificial-intelligence-tutorial">https://www.javatpoint.com/artificial-intelligence-tutorial</a>	
3	<a href="https://nptel.ac.in/courses/106/105/106105077/">https://nptel.ac.in/courses/106/105/106105077/</a>	

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	M	M	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>PRACTICAL III : DATA MINING USING R</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core</b>			4	4
<b>Pre-requisite</b>		Basics of DM Algorithms & R Programming	<b>Syllabus Version</b>		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To enable the students to learn the concepts of Data Mining algorithms namely classification, clustering, regression....</li> <li>2. To understand &amp; write programs using the DM algorithms</li> <li>3. To apply statistical interpretations for the solutions</li> <li>4. Able to use visualizations techniques for interpretations</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1		Able to write programs using R for Association rules, Clustering techniques			K1,K2	
2		To implement data mining techniques like classification, prediction			K2,K3	
3		Able to use different visualizations techniques using R			K4,K5	
4		To apply different data mining algorithms to solve real world applications			K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>75 hours</b>	
<ol style="list-style-type: none"> <li>1. Implement Apriori algorithm to extract association rule of datamining.</li> <li>2. Implement k-means clustering technique.</li> <li>3. Implement any one Hierarchical Clustering.</li> <li>4. Implement Classification algorithm.</li> <li>5. Implement Decision Tree.</li> <li>6. Linear Regression.</li> <li>7. Data Visualization.</li> <li>8. <b>Text Mining.</b></li> <li>9. <b>Decision Trees.</b></li> <li>10. <b>Association Rule.</b></li> </ol>						
<b>Total Lecture hours</b>					<b>75 hours</b>	
<b>Text Books</b>						
1		Margaret H. Dunham, "Data Mining: Introductory and Advanced Topics", Pearson education,2003.				
2		C.S.R. Prabhu, "Data Warehousing Concepts, Techniques, Products and Applications", PHI, Second Edition				

<b>Reference Books</b>	
1	ArunK.Pujari, “Data Mining Techniques”, Universities Press (India) Pvt. Ltd.,2003.
2	Alex Berson, Stephen J. Smith, “Data Warehousing, Data Mining and OLAP”, TMCH, 2001.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	

Course code	PRACTICAL IV : ADVANCED JAVA LAB		L	T	P	C
Core/Elective/Supportive	Core				4	4
Pre-requisite	Basics in Java Programming		Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1.To enable the students to implement the simple programs using JSP, JAR</li> <li>2.To provide knowledge on using Servlets, Applets</li> <li>3.To introduce JDBC and navigation of records</li> <li>4.To understand RMI &amp; its implementation</li> <li>5.To introduce to Socket programming</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand to the implement concepts of Java using HTML forms, JSP & JAR				K1,K2	
2	Must be capable of implementing JDBC and RMI concepts				K3,K4	
3	Able to write Applets with Event handling mechanism				K4,K5	
4	To Create interactive web based applications using servlets and jsp				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>75 hours</b>	
<ol style="list-style-type: none"> <li>1. Display a welcome message using Servlet.</li> <li>2. <b>Using AWT, write a program to display a string in frame window with pink color asbackground.</b></li> <li>3. Design a Purchase Order form using Html form and Servlet.</li> <li>4. Develop a program for calculating the percentage of marks of a student using JSP.</li> <li>5. Design a Purchase Order form using Html form and JSP.</li> <li>6. Prepare a Employee pay slip using JSP.</li> <li>7. Write a program using Java servlet to handle form data.</li> <li>8. Write a simple Servlet program to create a table of all the headers it receives along with their associated values.</li> <li>9. Write a program in JSP by using session object.</li> <li>10. Write a program to build a simple Client Server application using RMI.</li> <li>11. Create an applet for a calculator application.</li> <li>12. Program to send a text message to another system and receive the text message from the system (use socket programming).</li> </ol>						
Expert lectures, online seminars – webinars						
<b>Total Lecture hours</b>					<b>75 hours</b>	

<b>Text Books</b>	
1	Jamie Jaworski, “Java Unleashed”, SAMS Techmedia Publications,1999.
2	Campione, Walrath and Huml, “The Java Tutorial”, AddisonWesley,1999.
<b>Reference Books</b>	
1	Jim Keogh,” The Complete Reference J2EE”, Tata McGrawHill Publishing Company Ltd,2010.
2	David Sawyer McFarland, “JavaScript And JQuery- The Missing Manual”, Oreilly Publications, 3rd Edition,2011.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.javatpoint.com/servlet-tutorial">https://www.javatpoint.com/servlet-tutorial</a>
2	<a href="https://www.tutorialspoint.com/java/index.htm">https://www.tutorialspoint.com/java/index.htm</a>
3	<a href="https://onlinecourses.nptel.ac.in/noc19_cs84/preview">https://onlinecourses.nptel.ac.in/noc19_cs84/preview</a>

<b>Mapping with Programming Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	S	S	M	M	S	M
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



**Third  
Semester**

Course code	DIGITAL IMAGE PROCESSING			L	T	P	C
Core/Elective/Supportive	Core			4			4
Pre-requisite	Basics of Image Processing			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Learn basic image processing techniques for solving real problems.</li> <li>2. Gain knowledge in image transformation and Image enhancement techniques.</li> <li>3. Learn Image compression and Segmentation procedures.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the fundamentals of Digital Image Processing					K1,K2	
2	Understand the mathematical foundations for digital image representation, image acquisition, image transformation, and image enhancement					K2,K3	
3	Apply, Design and Implement and get solutions for digital image processing problems					K3,K4	
4	Apply the concepts of filtering and segmentation for digital image retrieval					K4,K5	
5	Explore the concepts of Multi-resolution process and recognize the objects in an efficient manner					K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>12 hours</b>	
Introduction: What is Digital image processing – the origin of DIP – Examples of fields that use DIP – Fundamentals steps in DIP – Components of an image processing system. Digital Image Fundamentals: Elements of Visual perception – Light and the electromagnetic spectrum – Image sensing and acquisition – Image sampling and Quantization – Some Basic relationship between Pixels – Linear & Nonlinear operations.							
<b>Unit:2</b>	<b>IMAGE ENHANCEMENT</b>					<b>12 hours</b>	
Image Enhancement in the spatial domain:- Background – some basic Gray level Transformations – Histogram Processing – Enhancement using Arithmetic / Logic operations – Basics of spatial filtering – Smoothing spatial filters – Sharpening spatial filters – Combining spatial enhancement methods.							
<b>Unit:3</b>	<b>IMAGE RESTORATION</b>					<b>12 hours</b>	
Image Restoration: A model of the Image Degradation / Restoration Process – Noise models – Restoration is the process of noise only – Spatial Filtering – Periodic Noise reduction by frequency domain filtering – Linear, Portion – Invariant Degradations – Estimating the degradation function – Inverse filtering – Minimum mean square Error Filtering – Constrained least squares filtering – Geometric mean filter – Geometric Transformations.							



<b>Unit:4</b>	<b>IMAGE COMPRESSION</b>	<b>11 hours</b>
Image Compression and <b>Recognition</b> : Fundamentals – Image compression models – Elements of Information Theory – Error Free compression – Lossy compression – Image compression standards- <b>Patterns and Pattern classes</b> – <b>Recognition based on matching.</b>		
<b>Unit:5</b>	<b>IMAGE SEGMENTATION</b>	<b>11 hours</b>
Image Segmentation: Detection and Discontinuities – Edge Linking and Boundary deduction – Thresholding – Region-Based segmentation – Segmentation by Morphological watersheds – The use of motion in segmentation.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Rafael C. Gonzalez, Richard E. Woods, “Digital Image Processing”, Second Edition, PHI/Pearson Education.	
2	B. Chanda, D. Dutta Majumder, “Digital Image Processing and Analysis”, PHI, 2003.	
<b>Reference Books</b>		
1	Nick Efford, “Digital Image Processing a practical introducing using Java”, Pearson Education, 2004.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/117/105/117105135/">https://nptel.ac.in/courses/117/105/117105135/</a>	
2	<a href="https://www.tutorialspoint.com/dip/index.htm">https://www.tutorialspoint.com/dip/index.htm</a>	
3	<a href="https://www.javatpoint.com/digital-image-processing-tutorial">https://www.javatpoint.com/digital-image-processing-tutorial</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	M	S	M	M	S
<b>CO2</b>	S	S	S	S	S	M	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	CLOUD COMPUTING			L	T	P	C
Core/Elective/Supportive	Core			4			4
Pre-requisite	Basics of Cloud & its Applications			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Gain knowledge on cloud computing, cloud services, architectures and applications.</li> <li>2. Enable the students to learn the basics of cloud computing with real time usage</li> <li>3. How to store and share, in and from cloud?</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the concepts of Cloud and its services					K1,K2	
2	Collaborate Cloud for Event & Project Management					K3,K4	
3	Analyze on cloud in – Word Processing, Spread Sheets, Mail, Calendar, Database					K4,K5	
4	Analyze cloud in social networks					K5,K6	
5	Explore cloud storage and sharing					K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>12 hours</b>	
INTRODUCTION Cloud Computing Introduction, From, Collaboration to cloud, Working of cloud computing, pros and cons, benefits, developing cloud computing services, Cloud service development, discovering cloud services. <b>Cloud Computing Providers – Applications.</b>							
<b>Unit:2</b>	<b>CLOUD COMPUTING</b>					<b>12 hours</b>	
CLOUD COMPUTING FOR EVERYONE Centralizing email communications, cloud computing for community, collaborating on schedules, collaborating on group projects and events, cloud computing for corporation, mapping, schedules, managing projects, presenting on road.							
<b>Unit:3</b>	<b>CLOUD SERVICES</b>					<b>12 hours</b>	
USING CLOUD SERVICES Collaborating on calendars, Schedules and task management, exploring on line scheduling and planning, collaborating on event management, collaborating on contact management, collaborating on project management, collaborating on word processing, spreadsheets, and databases.							
<b>Unit:4</b>	<b>OUTSIDE THE CLOUD</b>					<b>12 hours</b>	
OUTSIDE THE CLOUD Evaluating web mail services, Evaluating instant messaging, Evaluating web conference tools, creating groups on social networks, Evaluating on line							

groupware, collaborating via blogs and wikis.		
<b>Unit:5</b>	<b>STORING AND SHARING</b>	<b>10 hours</b>
STORING AND SHARING Understanding cloud storage, evaluating on line file storage, exploring on line book marking services, exploring on line photo editing applications, exploring photo sharing communities, controlling it with web based desktops.- <b>Cloud Computing Trends &amp; Future Technology 2022</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Michael Miller, “Cloud Computing”, Pearson Education, New Delhi, 2009.	
<b>Reference Books</b>		
1	Anthony T. Velte, “Cloud Computing: A Practical Approach”, 1st Edition, Tata McGraw Hill Education Private Limited, 2009.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/105/106105167/">https://nptel.ac.in/courses/106/105/106105167/</a>	
2	<a href="https://www.tutorialspoint.com/cloud_computing/index.htm">https://www.tutorialspoint.com/cloud_computing/index.htm</a>	
3	<a href="https://www.javatpoint.com/cloud-computing-tutorial">https://www.javatpoint.com/cloud-computing-tutorial</a>	

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	L	S	M	S	M	S	M	M	M	S
<b>CO2</b>	M	S	M	S	S	S	M	M	M	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	M	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	NETWORK SECURITY AND CRYPTOGRAPHY		L	T	P	C
Core/Elective/Supportive	Core		4			4
Pre-requisite	Basics of Networks & its Security		Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Enable students to learn the Introduction to Cryptography, Web Security and Case studies in Cryptography.</li> <li>2. To gain knowledge on classical encryption techniques and concepts of modular arithmetic and number theory.</li> <li>3. To explore the working principles and utilities of various cryptographic algorithms including secret key cryptography, hashes and message digests, and public key algorithms.</li> <li>4. To explore the design issues and working principles of various authentication Applications and various secure communication standards including Kerberos, IPsec, and SSL/TLS and email.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the process of the cryptographic algorithms				K1,K2	
2	Compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication				K2,K3	
3	Apply and analyze appropriate security techniques to solve network security problem				K3,K4	
4	Exploresuitable cryptographic algorithms				K4,K5	
5	Analyze different digital signature algorithms to achieve authentication and design secure applications				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>						
<b>INTRODUCTION</b>					<b>12 hours</b>	
Introduction to Cryptography – Security Attacks – Security Services –Security Algorithm- Stream cipher and Block cipher - Symmetric and Asymmetric-key Cryptosystem Symmetric Key Algorithms: Introduction – DES – Triple DES – AES – IDEA – Blowfish – RC5.						
<b>Unit:2</b>						
<b>CRYPTO SYSTEM</b>					<b>12 hours</b>	
Public-key Cryptosystem: Introduction to Number Theory - RSA Algorithm – Key Management - Diffie-Hell man Key exchange – Elliptic Curve Cryptography Message Authentication and Hash functions – Hash and Mac Algorithm – Digital Signatures and Authentication Protocol.						
<b>Unit:3</b>						
<b>NETWORK SECURITY</b>					<b>12 hours</b>	
Network Security Practice: Authentication Applications – Kerberos – X.509 Authentication services and Encryption Techniques. E-mail Security – PGP – S / MIME – <b>Introduction to Wireless Network Security- Types of Wireless Network Security</b>						

<b>Unit:4</b>	<b>WEB SECURITY</b>	<b>10 hours</b>
<b>IP Security</b> -Web Security - Secure Socket Layer – Secure Electronic Transaction. System Security - Intruders and Viruses – Firewalls– Password Security.		
<b>Unit:5</b>	<b>CASE STUDY</b>	<b>12 hours</b>
Case Study: Implementation of Cryptographic Algorithms – RSA – DSA – ECC (C / JAVA Programming). Network Forensic – Security Audit - Other Security Mechanism: Introduction to: Stenography – Quantum Cryptography – Water Marking - DNA Cryptography		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	William Stallings, “Cryptography and Network Security”, PHI/Pearson Education.	
2	Bruce Schneir, “Applied Cryptography”, CRC Press.	
<b>Reference Books</b>		
1	A.Menezes, P Van Oorschot and S.Vanstone, “Hand Book of Applied Cryptography”, CRC Press, 1997	
2	Ankit Fadia, ”Network Security”, MacMillan.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/105/106105031/">https://nptel.ac.in/courses/106/105/106105031/</a>	
2	<a href="http://www.nptelvideos.in/2012/11/cryptography-and-network-security.html">http://www.nptelvideos.in/2012/11/cryptography-and-network-security.html</a>	
3	<a href="https://www.tutorialspoint.com/cryptography/index.htm">https://www.tutorialspoint.com/cryptography/index.htm</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	L	S	M	S	M	S
<b>CO2</b>	S	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	DATA SCIENCE & ANALYTICS			L	T	P	C
Core/Elective/Supportive	Core			4			4
Pre-requisite	Basics of Data Science & its Applications			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Introduce the students to data science, big data &amp; its eco system.</li> <li>2. Learn data analytics &amp; its life cycle.</li> <li>3. To explore the programming language R, with respect to the data mining algorithms.</li> <li>4. Relate the relationship between artificial intelligence, machine learning and data science.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the concept of data science and its techniques					K1,K2	
2	Review data analytics					K2,K3	
3	Apply and determine appropriate Data Mining techniques using R to real time applications					K3,K4	
4	Analyze on clustering algorithms					K4,K5	
5	Analyze on regression methods in AI					K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>12 hours</b>	
Introduction of Data Science: data science and big data –data science process-Ecosystem-The Data Science process – six steps- Machine Learning.							
<b>Unit:2</b>	<b>BASICS OF DATA ANALYTICS</b>					<b>12 hours</b>	
Data Analytics life cycle - review of data analytics - Advanced data Analytics-technology and tools- <b>Data science and Data Analytics Techniques.</b>							
<b>Unit:3</b>	<b>DATA ANALYTICS USING R</b>					<b>12 hours</b>	
Basic Data Analytics using R : R Graphical User Interfaces – Data Import and Export – Attribute and Data Types –Descriptive Statistics – Exploratory Data Analysis –Visualization Before Analysis – Dirty Data – Visualizing a Single Variable – Examining Multiple Variables – Data Exploration Versus Presentation.							
<b>Unit:4</b>	<b>CLUSTERING</b>					<b>12 hours</b>	
Overview of Clustering : K-means – Use Cases – Overview of the Method – Perform a K-means Analysis using R – Classification–Decision Trees–Overview of a Decision Tree–Decision Tree Algorithms – Evaluating a Decision Tree – Decision Tree in R – Bayes’ Theorem – Naïve Bayes Classifier–Smoothing–Naïve Bayes in R- <b>Artificial Intelligence and Data Science in Environmental Sensing.</b>							

<b>Unit:5</b>	<b>ARTIFICIAL INTELLIGENCE</b>	<b>10 hours</b>
Artificial intelligence: Machine Learning and deep learning in data science - Clustering, association rules. Linear regression-logistic regression-Additional regression methods.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Introducing-Data-Science-Big-Data-Machine-Learning-and-more-using-Python-tools-2016. Pdf	
2	Data science in big data analytics-Wiley 2015 John Wiley & Sons	
<b>Reference Books</b>		
1	A simple introduction to Data Science - Lars Nielson 2015	
2	Introducing Data Science Davy Cielen, Arno D.B.Meysman, Mohamed Ali 2016 Manning Publication	
3	R Programming for Data Science - Roger D.Peng 2015 Lean Publication	
4	Data Science & Big Data Analytics: Discovering, Analyzing , Visualizing and Presenting Data	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/python_data_science/index.htm">https://www.tutorialspoint.com/python_data_science/index.htm</a>	
2	<a href="https://www.javatpoint.com/data-science">https://www.javatpoint.com/data-science</a>	
3	<a href="https://nptel.ac.in/courses/106/106/106106179/">https://nptel.ac.in/courses/106/106/106106179/</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	M	M	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code		<b>PRACTICAL V : DIGITAL IMAGE PROCESSING Using MATLAB</b>	L	T	P	C
<b>Core/Elective/Supportive</b>		<b>Core</b>			4	4
<b>Pre-requisite</b>		Basic Programming of Image Processing & an intro to MATLAB	<b>Syllabus Version</b>		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To understand the basics of Digital Image Processing fundamentals, image enhancement and image restoration techniques</li> <li>2. To enable the students to learn the fundamentals of image compression and segmentation</li> <li>3. To understand Image Restoration &amp; Filtering Techniques</li> <li>4. Implementation of the above using MATLAB</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To write programs in MATLAB for image processing using the techniques				K1,K2	
2	To able to implement Image Enhancements & Restoration techniques				K2,K3	
3	Capable of using Compression techniques in an Image				K3,K4	
4	Must be able to manipulate the image and Segment it				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>60 hours</b>	
<ol style="list-style-type: none"> <li>1. Implement Image enhancement Technique.</li> <li>2. Histogram Equalization</li> <li>3. Image Restoration.</li> <li>4. Implement Image Filtering.</li> <li>5. Edge detection using Operators (Roberts, Prewitts and Sobels operators)</li> <li>6. Implement image compression.</li> <li>7. Image Subtraction</li> <li>8. Boundary Extraction using morphology.</li> <li>9. Image Segmentation</li> <li>10. <b>MATLAB program for Pseudo Coloring.</b></li> </ol>						
<b>Total Lecture hours</b>					<b>60 hours</b>	
<b>Text Books</b>						
1	Rafael C. Gonzalez, Richard E. Woods, “Digital Image Processing”, Second Edition,					



	PHI/Pearson Education.
2	B. Chanda, D. Dutta Majumder, “Digital Image Processing and Analysis”, PHI, 2003.
<b>Reference Books</b>	
1	Nick Efford, “Digital Image Processing a practical introducing using Java”, Pearson Education, 2004.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/117/105/117105135/">https://nptel.ac.in/courses/117/105/117105135/</a>
2	<a href="https://www.tutorialspoint.com/dip/index.htm">https://www.tutorialspoint.com/dip/index.htm</a>
3	<a href="https://www.javatpoint.com/digital-image-processing-tutorial">https://www.javatpoint.com/digital-image-processing-tutorial</a>

<b>Mapping with Programming Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	S	S	M	M	S	S
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	PRACTICAL VI : CLOUD COMPUTING LAB		L	T	P	C
Core/Elective/Supportive	Core				4	4
Pre-requisite	Basic Programming using Cloud		Syllabus			
<b>Course Objectives:</b>					<b>2022-23 (Onwards)</b>	
The main objectives of this course are to:						
1. This course covers the basic data structures like Stack, Queue, Tree , List.						
2. This course enables the students to learn the applications of the data structures using various techniques						
3. It also enable the students to understand C++ language with respect to OOAD concepts						
4. Application of OOPS concepts						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the concepts of object oriented with respect to C++				K1,K2	
2	Able to understand and implement OOPS concepts				K3,K4	
3	Implementation of data structures like Stack, Queue, Tree , List using C++				K4,K5	
4	Application of the data structures for Sorting, Searching using different techniques.				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>60 hours</b>	
1. Working with Google Drive to make spreadsheet and notes.						
2. Launch a Linux Virtual Machine.						
<b>3. Working with Dropbox, which is an example of Software as a Service (Saas).</b>						
4. Exploring Google cloud for the following a) Storage b) Sharing of data c) manage your calendar, to-do lists, d) a document editing tool						
5. Working and installation of Google App Engine						
6. Working and installation of Microsoft Azure						
7. To Connect Amazon Redshift with S3 bucket						
8. To Create and Query a NoSQL Table						
Expert lectures, online seminars – webinars						
<b>Total Lecture hours</b>					<b>60 hours</b>	
<b>Text Books</b>						
1	Michael Miller, “Cloud Computing”, Pearson Education, New Delhi, 2009.					
<b>Reference Books</b>						

1	Anthony T. Velte, “Cloud Computing: A Practical Approach”, 1st Edition, Tata McGraw Hill Education Private Limited, 2009.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/106/105/106105167/">https://nptel.ac.in/courses/106/105/106105167/</a>
2	<a href="https://www.tutorialspoint.com/cloud_computing/index.htm">https://www.tutorialspoint.com/cloud_computing/index.htm</a>
3	<a href="https://www.javatpoint.com/cloud-computing-tutorial">https://www.javatpoint.com/cloud-computing-tutorial</a>

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	S	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



<b>Course code</b>		<b>PRACTICAL VII : WEB APPLICATION DEVELOPMENT AND HOSTING</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core</b>			2	2
<b>Pre-requisite</b>		Basic Programming using HTML tags	<b>Syllabus</b>		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Able to design a web page using HTML tags						
2. To enable the students to use Framesets, hyper links and different formatting features of HTML tags						
3. Enable the students to use Forms & other controls in a web page						
4. To create interactive applications using PHP						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand & implement the basic HTML tags to create static web pages				K1,K2	
2	Capable of using hyperlinks, frames , images, tables,.....in a web page				K2,K3	
3	Able to write dynamic web applications using HTML forms				K4,K5	
4	Must be able to write dynamic web applications in PHP & HTML tags using XAMPP.				K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF PROGRAMS</b>					<b>30 hours</b>	
1. Develop a website for your college using advanced tags of HTML.						
2. Write names of several countries in a paragraph and store it as an HTML document, world.html. Each country name must be a hot text. When you click India (for example), it must open india.html and it should provide a brief introduction about India.						
3. Develop a HTML document to i)display Text with Bullets / Numbers - Using Lists ii) to display the Table Format Data						
4. Develop a Complete Web Page using Frames and Framesets which gives the Information about a Hospital using HTML.						
5. Write a HTML document to print your Bio-Data in a neat format using several components.						
6. Develop a HTML document to display a Registration Form for an inter-collegiate function.						
7. Using HTML form accept Customer details like Name, City, Pin code, Phone number and Email address and validate the data and display appropriate messages for violations using PHP (Eg. Name is Mandatory field; Pin code must be 6 digits, etc.).						
8. Write a program to accept two numbers n1 and n2 using HTML form and display the Prime						

numbers between n1 and n2 using PHP.	
<b>9. Write a HTML program to generate Timetable for your class.</b>	
<b>Total Lecture hours</b>	<b>30 hours</b>
<b>Text Books</b>	
1	Ivan Bayross, “Web Enabled Commercial Applications Development Using HTML, JavaScript, DHTML and PHP”, BPB Publications, 4th Revised Edition, 2010.
<b>Reference Books</b>	
2	A.K.Saini and SumintTuli, “Mastering XML”, First Edition, New Delhi, 2002.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.tutorialspoint.com/xml/index.htm">https://www.tutorialspoint.com/xml/index.htm</a>
2	<a href="https://www.tutorialspoint.com/internet_technologies/websites_development.htm">https://www.tutorialspoint.com/internet_technologies/websites_development.htm</a>
3	<a href="https://www.youtube.com/watch?v=PlxWf493en4">https://www.youtube.com/watch?v=PlxWf493en4</a>

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	S	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



# **Elective Courses**

Course code	MULTIMEDIA AND ITS APPLICATIONS			L	T	P	C
Core/Elective/Supportive	Elective			4			4
Pre-requisite	Basics of Multimedia			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>To introduce the students the concepts of Multimedia, Images &amp; Animation.</li> <li>To introduce Multimedia authoring tools</li> <li>To understand the role of Multimedia in Internet</li> <li>To know about High Definition Television and Desktop Computing – Knowledge based Multimedia systems</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the basic concepts of Multimedia					K1,K2	
2	Demonstrate Multimedia authoring tools					K2,K3	
3	Analyze the concepts of Sound, Images, Video & Animation					K4	
4	Apply and Analyze the role of Multimedia in Internet and real time applications					K4,K5	
5	Analyze multimedia applications using HDTV					K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>12 hours</b>	
What is Multimedia? – Introduction to making Multimedia – Macintosh and Windows Production platforms – Basic Software tools.							
<b>Unit:2</b>	<b>MULTIMEDIA TOOLS</b>					<b>12 hours</b>	
Making Instant Multimedia – Multimedia authoring tools – Multimedia building blocks – Text – Sound.							
<b>Unit:3</b>	<b>ANIMATION</b>					<b>10 hours</b>	
Images – Animation – Video.							
<b>Unit:4</b>	<b>INTERNET</b>					<b>12 hours</b>	
Multimedia and the Internet – The Internet and how it works – Tools for World Wide Web – Designing for the World Wide Web.							
<b>Unit:5</b>	<b>MULTIMEDIA SYSTEMS</b>					<b>12 hours</b>	
High Definition Television and Desktop Computing – Knowledge based Multimedia systems- <b>Media Preparation and Composition.</b>							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	Tay Vaughan, “Multimedia making it work”, Fifth Edition, Tata McGrawHill.	
2	John F. Koegel Bufford, “Multimedia Systems”, Pearson Education.	
<b>Reference Books</b>		
1	Judith Jeffloate, “Multimedia in Practice (Technology and Applications)”, PHI,2003.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/multimedia/index.htm">https://www.tutorialspoint.com/multimedia/index.htm</a>	
2	<a href="https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_multimedia.htm">https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_multimedia.htm</a>	
3	<a href="https://nptel.ac.in/courses/117/105/117105083/">https://nptel.ac.in/courses/117/105/117105083/</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	M	M	S
<b>CO2</b>	S	S	S	S	M	S	M	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	EMBEDDED SYSTEMS			L	T	P	C
Core/Elective/Supportive	Elective			4			4
Pre-requisite	Basics of Micro Controller			Syllabus	2022-23 (Onwards)		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Present the introduction to 8051 Microcontroller Instruction Set, concepts on RTOS &amp; Software tools.</li> <li>2. Gain the knowledge about the embedded software development.</li> <li>3. Learn about Microcontroller and software tools in the embedded systems.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the concept of 8051 microcontroller					K1,K2	
2	Understand the Instruction Set and Programming					K2,K3	
3	Analyze the concepts of RTOS					K3,K4	
4	Analyze and design various real time embedded systems using RTOS					K5	
5	Debug the malfunctioning system using various debugging techniques					K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>8051 MICROCONTROLLER</b>					<b>12Hours</b>	
8051 Microcontroller: Introduction - 8051 Architecture-Input/Output Pins, Ports and Circuits - External Memory - Counters / Timers - Serial Data Input / Output –Interrupts							
<b>Unit:2</b>	<b>PROGRAMMING BASICS</b>					<b>12Hours</b>	
Instruction Set and Programming Moving Data-Addressing Modes-Logical operations- Arithmetic Operation-Jump and Call Instructions-Simple Program. Applications: Keyboard Interface- Display Interface-Pulse Measurements-DIA and AID Conversions-Multiple Interrupts.							
<b>Unit:3</b>	<b>CONCEPTS ON RTOS</b>					<b>12Hours</b>	
CONCEPTS ON RTOS: Introduction to RTOS-Selecting an RTOS-Task and Task states - Tasks and data- Semaphores and shared data. MORE operating systems services: Interrupt Process communication - Message Queues, Mailboxes and pipes- Timer Functions-Events - Memory Management-Interrupt Routines in an RTOS Environment.							
<b>Unit:4</b>	<b>DESIGN USING RTOS</b>					<b>10Hours</b>	
Basic Design using a RTOS: Principles - Encapsulating semaphores and Queues-Hard real time scheduling considerations-Saving memory space and power- introductions to RTL &QNX.							
<b>Unit:5</b>	<b>SOFTWARE TOOLS</b>					<b>12Hours</b>	
SOFTWARE TOOLS: Embedded software Development Tools:Hosts and Target Machines-							

Linker/Locators for Embedded software-getting Embedded software into the Target systems. Debugging Techniques: Testing on your Host machine -Instruction set simulators- The assert macro- using laboratory tools- <b>electronic calculators-engine management systems in vehicles.</b>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60Hours</b>
<b>Text Books</b>		
1	David E. Simon, “An Embedded Software primer” Pearson Education Asia, 2003.	
2	Kenneth J Ayala, “The 8051 Microcontroller and Architecture programming and application”, Second Edition, Penram International.	
<b>Reference Books</b>		
1	Raj Kamal, “Embedded Systems – Architecture, programming and design”, Tata McGraw – Hill, 2003.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc20_cs14/preview">https://onlinecourses.nptel.ac.in/noc20_cs14/preview</a>	
2	<a href="https://www.javatpoint.com/embedded-system-tutorial">https://www.javatpoint.com/embedded-system-tutorial</a>	
3	<a href="https://www.tutorialspoint.com/embedded_systems/index.htm">https://www.tutorialspoint.com/embedded_systems/index.htm</a>	

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	L	L	L	S	M	S	S	M	M	S
<b>CO2</b>	M	M	S	S	M	S	M	S	S	S
<b>CO3</b>	M	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INTERNET OF THINGS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Elective</b>	4			4
<b>Pre-requisite</b>		Basics of Sensors & its Applications	<b>Syllabus</b>	<b>2022-23 (Onwards)</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>About Internet of Things where various communicating entities are controlled and managed for decision making in the application domain.</li> <li>Enable students to learn the Architecture of IoT and IoT Technologies</li> <li>Developing IoT applications and Security in IoT, Basic Electronics for IoT, Arduino IDE, Sensors and Actuators Programming NODEMCU using Arduino IDE.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand about IoT, its Architecture and its Applications					K1,K2
2	Understand basic electronics used in IoT & its role					K2,K3
3	Develop applications with C using Arduino IDE					K4
4	Analyze about sensors and actuators					K5,K6
5	Design IoT in real time applications using today's internet & wireless technologies					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>12 hours</b>	
Introduction to IoT: Evolution of IoT – Definition & Characteristics of IoT - Architecture of IoT – Technologies for IoT – Developing IoT Applications – Applications of IoT – Industrial IoT – Security in IoT-IoT Enabling Technologies.						
<b>Unit:2</b>	<b>BASIC ELECTRONICS FOR IoT</b>				<b>12 hours</b>	
Basic Electronics for IoT: Electric Charge, Resistance, Current and Voltage – Binary Calculations – Logic Chips – Microcontrollers – Multipurpose Computers – Electronic Signals – A/D and D/A Conversion – Pulse Width Modulation- <b>IoT Applications Services and Real Implementations .</b>						
<b>Unit:3</b>	<b>PROGRAMMING USING ARDUINO</b>				<b>12 hours</b>	
Programming Fundamentals with C using Arduino IDE: Installing and Setting up the Arduino IDE – Basic Syntax – Data Types/ Variables/ Constant – Operators – Conditional Statements and Loops – Using Arduino C Library Functions for Serial, delay and other invoking Functions – Strings and Mathematics Library Functions.						
<b>Unit:4</b>	<b>SENSORS AND ACTUATORS</b>				<b>10 hours</b>	
Sensors and Actuators: Analog and Digital Sensors – Interfacing temperature sensor, ultrasound						

sensor and infrared (IR) sensor with Arduino – Interfacing LED and Buzzer with Arduino.		
<b>Unit:5</b>	<b>SENSOR DATA IN INTERNET</b>	<b>12 hours</b>
Sending Sensor Data Over Internet: Introduction to ESP8266 NODEMCU WiFi Module – Programming NODEMCU using Arduino IDE – Using WiFi and NODEMCU to transmit data from temperature sensor to Open Source IoT cloud platform (ThingSpeak).		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>hours</b>
<b>Text Books</b>		
1	Arshdeep Bahga, Vijay Madiseti, “Internet of Things: A Hands-On Approach”, 2014. ISBN: 978-0996025515	
2	Boris Adryan, Dominik Obermaier, Paul Fremantle, “The Technical Foundations of IoT”, Artech Houser Publishers, 2017.	
<b>Reference Books</b>		
1	Michael Margolis, “Arduino Cookbook”, O’Reilly, 2011	
2	Marco Schwartz, “Internet of Things with ESP8266”, Packt Publishing, 2016.	
3	Dhivya Bala, “ESP8266: Step by Step Tutorial for ESP8266 IoT, Arduino NODEMCU Dev. Kit”, 2018.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc20_cs66/preview">https://onlinecourses.nptel.ac.in/noc20_cs66/preview</a>	
2	<a href="https://www.javatpoint.com/iot-internet-of-things">https://www.javatpoint.com/iot-internet-of-things</a>	
3	<a href="https://www.tutorialspoint.com/internet_of_things/index.htm">https://www.tutorialspoint.com/internet_of_things/index.htm</a>	

<b>Mapping with Programming Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	S	M	S	M	M	S	M
<b>CO2</b>	M	S	M	S	M	S	M	S	S	S
<b>CO3</b>	S	S	S	S	M	S	M	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	CRITICAL THINKING, DESIGN THINKING AND PROBLEM SOLVING			L	T	P	C
Core/Elective/Supportive	Elective			4			4
Pre-requisite	Basics of Logical & Reasoning Skills			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Learn critical thinking and its related concepts</li> <li>2. Learn design thinking and its related concepts</li> <li>3. Develop Thinking patterns, Problem solving &amp; Reasoning</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the concepts of Critical thinking and its related technology					K1,K2	
2	Focus on the explicit development of critical thinking and problem solving skills					K2,K3	
3	Apply design thinking in problems					K3,K4	
4	Make a decision and take actions based on analysis					K4,K5	
5	Analyze the concepts of Thinking patterns, Problem solving & Reasoning in real time applications					K5,K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>CRITICAL THINKING</b>					<b>12 hours</b>	
Critical Thinking: Definition, Conclusions and Decisions, Beliefs and Claims, Evidence – finding, evaluation, Inferences, Facts – opinion, probable truth, probably false, Venn diagram. Applied critical thinking: Inference, Explanation, Evidence, Credibility, Two Case Studies, critical thinking and science, critical evaluation, self assessment.							
<b>Unit:2</b>	<b>DESIGN THINKING</b>					<b>12 hours</b>	
Design Thinking: Introduction, Need of Design Thinking, problem to question - design thinking process, Traditional Problem Solving versus Design Thinking, phases of Design Thinking, problem exploration, Stake holder assessment, design thinking for manufacturers, smart Idea to implementation.							
<b>Unit:3</b>	<b>CASE STUDY</b>					<b>12 hours</b>	
<b>Human Resources: Marketing, Customer Service -Thinking to confidence, fear management, duty Vs passion, Team management, Tools for Thinking, prototype design, Relevance of Design and Design Thinking in engineering, human centered design, case study: apply design thinking in problem.</b>							
<b>Unit:4</b>	<b>PROBLEM SOLVING</b>					<b>10 hours</b>	
Problem solving: problem definition, problem solving methods, selecting and using information, data processing, solution methods, solving problems by searching, recognizing patterns, spatial							

reasoning, necessity and sufficiency, choosing and using models, making choices and decisions.		
<b>Unit:5</b>	<b>REASONING</b>	<b>12 hours</b>
Reasoning: Deductive and hypothetical reasoning, computational problem solving; generating, implementing, and evaluating solutions, interpersonal problem solving. Advanced problem solving: Combining skills – using imagination, developing models, Carrying out investigations, Data analysis and inference. Graphical methods of solution, Probability, tree diagrams and decision trees		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	John Butterworth and Geoff Thwaites, Thinking skills: Critical Thinking and Problem Solving, Cambridge University Press, 2013.	
2	H. S. Fogler and S. E. LeBlanc, Strategies for Creative Problem Solving, 2nd edition, Pearson, Upper Saddle River, NJ, 2008.	
<b>Reference Books</b>		
1	A. Whimbey and J. Lochhead, Problem Solving & Comprehension, 6th edition, Lawrence Erlbaum, Mahwah, NJ, 1999.	
2	M. Levine, Effective Problem Solving, 2nd edition, Prentice Hall, Upper Saddle River, NJ, 1994.	
3	Michael Baker, The Basic of Critical Thinking, The Critical Thinking Co press, 2015.	
4	David Kelley and Tom Kelley, Creative Confidence, 2013.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/critical_thinking/index.htm">https://www.tutorialspoint.com/critical_thinking/index.htm</a>	
2	<a href="https://www.tutorialspoint.com/design_thinking/design_thinking_quick_guide.htm">https://www.tutorialspoint.com/design_thinking/design_thinking_quick_guide.htm</a>	
3	<a href="https://nptel.ac.in/courses/109/104/109104109/">https://nptel.ac.in/courses/109/104/109104109/</a>	

<b>Mapping with Programming Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	S	S	M	S	S	S
CO2	S	S	M	S	S	S	M	S	S	S
CO3	S	S	M	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	MOBILE COMPUTING			L	T	P	C
Core/Elective/Supportive	Elective			4			4
Pre-requisite	Basics of Mobile Communication			Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Present the overview of Mobile computing, Applications and Architectures.</li> <li>2. Describe the futuristic computing challenges.</li> <li>3. Enable the students to learn the concept of mobile computing.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the need and requirements of mobile communication						K1,K2
2	Focus on mobile computing applications and techniques						K2,K3
3	Demonstrate satellite communication in mobile computing						K4
4	Analyze about wireless local loop architecture						K5,K6
5	Analyze various mobile communication technologies						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION</b>					<b>12 hours</b>	
Introduction: Advantages of Digital Information - Introduction to Telephone Systems –Mobile communication: Need for Mobile Communication – Requirements of Mobile Communication – History of Mobile Communication.							
<b>Unit:2</b>	<b>MOBILE COMMUNICATION</b>					<b>12 hours</b>	
Introduction to Cellular Mobile Communication – Mobile Communication Standards –Mobility Management – Frequency Management – Cordless Mobile Communication Systems.							
<b>Unit:3</b>	<b>MOBILE COMPUTING</b>					<b>12 hours</b>	
Mobile Computing: History of data networks – Classification of Mobile data networks - CDPD System – Satellites in Mobile Communication: Satellite classification – Global Satellite Communication – Changeover from one satellite to other – Global Mobile Communication – Interferences in Cellular Mobile Communication. <b>Modulation in Mobile Computing: Types of Modulation.</b>							
<b>Unit:4</b>	<b>MOBILE COMMUNICATION SYSTEM</b>					<b>11 hours</b>	
Important Parameters of Mobile Communication System – Mobile Internet: Working of Mobile IP – Wireless Network Security – Wireless Local Loop Architecture: Components in WLL – Problems in WLL – Modern Wireless Local Loop – Local Multipoint Distribution Service – Wireless Application Protocol.							
<b>Unit:5</b>	<b>COMMUNICATION TECHNOLOGY</b>					<b>11 hours</b>	

WCDMA Technology and Fiber Optic Microcellular Mobile Communication – Ad hoc Network and Bluetooth technology – Intelligent Mobile Communication system – Fourth Generation Mobile Communication systems.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	T.G. Palanivelu, R. Nakkeeran, “Wireless and Mobile Communication”, PHI Limited, 2009.	
2	Jochen Schiller, “Mobile Communications”, Second Edition, Pearson Education, 2007.	
<b>Reference Books</b>		
1	Asoke K Talukder, Hasan Ahmed, Roopa Yavagal, “Mobile Computing”,TMH, 2010.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/mobile_computing/index.htm">https://www.tutorialspoint.com/mobile_computing/index.htm</a>	
2	<a href="https://www.javatpoint.com/mobile-computing">https://www.javatpoint.com/mobile-computing</a>	
3	<a href="https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs13/">https://nptel.ac.in/noc/courses/noc16/SEM2/noc16-cs13/</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	L	M	L	L	M	S	M	M	M	M
<b>CO2</b>	S	S	S	M	M	S	M	S	S	S
<b>CO3</b>	S	S	S	S	M	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	BLOCK CHAIN TECHNOLOGY		L	T	P	C
Core/Elective/Supportive	Elective		4			4
Pre-requisite	Basics of Block Chain & Crypto Currency		Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Understand the fundamentals of block chain and cryptocurrency.</li> <li>2. Understand the influence and role of block chain in various other fields.</li> <li>3. Learn security features and its significance.</li> <li>4. Identify problems &amp; challenges posed by Block Chain.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Demonstrate blockchain technology and crypto currency				K1,K2	
2	Understand the mining mechanism in blockchain				K2	
3	Apply and identify security measures, and various types of services that allow people to trade and transact with bitcoins				K3,K4	
4	Apply and analyze Blockchain in health care industry				K4,K5	
5	Analyze security, privacy, and efficiency of a given Blockchain system				K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>12 hours</b>	
Introduction to Blockchain - The big picture of the industry – size, growth, structure, players. Bitcoin versus Cryptocurrencies versus Blockchain - Distributed Ledger Technology (DLT). Strategic analysis of the space – Blockchain platforms, regulators, application providers. The major application: currency, identity, chain of custody.						
<b>Unit:2</b>	<b>NETWORK AND SECURITY</b>				<b>12 hours</b>	
Advantage over conventional distributed database, Block chain Network, <b>Difference between Centralized, Decentralized and distributed Systems-</b> Mining Mechanism, Distributed Consensus, Block chain 1.0, 2.0 and 3.0 – transition, advancements and features. Privacy, Security issues in Block chain.						
<b>Unit:3</b>	<b>CRYPTOCURRENCY</b>				<b>12 hours</b>	
Crypto currency - History, Distributed Ledger, Bitcoin protocols -Symmetric-key cryptography - Public-key cryptography - Digital Signatures -High and Low trust societies - Types of Trust model: Peer-to-Peer, Leviathan, and Intermediary. Application of Cryptography to Block chain						
<b>Unit:4</b>	<b>CRYPTOCURRENCY REGULATION</b>				<b>11 hours</b>	
Cryptocurrency Regulation - Stakeholders, Roots of Bit coin, Legal views - exchange of cryptocurrency - Black Market - Global Economy. Cyrtoeconomics – assets, supply and						

demand, inflation and deflation – Regulation.		
<b>Unit:5</b>	<b>CHALLENGES IN BLOCK CHAIN</b>	<b>11 hours</b>
Opportunities and challenges in Block Chain – Application of block chain: Industry 4.0 – machine to machine communication – Data management in industry 4.0 – future prospects. Blockchain in Health 4.0 – Block chain properties - Healthcare Costs - Healthcare Quality - Healthcare Value - Challenges for using block chain for healthcare data		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Books</b>		
1	Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, “Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction”, Princeton University Press (July 19, 2016).	
2	Antonopoulos, “Mastering Bitcoin: Unlocking Digital Cryptocurrencies”	
<b>Reference Books</b>		
1	Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System”	
2	Rodrigo da Rosa Righi, Antonio Marcos Alberti, Madhusudan Singh, “Blockchain Technology for Industry 4.0” Springer 2020.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.javatpoint.com/blockchain-tutorial">https://www.javatpoint.com/blockchain-tutorial</a>	
2	<a href="https://www.tutorialspoint.com/blockchain/index.htm">https://www.tutorialspoint.com/blockchain/index.htm</a>	
3	<a href="https://nptel.ac.in/noc/courses/noc20/SEM1/noc20-cs01/">https://nptel.ac.in/noc/courses/noc20/SEM1/noc20-cs01/</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	M	S	M
<b>CO2</b>	S	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	WEB SERVICES			L	T	P	C
Core/Elective/Supportive	Elective			4			4
Pre-requisite	Basics of Distributed Computing			Syllabus Version	2022-23 (Onwards)		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Present the Web Services , Building real world Enterprise applications using Web Services with Technologies XML, SOAP , WSDL , UDDI</li> <li>2. Get overview of Distributed Computing, XML, and its technologies</li> <li>3. Update with QoS and its features</li> <li>4. Develop Standards and future of Web Services</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand web services and its related technologies					K1,K2	
2	Understand XML concepts					K2,K3	
3	Analyze on SOAP and UDDI model					K4,K5	
4	Demonstrate the road map for the standards and future of web services					K5	
5	Analyze QoS enabled applications in web services					K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	INTRODUCTION					<b>12 hours</b>	
Introduction to web services – Overview of Distributed Computing- <b>Benefits and Challenges</b> - Evolution and importance of web services-Industry standards, Technologies and concepts underlying web services-Web services and enterprises-web services standards organization-web services platforms.							
<b>Unit:2</b>	XML FUNDAMENTALS					<b>12 hours</b>	
XML Fundamentals – XML documents - XML Namespaces- XML Schema –Processing XML.							
<b>Unit:3</b>	SOAP MODEL					<b>12 hours</b>	
SOAP: The SOAP model- SOAP messages-SOAP encoding- WSDL: WSDL structure-WSDL <b>Limitations</b> - interface definitions-bindings-services-Using SOAP and WSDL-UDDI: About UDDI- UDDI registry Specification- Core data structures-Accessing UDDI							
<b>Unit:4</b>	TECHNOLOGIES AND STANDARDS					<b>12 hours</b>	
Advanced web services technologies and standards: Conversations overview-web services conversation language-WSCL interface components. Workflow: business process management-workflows and workflow management systems Security: Basics-data handling and forwarding-data storage-errors-Web services security issues.							

<b>Unit:5</b>	<b>QUALITY OF SERVICE</b>	<b>10 hours</b>
Quality of Service: Importance of QoS for web services-QoS metrics-holes-design patterns-QoS enabled web services-QoS enabled applications. Web services management-web services standards and future trends.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	Sandeep Chatterjee, James Webber, “Developing Enterprise Web Services: An Architects Guide”, Prentice Hall, Nov 2003.	
2	Keith Ballinger, “NET Web services: Architecture and Implementation with .Net”, Pearson Education, First Edition, Feb 2003.	
<b>Reference Books</b>		
1	Ramesh Nagappan, “Developing Java Web Services: Architecting and developing secure Web Services Using Java”, John Wiley and Sons, first Edition Feb 2003.	
2	Eric A Marks and Mark J Werrell, “Executive Guide to Web services”, John Wiley and sons, March 2003.	
3	Anne Thomas Manes, “Web Services: A managers Guide”, Addison Wesley, June 2003.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/webservices/index.htm">https://www.tutorialspoint.com/webservices/index.htm</a>	
2	<a href="https://www.javatpoint.com/web-services-tutorial">https://www.javatpoint.com/web-services-tutorial</a>	
3	<a href="https://www.btechguru.com/training--programming--xml--web-services--web-services-part-1-video-lecture--11801--24--147.html">https://www.btechguru.com/training--programming--xml--web-services--web-services-part-1-video-lecture--11801--24--147.html</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	M	S	M	M	M	S
<b>CO2</b>	S	S	S	M	M	S	M	S	M	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	ROBOTIC PROCESS AUTOMATION FOR BUSINESS		L	T	P	C
Core/Elective/Supportive	Elective		4			4
Pre-requisite	Basics of Robots & its Applications		Syllabus		2022-23 (Onwards)	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Learn the concepts of RPA, its benefits, types and models.</li> <li>2. Gain the knowledge in application of RPA in Business Scenarios.</li> <li>3. Identify measures and skills required for RPA</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Demonstrate the benefits and ethics of RPA				K1,K2	
2	Understand the Automation cycle and its techniques				K2	
3	Draw inferences and information processing of RPA				K3,K4	
4	Implement & Apply RPA in Business Scenarios				K5	
5	Analyze on Robots & leveraging automation				K5,K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>INTRODUCTION</b>				<b>12 hours</b>	
Introduction to RPA - Overview of RPA - Benefits of RPA in a business environment - Industries & domains fit for RPA - Identification of process for automation - Types of Robots - Ethics of RPA & Best Practices - Automation and RPA Concepts - Different business models for implementing RPA - Centre of Excellence – Types and their applications - Building an RPA team - Approach for implementing RPA initiatives.						
<b>Unit:2</b>	<b>AUTOMATION</b>				<b>12 hours</b>	
Role of a Business Manager in Automation initiatives - Skills required by a Business Manager for successful automation - The importance of a Business Manager in automation - Analyzing different business processes - Process Mapping frameworks - Role of a Business Manager in successful implementation – Part 1 - Understanding the Automation cycle – First 3 automation stages and activities performed by different people.						
<b>Unit:3</b>	<b>AUTOMATION IMPLEMENTATION</b>				<b>12 hours</b>	
Evaluating the Automation Implementation Detailed description of last 3 stages and activities performed by different people - Role of a Business Manager in successful completion – <b>System Integration</b> - Part 2 - Activities to be performed post-implementation - Guidelines for tracking the implementation success - Metrics/Parameters to be considered for gauging success - Choosing the right licensing option - Sending emails - Publishing and Running Workflows.						
<b>Unit:4</b>	<b>ROBOT</b>				<b>12 hours</b>	

Ability to process information through scopes/systems - Understand the skill of information processing and its use in business – <b>Prototype Implementation</b> -Leveraging automation - Creating a Robot - New Processes. Establish causality by variable behavior - Understand the skill of drawing inference or establishing causality by tracking the behavior of a variable as it varies across time/referenced variable – <b>Non- holonomic Systems</b> -Leveraging automation for this skill - Robot & new process creation.		
<b>Unit:5</b>	<b>ROBOT SKILL</b>	<b>10 hours</b>
Inference from snapshots of curated terms – Omni-source data curation - Multisource trend tracking - Understand the skill of drawing inference from the behavior of curated terms by taking snapshots across systems in reference to time/variable(s) - Leveraging automation for this skill – Robot creation and new process creation for this skill.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Books</b>		
1	Alok Mani Tripathi” Learning Robotic Process Automation: Create Software robots and automate business processes with the leading RPA tool” Packt Publishing Limited March 2018.	
2	Tom Taulli “The Robotic Process Automation Handbook” Apress , February 2020.	
<b>Reference Books</b>		
1	Steve Kaelble” Robotic Process Automation” John Wiley & Sons, Ltd., 2018	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tutorialspoint.com/uiopath/uiopath_robotic_process_automation_introduction.htm">https://www.tutorialspoint.com/uiopath/uiopath_robotic_process_automation_introduction.htm</a>	
2	<a href="https://www.javatpoint.com/rpa">https://www.javatpoint.com/rpa</a>	
3	<a href="https://onlinecourses.nptel.ac.in/noc19_me74/preview">https://onlinecourses.nptel.ac.in/noc19_me74/preview</a>	

<b>Mapping with Programming Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	M	S	S
<b>CO2</b>	S	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	M	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

# Annexure

## **M.Sc. COMPUTER SCIENCE**

### **Syllabus**

**(With effect from 2021 -2022 & Onwards)**

**Program Code:**



**DEPARTMENT OF COMPUTER SCIENCE**

**Providence College for Women**

**(Autonomous)**

(Accredited with "A" Grade by NAAC)

**Spring Field, Coonoor- 643 104,**

**The Nilgiris.**



**Providence College for Women(Autonomous)**  
(Accredited with “A “Grade by NAAC)  
**Spring Field, Coonoor- 643 104, DEPARTMENT**  
**OF COMPUTER SCIENCE**

**MISSION**

1. To keep pace with emerging technologies and concepts, students are thrown open to the ever changing arena, meeting the industry requirements and standards, with the necessary knowledge and skill sets.
2. Are trained to explore more, at their own pace, knowing the demands of the IT world.
3. Apart from all the technical stuff, to inculcate the students about the Human Values and Professional ethics and to play a vital role in the society. Imparting them not only as world class Professionals, but also as tech savvy human beings to serve mankind.

**4. ELECTIVE – I**

5. 1.1. Multimedia and its Applications
6. 1.2. Embedded Systems
7. 1.3. Internet of Things
8. 1.4. Critical Thinking, Design Thinking and Problem Solving9.
- 10.

**11. ELECTIVE – II**

12. 2.1. Mobile Computing
13. 2.2. Block Chain Technology
14. 2.3. Web Services
- 15.2.4. Robotic Process Automation for Business

## THE COMPOSITION OF THE QUESTION PAPER FOR A MAXIMUM OF 50 MARKS

**Internal Assessment****I INTERNAL ASSESSMENT**

Time: 2 Hours

Max. Marks: 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 4 = 20)</b>		
Each question carries <i>four</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (2 x 10 = 20)</b>		
Each question carries <i>ten</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 17	Questions for Long Answers with internal choices (either (a) or (b) type)

**II INTERNAL ASSESSMENT**

Time: 2 Hours

Max. Marks: 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 4 = 20)</b>		
Each question carries <i>four</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (2 x 10 = 20)</b>		

Each question carries <i>ten</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 17	Questions for Long Answers with internal choices (either (a) or (b) type)

**MODEL EXAMINATION**

**Time:** Three Hours

**Max. Marks:** 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 3 = 15)</b>		
Each question carries <i>three</i> marks		
Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (5 x 5 = 25)</b>		
Each question carries <i>five</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 20	Questions for Long Answers with internal choices (either (a) or (b) type)

**EXTERNAL EXAMINATION**

**Time:** Three Hours

**Max. Marks:** 50

NO. OF QUESTION	QUESTION NO	TYPE OF QUESTION
<b>Section A- (10 x 1 = 10)</b>		
Each question carries <i>one</i> mark		
Answer <i>all</i> the questions	Q. No.1. - Q. No. 10	Objective questions with four multiple choices
<b>Section B-(5 x 3 = 15)</b>		
Each question carries <i>three</i> marks		

Answer <i>all</i> the questions	Q. No. 11 - Q. No. 15	Questions for Short Answers with internal choices (either (a) or (b) type)
<b>Section C - (5 x 5 = 25)</b>		
Each question carries <i>five</i> marks		
Answer <i>all</i> the questions	Q. No. 16 - Q. No. 20	Questions for Long Answers with internal choices (either (a) or (b) type)



# Providence College for Women (Autonomous), Coonoor

## Branch V Zoology, Syllabus

### Course: Allied Zoology Paper I

Course code		Animal Diversity	L	T	P	C
Allied		Allied Course-I	4	0	0	3
Pre-requisite		Basic Knowledge on Diversity of Animals	Syllabus Version		2022 – 2023	
<b>Course Objectives:</b>						
1. To give a preliminary knowledge of animal diversity and distribution 2. To enlighten the students about the diverse forms of Invertebrate and Vertebrate animals present around us. 3. To help our students to distinguish various animals and to know the evolutionary sequence of them.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	The student will be able to identify and understand the animal diversity.					K2
2	The learner will be able to understand the diversity and basic taxonomy of Non-chordates.					K2
3	Understand the economic importance of animal diversity					K4
4	To recognize how different body designs solve biological problems related to physiological and environmental challenges.					K5
5	To realize the role of vertebrates in biological communities, ecological interactions, and conservation problems					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>ANIMAL TAXONOMY</b>					<b>12 hours</b>
Principles of Animal Taxonomy –Kingdom Protozoa –Salient features. Type study: Paramecium - Habitat, Morphology and Conjugation. Life cycle of Plasmodium. Salient features of Phylum Porifera.						
<b>Unit:2</b>	<b>COELENTERATA, PLATYHELMINTHES AND ANNELIDA</b>					<b>12 hours</b>
Outlines of Kingdom Animalia. Salient features of Phylum Coelenterata, Platyhelminthes, Aschelminthes, Annelida with any two examples. Colonial organization of Obelia, Parasitic adaptations in Helminthes. External features of Earthworm.						
<b>Unit:3</b>	<b>ARTHROPODA, MOLLUSCA AND ECHINODERMATA</b>					<b>12 hours</b>
Salient features of Phylum Arthropoda, Mollusca and Echinodermata with any two examples. Type study: Cockroach – External features, Mouthparts, Digestive, Nervous and Reproductive system. Economic importance of Mollusca. Water vascular System in Echinodermata						
<b>Unit:4</b>	<b>FISHES AND AMPHIBIA</b>					<b>12 hours</b>

Characters and classification up to Subphylum of Chordates. Salient features of Fishes and Amphibia. Type Study: Frog - External features, Digestive System, Circulatory System, Urinogenital System and Brain.		
<b>Unit:5</b>	<b>REPTILES, AVES AND MAMMALS</b>	<b>12 hours</b>
Salient features Reptiles, Aves and Mammals with two examples. Type study: Rabbit - Morphology, Digestive System, Circulatory System, and Urinogenital Systems.		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Nair NC, Leelavathy S, SoundaraPandian N and Arumugam N. (2013). <i>A Text Book of Invertebrates</i> , Saras Publication Nagercoil, Tamilnadu.	
2	Thangamani A, Prasannakumar S, Narayanan LM, Arumugam N. (2013). <i>A Text Book of Chordates</i> , Saras Publication, Nagercoil, Tamilnadu.	
<b>Reference Books</b>		
1	Jordon EL and Verma PS. (2009), <i>Invertebrate Zoology</i> , 15 <sup>th</sup> edition, S Chand and Co, Zoology Delhi.	
2	Kotpal RL. (2014). <i>Invertebrates – Animal Diversity – I</i> , 11 <sup>th</sup> edition, Rastogi Publications, Meerut.	
3	Verma PS. (2010). <i>Chordate Zoology</i> , Revised edition, S Chand Publishers, New Delhi.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.acs.edu.au/courses/invertebrate-animals-730.aspx">https://www.acs.edu.au/courses/invertebrate-animals-730.aspx</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	M	M	M
<b>CO2</b>	S	M	M	S	S	S	M	L	L	L
<b>CO3</b>	S	M	M	S	S	S	S	L	S	M

\*S-Strong; M-Medium; L-Low

## Course: Allied Zoology Paper II

Course code	Physiology, Immunology Cell and Developmental Biology of Animals	L	T	P	C
Allied	Allied Course-II	4	0	0	3
Pre-requisite	Knowledge about Physiology and Developmental Biology of Animals	Syllabus Version		2022 – 2023	
<b>Course Objectives:</b>					
1. To give a brief introduction to the Cellular and Physiological aspects of animals. 2. Have an enhanced knowledge on Microscopes, Cytological techniques. 3. To give an insight to Developmental biology and Immunology of animals. 4. To give students idea about Teratogenesis, Invitro fertilization, Stem cells and Amniocentesis.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	The students understand the basics of advanced concepts in Zoology.				K2
2	The students will be able to understand the basic physiological process related to adaptation, metabolism and major requirements				K2
3	Able to know the role of hormones and their impact in physiology.				K3
4	To acquire basic knowledge in Immunity and population genetics				K3
5	Understand the basic concepts in developmental biology.				K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>DIGESTION AND RESPIRATION</b>	<b>12 hours</b>			
Digestion of Carbohydrates, Protein and Lipids. Types of blood cells - Respiratory pigments – Structure and function of Hemoglobin - Transport of gases.					
<b>Unit:2</b>	<b>EXCRETION AND NERVOUS SYSTEM</b>	<b>12 hours</b>			
Structure of heart - Mechanism of Blood Clotting (Brief outline), Ammonotellic Ureotellic and Uricotellic animals – Structure of Nephron and formation of Urine (Brief outline). Structure of Neuron and conduction of Nerve impulse.					
<b>Unit:3</b>	<b>MUSCLES AND HORMONES</b>	<b>12 hours</b>			
Types of Muscles – Structure of Striated Muscle – Sliding Filament Theory. Endocrine glands - Role and deficiency of Pituitary hormones, Thyroxine, Insulin and Glucagon, Oestrogen, Progesterone, Androgens and Aldosterone.					
<b>Unit:4</b>	<b>EMBRYOLOGY</b>	<b>12 hours</b>			
Structure of Human Sperm and Graffian follicle – Types of vertebrate eggs –Brief outlines of mechanism of fertilization – Cleavage, Blastula and Gastrula of frog.					
<b>Unit:5</b>	<b>IMMUNOLOGY</b>	<b>12 hours</b>			

Types of Immunity – Antigen and antibody reaction –Structure of Immunoglobulin. AIDS: Causative factors –Symptoms and Prevention. Principle of ELISA. Importance of Drosophila in Genetics.	
<b>Total Lecture hours</b>	
<b>60 hours</b>	
<b>Text Book(s)</b>	
1	Arumugam N. (2017). <i>Developmental Zoology</i> , Saras Publication, Nagargoil, Tamilnadu.
2	Ajoy Paul. (2016). <i>Textbook of Immunology</i> , Books and Allied (P) Ltd, Kolkata.
3	Prasanakumar S, Meena A, Meyyan Pillai RP, DulsyFathima, Narayanan LM and Nallasingam K. (2017). <i>Animal Physiology and Biochemistry</i> , Saras Publication, Nagargoil, Tamilnadu.
<b>Reference Books</b>	
1	Lal SS and Sanjeev Kumar.(2015). <i>Immunology</i> , Rastogi Publication, Meerut.
2	Sastry KV and Priyanka Mathur. (2018). <i>Animal Physiology and Biochemistry</i> , Rastogi Publication, Meerut.
3	Yadav PR. (2001). <i>A Text Book of Embryology</i> , Campus Books International, New Delhi.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.edx.org/learn/physiology">https://www.edx.org/learn/physiology</a>
2	<a href="https://onlinecourses.nptel.ac.in/noc20_bt35/preview">https://onlinecourses.nptel.ac.in/noc20_bt35/preview</a>

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	M	M	M
<b>CO2</b>	S	M	M	S	S	M	M	L	L	L
<b>CO3</b>	S	M	M	S	S	S	S	L	S	M
<b>CO4</b>	S	S	M	M	M	S	S	L	S	S
<b>CO5</b>	S	S	M	S	S	S	M	L	S	S

\*S-Strong; M-Medium; L-Low



## Course: Allied Zoology Practical

Course code		ALLIED ZOOLOGY PRACTICAL	L	T	P	C
Allied		ALLIED ZOOLOGY	0	0	2	0
Pre-requisite		Practical Knowledge of Animal Diversity, Microbiology and Physiology	Syllabus Version		2022 – 2023	
<b>Course Objectives:</b>						
1. Learn and be familiar with the Laboratory techniques. 2. To understand the taxonomic position, body organization and evolutionary relationship of animals. 3. To inculcate the significance of various non chordates and chordates.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Familiar with practical skills in the use of tools, technologies and methods common to microbiology and physiology.					K2
2	Apply knowledge and come to know how to handle different organisms.					K3
3	Analyze and to observe various specimens by using Microscope.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>MAJOR PRACTICAL</b>						
a. Qualitative detection of carbohydrate, Protein and lipids.						
b. Qualitative detection of excretory products (Ammonia, Urea, Uric acid).						
<b>MINOR PRACTICAL</b>						
a. ABO blood group.						
b. Hanging drop preparation to observe motility of Paramecium.						
<b>SPOTTERS</b>						
<b>Identification and Description of :</b>						
<ul style="list-style-type: none"> <li>• Paramecium, Paramecium Conjugation, Binary fission</li> <li>• Obelia Colony, Obelia Medusa</li> <li>• Liver fluke, Tape worm, Ascaris male and female</li> <li>• Earthworm, Cockroach/Prawn, Drosophila</li> <li>• Pila, Starfish</li> <li>• Amphioxus</li> <li>• Shark, Scales of Fishes,</li> <li>• Frog, Frog Egg, Blastula and Gastrula.</li> <li>• Quill feather</li> </ul>						

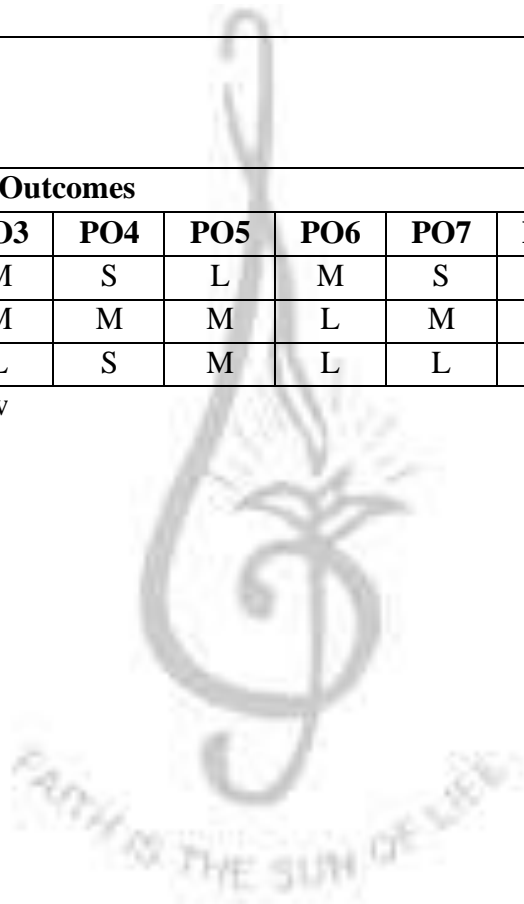
**QUESTION PATTERN: TOTAL MARKS: 25 MARKS.****Major: 08, Minor: 05, Record: 04, Spotter: 08 (4 spotters each carry 2 marks).****Total Practical Hours 30(Each Semester) x 2 = 60 Hours Per Year****Text Book(s)**

1	Arumugam N. (2013). <i>Developmental Zoology</i> , Saras Publication, Nagercoil, Tamilnadu, India.
2	Das S. (2020). <i>Microbiology Practical Manual</i> , CBS Publication, Delhi.
3	Jayasurya, Arumugam N, Dulsy Fatima. (2013). <i>Practical Zoology Vol 3</i> , Saras Publication, Nagercoil, Tamilnadu, India.
4	Singh HR and Neerajkumar. (2014). <i>Animal Physiology and Biochemistry</i> , Vishal Publishing Co. Jalandhar, Delhi.

**Mapping with Programme Outcomes**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	L	M	S	L	S	S
CO2	S	S	M	M	M	L	M	L	S	S
CO3	S	S	L	S	M	L	L	L	S	S

\*S-Strong; M-Medium; L-Low





**PROVIDENCE COLLEGE FOR WOMEN  
(AUTONOMOUS)**

**Re-accredited by NAAC with 'A' Grade**

**COONOOR - 643104**



**PHYSICS SYLLABUS (2022-2023)**

## ALLIED PHYSICS PAPERS FOR B. Sc., MATHS / CHEMISTRY

2022-2023 BATCH

SEMESTER I

<b>Course code</b>	21U1AT01	<b>ALLIED PHYSICS-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied Paper</b>			<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Pre-requisite</b>	The students are expected to know the fundamental properties of matter, heat and electricity.	<b>Syllabus Version</b>	<b>2022-23</b>			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Understand the behavior of matter in everyday life.						
2. Acquire skill of solving related problems.						
3. Get clear idea about properties of matter, electricity and magnetism.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand and define the laws involved in gravitation and elasticity.					K2
2	Develop the knowledge about heat and thermodynamics, sound and spectroscopy.					K3
3	Understand the concept of properties of matter and to recognize their applications in various real problems.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyse; K5 - Evaluate; K6 - Create</b>						
<b>Unit: I</b>	<b>Properties of Matter</b>					<b>12 hours</b>
<b>Gravitation:</b> Newton's law of Gravitation - Determination of G by Boy's method - mass and density of earth – acceleration due to gravity- Determination of g by compound pendulum.						
<b>Elasticity:</b> Basic concepts – bending of beams – depression of cantilever- Determination of Y by uniform and non- uniform bending methods – Torsion in a wire – Determination of rigidity modulus by torsional pendulum.						
<b>Unit:II</b>	<b>Heat, Thermodynamics and Sound</b>					<b>12 hours</b>
Vanderwaal's equation of state-critical constants of a gas-derivation of critical constants in terms of						

Vanderwaal's constants. Black body radiation - Stefan's law – Laws of thermodynamics – Change of entropy in reversible and irreversible processes. <b>Sound:</b> Ultrasonics – Introduction - Properties - Production – Piezoelectric method - applications.		
<b>Unit: III</b>	<b>Atomic Physics</b>	<b>12hours</b>
<b>X-Rays:</b> Introduction – Properties – Principle – Production – Coolidge tube – Bragg's law – derivation — Powder crystal method – Moseley's law and its importance – Compton scattering – Applications.		
<b>Unit: IV</b>	<b>Electricity</b>	<b>12 hours</b>
Ballistic Galvanometer – principle – construction – theory – figure of merit — current and voltage of sensitiveness – Conversion of galvanometer into ammeter and voltmeter – measurement of Thermo EMF and resistance by potentiometer – Electromagnetic induction – Transformers: Theory, energy loss and applications.		
<b>Unit: V</b>	<b>Magnetism</b>	<b>10 hours</b>
Magnetic properties of materials: Magnetic induction B – Magnetisation M – Magnetising field H – Relation between – B, H and M – Magnetic susceptibility – Magnetic permeability – Properties of dia, para and ferro magnetic materials – Curie temperature – Energy loss due to hysteresis – importance of hysteresis curves – magnetic circuit.		
<b>Unit: VI</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>60</b>
<b>Text Book(s)</b>		
1	Properties of Matter and Acoustics, R. Murugesan, 2nd Edition, S.Chand& Co. Ltd. Reprint (2017).	
2	Modern Physics, R.Murugesan, KiruthigaSivaprasath, Twelfth Revised Edition, S.Chand& Co. Ltd. Reprint (2006).	
3	Heat and Thermodynamics, BrijlalN.subramaniyam, S.Chand& Co. LtdReprint(2006).	
4	Electricity and Magnetism , R. Murugesan ,Revised edition , S.Chand& Co Reprint (2014)	
<b>Reference Books</b>		
1	Heat Thermodynamics and Satistical Physics, BrijlalN.subramaniyam,P.S.Hemme,S.Chand&Co,Revised edition (2007).	
2	Thermodynamics and Statistical Physics, Agrawal Prakash, PragatiPrakashan, 27 <sup>th</sup> edition (2015)	

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	<a href="https://www.physicstutoronline.co.uk/alevelphysicsnotes/">https://www.physicstutoronline.co.uk/alevelphysicsnotes/</a>
2	<a href="https://www.askiitians.com/revision-notes/physics/atomic-physics/">https://www.askiitians.com/revision-notes/physics/atomic-physics/</a>
3	<a href="http://www.khanacademy.org/science/physics/elasticity/surface-tension">www.khanacademy.org/science/physics/elasticity/surface tension</a>
4	<a href="https://sites.google.com/brown.edu/lecture-demonstrations/home?authuser=0">https://sites.google.com/brown.edu/lecture-demonstrations/home?authuser=0</a>
Course Designed By: <b>Dr. P. Sagunthala, Dr. P. Yasotha</b>	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	M	S	S	S	L	S	S
CO2	S	S	M	S	L	M	S	M	M	S
CO3	M	S	S	L	S	M	L	M	S	M

\*S-Strong; M-Medium; L-Low

**SEMESTER II**

<b>Course code</b>	<b>21U2AT02</b>	<b>ALLIED PHYSICS-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied paper</b>			<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Pre-requisite</b>	The students are expected to know the fundamentals of Nuclear Physics, Lasers, Semiconductors and electronics.		<b>Syllabus Version</b>		<b>2022-23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Gain a well understanding of various physics concepts involved in day-to-day life.						
2. acquire knowledge in physics concepts and problem solving skills						
3. developing skills to meet competitive exams						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Acquire knowledge on basic concepts of photoelectric effect and fission, fusion and to get clear idea on wave mechanics.				K1	
2	Understand the features of Nuclear forces, photoelectric cells, semiconductor diodes, and their fundamental concepts.				K2	
3	Understand the concept of Laser properties, digital electronics and to recognize their applications in real life.				K4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit: I</b>						
<b>Modern Physics</b>				<b>12 hours</b>		
Photo electric effect – Laws of photo electric effect – Einstein’s photo electric equation – verification of Einstein’s photo electric equation by Millikan’s experiment – photo electric cells – applications.						
<b>Wave mechanics:</b> De Broglie matter waves – determination of De Broglie wave length – Experimental study of De Broglie matter wave by G.P.Thomson experiment.						
<b>Unit: II</b>						
<b>Nuclear Physics</b>				<b>11 hours</b>		
Characteristics of nuclear forces – nuclear structure by liquid drop model – Binding energy – mass defect – particle accelerators – cyclotron and betatron – nuclear fission: definition – energy released – chain reaction – atom bomb – nuclear fusion: definition – source of Stellar energy – Hydrogen bomb – elementary particles – Leptons, Mesons and Baryons						



<b>Unit: III</b>	<b>Laser Physics</b>	<b>11 hours</b>
Purity of spectral lines – Coherence length and time – spontaneous and induced emissions – population inversion – meta stable state – conditions for laser actions – Ruby laser – Helium – neon laser – applications of lasers – Raman effect – Raman shift – stokes and anti-stokes lines – Laser Raman Spectrometer.		
<b>Unit: IV</b>	<b>Semiconductor Physics</b>	<b>12 hours</b>
Volt – Ampere Characteristics of P-N junction Diode – Zener diode – applications of Zener diodes – photo diode – principle of LED– Frequency Modulation and Amplitude modulation – basic principle of antennas – block diagram of Superhetrodyne receiver – block diagram of monochrome TV receiver – basic principles and applications of RADAR.		
<b>Unit: V</b>	<b>Digital Electronics</b>	<b>12 hours</b>
<b>Integrated Electronics</b> Steps in fabrication of Monolithic IC's – General applications of IC's. <b>Analog and digital computers</b> – organization of digital computers – number systems – conversion of binary into decimal – conversion of decimal to binary – binary addition and subtraction – Basic logic gates – NAND and NOR as an universal logic gates – Demorgan's theorems – Boolean algebra – applications of Demorgan's theorems – Half adder and full adder circuits.		
<b>Unit: VI</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60</b>
<b>Text Book(s)</b>		
1	Modern Physics, R. Murugesan, Kiruthiga Sivaprasath, Twelfth Revised Edition, S. Chand & Co. Ltd. Reprint (2006)	
2	Principles of Electronics, V.K. Metha, Reprint, S. Chand & Co (2000)	
<b>Reference Books</b>		
1	A Text Book of electronics, R.S Sedha, S. Chand & Co. Ltd. Reprint (2008).	
2	Modern Physics, Sehgal. Chopra, Sehgal, S. Chand & Co	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.askiitians.com/revision-notes/physics/atomic-physics/">https://www.askiitians.com/revision-notes/physics/atomic-physics/</a>	
2	<a href="https://www.askiitians.com/revision-notes/physics/nuclear-physics/">https://www.askiitians.com/revision-notes/physics/nuclear-physics/</a>	

3 <https://www.askiitians.com/revision-notes/physics/solid-and-electronic-device/>Course Designed By: **Dr. P. Sagunthala and Dr. P. Yasotha****Mapping with Programme Outcomes**

<i>COs</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>	<i>PO7</i>	<i>PO8</i>	<i>PO9</i>	<i>PO10</i>
<i>CO1</i>	<i>S</i>	<i>S</i>	<i>M</i>	<i>M</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>L</i>	<i>S</i>	<i>S</i>
<i>CO2</i>	<i>S</i>	<i>M</i>	<i>S</i>	<i>M</i>	<i>M</i>	<i>S</i>	<i>S</i>	<i>L</i>	<i>M</i>	<i>S</i>
<i>CO3</i>	<i>M</i>	<i>S</i>	<i>M</i>	<i>L</i>	<i>S</i>	<i>M</i>	<i>L</i>	<i>M</i>	<i>S</i>	<i>M</i>

## SEMESTER I&amp;II

<b>Course code</b>	<b>21U2AP01</b>	<b>ALLIED PHYSICS PRACTICAL</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied Practical</b>		(Examination at the end of II semester)	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>
<b>Pre-requisite</b>	Should have the fundamental knowledge of Basic Experiments in physics		<b>Syllabus Version</b>		<b>2022- 23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Understand the basics of Experimental techniques and apply it</li> <li>2. Gain knowledge about different light and optical properties.</li> <li>3. Motivate the students to apply the principles of physics in their day-to-day life.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	attain skill to understand the usage of basic laws and theories to determine various properties of the materials given.					K3
2	analyze the characteristics of various diodes and construct power supply.					K4
3	acquire the knowledge of the potentiometer and apply it for various experiments.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>LIST OF EXPERIMENTS</b> (Any twelve experiments)					<b>56 hours</b>	
<ol style="list-style-type: none"> <li>1. Acceleration due to gravity-Compound pendulum method</li> <li>2. Moment of inertia – Torsional pendulum method</li> <li>3. Young’s modulus - Uniform bending - Optic lever method</li> <li>4. Young’s modulus - Non-uniform bending - Pin and microscope</li> <li>5. Rigidity modulus – Static torsion method.</li> <li>6. Frequency of A.C - Sonometer</li> <li>7. Thermal conductivity - Lee’s disc method.</li> <li>8. Refractive index of a solid prism – Spectrometer</li> <li>9. Refractive index of a liquid prism – Spectrometer</li> <li>10. (i-d) curve - solid prism - Spectrometer</li> <li>11. Wavelength of spectral lines – Grating - Minimum deviation - Spectrometer</li> <li>12. Radius of curvature of lens - Newton’s rings method.</li> <li>13. Viscosity of highly viscous liquid – Stoke’s method.</li> <li>14. Surface tension - Drop weight method</li> </ol>						

15. Low range voltmeter calibration - Potentiometer	
16. Low range ammeter calibration - Potentiometer	
17. Construction of IC regulated power supply	
18. Characteristics of PN Junction diode	
19. Characteristics of Zener diode	
20. Verification of truth tables of logic gates- AND, OR and NOT	
<b>Contemporary Issues</b>	<b>4 hours</b>
Online workshop, Webinars on Experimental Electronics	
<b>Total Practical Hours: 60</b>	
<b>Reference Books</b>	
1	Practical Physics and Electronics, C.C.Ouseph, U.J.Rao, V.Vijayendran, S.Viswanathan Publishers (2007)
2	A text book of practical Physics, M.N.Srinivasan, S.Balasubramanian, R.Ranganathan, Sultan Chand&Sons (2017)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/115/105/115105110/">https://nptel.ac.in/courses/115/105/115105110/</a>
2	<a href="https://www.youtube.com/playlist?list=PLuiPz6iU5SQ8-rZn_LgLoFRX7n8z4tHYK">https://www.youtube.com/playlist?list=PLuiPz6iU5SQ8-rZn_LgLoFRX7n8z4tHYK</a>
3	<a href="https://www.slideshare.net/mobile/sunilrathore77398/basicanalogelectronics">https://www.slideshare.net/mobile/sunilrathore77398/basicanalogelectronics</a>
Course Designed By: <b>Dr. P. Sagunthala and Dr. P. Yasotha</b>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	S	M	L	M	S	M
<b>CO2</b>	S	S	M	S	S	L	M	S	S	S
<b>CO3</b>	M	M	S	S	L	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

# Allied Chemistry

## Syllabus

### **PROVIDENCE COLLEGE FOR WOMEN**

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COONOOR - 643104

**2022 – 2023 onwards**

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<b>Course code</b>	<b>21U3A T03</b>	<b>Allied Chemistry - I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied</b>		Allied I – Paper - I	<b>4</b>		<b>-</b>	<b>3</b>
<b>Pre-requisite</b>		<b>Higher Secondary Level Chemistry</b>	<b>Syllabus Version</b>	<b>2022 - 2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Explain the conducting properties of metals.</li> <li>2. Outline the reactivity of boron compounds, the principles of bonding, hybridisation and stereochemistry</li> <li>3. To imbibe the knowledge of silicones, fuel gases, dyes and their industrial applications</li> <li>4. To inculcate the chemistry behind day to day used items like toiletries, detergents etc</li> <li>5. Explain the physical chemistry behind the reaction rates and solutions.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the properties Molecular orbital theory and their uses, the principle behind the synthesis and applications of boron compounds.					K1-K4
2	Understand about silicones fuels gases and their industrial applications. The theory behind colours and dyes, their preparation and dyeing.					K2-K4, K6
3	Understand the bonding and structure of various hydrocarbons and electronic effects. Apperciate the optical properties of compounds and how it determines the compounds nature itself					K1-K4
4	Explain the chemistry behind toiletries and cleaning agents.					K2-K5
5	Understand the kinetics benind chemical reactions and the nature of solutions					K1-K3
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>Chemical Bonding and Boron Compounds</b>					<b>12 hours</b>
<ol style="list-style-type: none"> <li>1. Molecular orbital theory, bonding, antibonding and non-bonding orbitals. Molecular orbitals. MO configuration of H<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>, F<sub>2</sub>. Bond order. Diamagnetism and paramagnetism.</li> <li>2. <b>Boron compounds:</b> Structure, preparation, properties and uses of NaBH<sub>4</sub>, Diborane and Borazole</li> </ol>						
<b>Unit:2</b>	<b>Industrial and Dye Chemistry</b>					<b>12 hours</b>
<ol style="list-style-type: none"> <li>1. <b>Industrial Chemistry:</b> Synthesis, properties and uses of silicones. Fuel gases: composition and uses of natural gas, water gas, semi water gas, carbureted water gas, producer gas, oil gas.</li> <li>2. <b>Dye Chemistry:</b> Terms: Chromophore – auxochrome - bathochromic shift - hypsochromic shift - hyperchromic effect - hypsochromic effect - Dyes: Azo and triphenyl methane dyes - Preparation of Methyl Orange and Malachite green</li> </ol>						
<b>Unit:3</b>	<b>Covalent Bonding and Stereoisomerism</b>					<b>12 hours</b>
<ol style="list-style-type: none"> <li>1. <b>Covalent bond:</b> Orbital overlap – hybridization - geometry of organic molecules- CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, and C<sub>2</sub>H<sub>2</sub>. Definition with example: Inductive, Electromeric, Mesomeric, hyperconjugative and steric effect.</li> </ol>						

<b>2. Stereoisomerism:</b> Conditions of optical activity - optical isomerism of lactic acid and tartaric acid - geometrical isomerism of maleic and fumaric acids.		
<b>Unit:4</b>	<b>Chemistry of Toiletries and Cleaning Agents</b>	<b>12 hours</b>
<b>1. Toiletries:</b> Bath soap – shower gel - water softeners - tooth pastes-ingredients - their characteristic functions-mouth washes-shaving creams-after shave preparations. <b>2. Cleaning Agents:</b> Detergents - classification - formulation-cleansing action-optical brighteners-bleachers-phenoyls - hand sanitizer.		
<b>Unit:5</b>	<b>Physical Chemistry: Solutions and Kinetics</b>	<b>12 hours</b>
<b>1. Solutions:</b> Raoult's law - Deviation from ideal behaviour - positive deviation - Negative deviation - Fractional distillation. <b>2. Kinetics:</b> Rate - order - molecularity - pseudo first order - determination of order by graphical method - Effect of temperature on the rate - Energy of activation		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Principles of Inorganic Chemistry, B.R. Puri L.R. Sharma, S.Chand & Co.	
2	Inorganic Chemistry, P.L.Soni, Sultan Chand & Sons.	
3	Principles of physical chemistry, B.P. Puri, L.R. Sharma and M.S. Phathania, S.Chand & Company	
<b>Reference Books</b>		
1	Advanced Organic Chemistry, B.S.Bahl, Arun bahl, S.Chand & Co.,	
2	Perfumes, Cosmetics and Soaps, W.A.Poucher (Vol.3), 9th Edition, Springer Science Business Media, 1993.	
3	Handbook of Cosmetic Science and Technology, Barel, A.O.; Paye, M.; Maibach, H.I.(2014), CRC Press.	
4	Pharmaceutics and Cosmetics, Gupta, P.K.; Gupta, S.K.(2011), Pragati Prakashan	
5	Chemical Process Industries, R. Norris Shreve and Joseph A.Brink,Jr.,4 th Edition, McGraw Hill, 1977.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/104/103/104103071/">https://nptel.ac.in/courses/104/103/104103071/</a>	
2	<a href="https://www.youtube.com/watch?v=zdmEaXnB-5Q">https://www.youtube.com/watch?v=zdmEaXnB-5Q</a>	
3	<a href="https://www.britannica.com/science/band-theory">https://www.britannica.com/science/band-theory</a>	
4	<a href="https://www.chem.purdue.edu/gchelp/solutions/whatis.html">https://www.chem.purdue.edu/gchelp/solutions/whatis.html</a>	
Designed By: Dr. S. P. Rajasingh		

<b>Mapping with Programme Outcomes</b>							
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1</b>	M	S	M	S	S	S	S
<b>CO2</b>	S	S	S	S	S	M	S
<b>CO3</b>	M	M	S	S	S	M	S
<b>CO4</b>	S	S	S	S	M	M	S
<b>CO5</b>	S	S	M	S	S	M	M

\*S-Strong; M-Medium; L-Low

Course code	21U4A T04	Allied Chemistry - II	L	T	P	C
Allied		Allied I – Paper - II	4		-	3
Pre-requisite		Higher Secondary Level Chemistry	Syllabus Version	2022- 2023		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To explain bioinorganic chemistry in biological systems.</li> <li>2. Appreciate the need for paints and explosives.</li> <li>3. To understand the role of polymers and rubbers to mankind.</li> <li>4. Show the importance of fertilizers and the unavoidability of insecticides in agriculture.</li> <li>5. Explain the electrochemistry and electrical storage.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Appreciate the role of metals in biological system and their therapeutic effects					K1-K3
2	Understand about the importance of paints and the need for explosives as well as the bad face of war.					K2-K5
3	Understand the importance of polymers and rubbers in our day to day life					K1-K4
4	Appreciate the need for fertilizers and insecticides in the Agricultural sector					K2-K5
5	Understand the importance of electrochemistry and energy storage devices					K2-K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>		<b>Cordination Chemistry and The Importance of Metals</b>	<b>12 hours</b>			
<b>1. Coordination chemistry:</b> Chelation examples - Hemoglobin – Chlorophyll - Applications of EDTA in qualitative and quantitative analysis. <b>2. Metals in Health:</b> Application of therapeutic chelating agents- Metal-based drugs cis-platin, carboplatin, platinum anti-cancer drugs, gadolinium MRI contrast agents, Gold arthritic agents						
<b>Unit:2</b>		<b>Paints and Explosives</b>	<b>12 hours</b>			
<b>1. Paints:</b> classification – constituents – Pigment Volume Concentration – Distemper – Varnishes – Lacquers - Pigments – name and formula of different coloured pigments and their uses – Toners – Nano paints <b>2. Explosives:</b> classification – characteristics – chemistry of Nitrocellulose – nitroglycerine - gun powder - RDX – mustard gas – phosgene - nerve gas – Screening smokes						
<b>Unit:3</b>		<b>Polymers and Rubbers</b>	<b>12 hours</b>			
<b>1. Polymers:</b> Preparation, properties and uses of: Poly olefins – Polythene – PTFE – PVC – Polypropylene – Polystyrene <b>2. Rubbers:</b> Natural and synthetic rubbers: Constitution of natural rubber – Butyl – Buna-N – Neoprene – Thiocol – Polyurethane – Silicone rubbers						



<b>Unit:4</b>	<b>Agricultural Chemistry – Fertilizers and Insecticides</b>	<b>12 hours</b>
<b>1. Fertilizers:</b> Classification of fertilizers- Preparation and uses of Urea, DAP, NPK, SSP, TSP and bio-fertilizers (vermicompost, coircompost, panchakavia) – types and advantages of biofertilizers <b>2. Insecticides:</b> Classification of insecticides – Structure and effects of dinitro phenols, DDT, methoxychlor and BHC – comparison of artificial pesticides and bio-pesticide.		
<b>Unit:5</b>	<b>Electrochemisry, Fuel cells and Energy Storage</b>	<b>12 hours</b>
<b>1. Electrochemistry:</b> EMF (Definition) - Daniel cell - Reference electrode - Standard Hydrogen Electrode (SHE) -Saturated Calomel Electrode (SCE). Determination of pH - glass electrodes <b>2. Fuel cell and Energy storage:</b> Hydrogen - Oxygen fuel cell – Batteries: Lead-storage battery - Batteries of future:Lithium ion batteries.		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Principles of physical chemistry, B.P. Puri, L.R. Sharma and M.S. Phathania, S.Chand & Company	
2	Inorganic Chemistry, P.L.Soni, Sultan Chand & Sons.	
3	Principles of Inorganic Chemistry, B.R. Puri L.R. Sharma, S.Chand & Co.	
4	Engineering Chemistry by Jain and Jain; Dhanpat Rai Publication Co. 2014.	
<b>Reference Books</b>		
1	Environmental Chemistry, A.K.De, 6th Edition, New Age International, New Delhi, 2006	
2	A Text Book of Environmental Chemistry and Pollution Control, S.S. Dara–S. Chand Publication 2012.	
3	Chemical Process Industries, R. Norris Shreve and Joseph A.Brink,Jr.,4 th Edition, McGraw Hill, 1977.	
4	History of fertilizer chemistry by T.P. Hignett, SPRINGER ,1985	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://onlinecourses.nptel.ac.in/noc19_cy26/preview">https://onlinecourses.nptel.ac.in/noc19_cy26/preview</a>	
2	<a href="https://nptel.ac.in/courses/126/105/126105014/">https://nptel.ac.in/courses/126/105/126105014/</a>	
3	<a href="https://nptel.ac.in/content/storage2/courses/103107086/module1/lecture1/lecture1.pdf">https://nptel.ac.in/content/storage2/courses/103107086/module1/lecture1/lecture1.pdf</a>	
4	<a href="https://nptel.ac.in/content/storage2/courses/108103009/download/M9.pdf">https://nptel.ac.in/content/storage2/courses/108103009/download/M9.pdf</a>	
5	<a href="https://nptel.ac.in/courses/113105028/">https://nptel.ac.in/courses/113105028/</a>	
6	<a href="https://www.youtube.com/watch?v=no4vRKvKxcU">https://www.youtube.com/watch?v=no4vRKvKxcU</a>	
7	<a href="https://www.youtube.com/watch?v=5XKpJ24P-KE">https://www.youtube.com/watch?v=5XKpJ24P-KE</a>	
Designed By: Dr. S. P. Rajasingh		

<b>Mapping with Programme Outcomes</b>							
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1</b>	S	M	M	M	S	S	S
<b>CO2</b>	S	S	S	M	S	M	S
<b>CO3</b>	S	M	S	S	S	S	M
<b>CO4</b>	S	S	S	M	S	M	S
<b>CO5</b>	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>21U4AP02</b>	<b>Chemistry Practical</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Allied</b>		Allied Chemistry	-	-	2	3
<b>Pre-requisite</b>		<b>Higher Secondary Level Lab Knowledge</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Inculcate the students how to handle the basic laboratory apparatus and perform tests.</li> <li>2. Impart the first-hand knowledge and experience on estimation of an ion, acid and base.</li> <li>3. Provide the student knowledge on analysis of an unknown organic substance using Preliminary and confirmation test.</li> <li>4. Make the student skilful enough and prepare for a position in an analytical laboratory or a company.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Estimate the amount of ion present in the given solution through volumetric analysis					K1-K6
2	Find the groups/elements and characters present in the given organic substance through qualitative analysis					K1-K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Part I</b>						
<b>VOLUMETRIC ANALYSIS</b>					<b>30 hours</b>	
<ol style="list-style-type: none"> <li>1. Estimation of sodium hydroxide using standard sodium carbonate.</li> <li>2. Estimation of hydrochloric acid- standard oxalic acid.</li> <li>3. Estimation of oxalic acid- standard sulphuric acid.</li> <li>4. Estimation of ferrous sulphate- standard Mohr salt solution.</li> <li>5. Estimation of oxalic acid- standard ferrous sulphate.</li> </ol>						
<b>Part II</b>						
<b>ORGANIC ANALYSIS</b>					<b>30 hours</b>	
Systematic Qualitative Analysis of given Organic Substance and Report on the following						
<ol style="list-style-type: none"> <li>1. Detection of Elements (N, S, Halogens).</li> <li>2. To distinguish between aliphatic and Aromatic.</li> <li>3. To distinguish between saturated and unsaturated.</li> <li>4. Functional group tests for phenols, acids (mono and di), aromatic primary amine, amide, diamide, carbohydrate, Functional groups characterized by confirmatory test.</li> </ol>						
<b>Total Practical hours</b>					<b>60 hours</b>	
<b>Text Book(s)</b>						
1	Basic Principles of Practical Chemistry, Kulandaivelu A.R., Veeraswamy R., Venkateswaran, Sultan Chand & Sons, 2017					
2	Practical Chemistry, Pandey D.N., sultan chand publishers, 2018					

<b>Reference Books</b>	
1	Vogels Text book of Practical Organic Chemistry, Brian S. Furniss, Antony J. Hannaford, Peter W. G. Smith, Fifth Edition, Bath Press, Great Britan, 1989
2	Vogels Textbook of Quantitative Chemical Analysis, G H Jeffery, J Bassett, J Mendham, R C Denney, Fifth Edition, Bath Press, Great Britan, 1989
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/104/106/104106108/">https://nptel.ac.in/courses/104/106/104106108/</a>
2	<a href="https://www.youtube.com/watch?v=n4esSHxz_J8">https://www.youtube.com/watch?v=n4esSHxz_J8</a>
3	<a href="https://www.toppr.com/guides/chemistry/organic-chemistry/qualitative-analysis-of-organic-compounds/">https://www.toppr.com/guides/chemistry/organic-chemistry/qualitative-analysis-of-organic-compounds/</a>
4	<a href="https://www.youtube.com/watch?v=7bmQkQW8bbs">https://www.youtube.com/watch?v=7bmQkQW8bbs</a>
5	<a href="https://www.youtube.com/watch?v=wRAo-M8xBHM">https://www.youtube.com/watch?v=wRAo-M8xBHM</a>
Designed By: Dr. S. P. Rajasingh	

<b>Mapping with Programme Outcomes</b>							
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1</b>	S	S	S	M	S	S	S
<b>CO2</b>	S	S	S	S	S	S	S

S-Strong; M-Medium; L-Low

PROVIDENCE COLLEGE FOR WOMEN(AUTONOMOUS),COONNOOR

For Students admitted during the year 2022-23 onwards

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
11 T	<b>TAMIL Paper – I</b> (Poetry, Short Story, Grammar, Translation and Communicative Skills, History of Tamil Literature)	3	6	-	50	50	100
<b>SECOND SEMESTER</b>							
21T	<b>TAMIL Paper – II</b> (Poetry, Prose, Grammar, Communicative Skills, History of Tamil Literature)	3	6	-	50	50	100
<b>THIRD SEMESTER</b>							
31 T	<b>TAMIL Paper – III</b> (Poetry, Novel, Work book Communicative Skills, History of Tamil Literature)	3	6	-	50	50	100
<b>FOURTH SEMESTER</b>							
41T	<b>TAMIL Paper – IV</b> (Poetry, Drama, Communicative Skills, History of Tamil Literature)	3	6	-	50	50	100



**PROVIDENCE COLLEGE FOR WOMEN**

**(Autonomous)**

**Re-Accredited by NAAC as 'A' Grade**

**Springfield, Coonoor – 643104, The Nilgiris**

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**PART – 1 HINDI**

**SYLLABUS: 2022– 23**

**FIRST SEMESTER**

- **COURSE OBJECTIVE:**
- Improves grammatical knowledge
- Will continue to read and learn about articles and think about them
- It is possible to read and understand short stories and understand the thoughts and life of the people of this state
- Translation knowledge and the ability to read and analyze a message are also available

<b>PART I HINDI PAPER I</b>		
<b>Unit No.</b>		<b>HOURS</b>
<b>I</b>	<b>PROSE : NUTHAN GADYA SANGRAH</b> Lesson 1 – Bharathiya Sanskurthi - Dr.Rajendra Prsad Lesson 3 – Razia - Ramaviksha Benipuri Lesson 4 – Makreal -Yespal Lesson 5 – Bahtha Pani Nirmala -‘AGEYA’ Lesson 6 – Rashtrapitha Mahathma Gandhi - Mukthibodh Lesson 9 – Ninda Ras - Harishankar Parsayi.	<b>18</b>
<b>II</b>	<b>NON DETAILED TEXT SHORT STORIES: KAHANI KUNJ</b> 1. Pareksha – Premchand 2. Mamtha - Jayashankar Prasad 3. Apna paraya - Jaynendrakumar 4. Admi ka bachcha - Yespal 5. Bolaram ka jeev - Harishankar Parsayi 6. Vapasi - Mannu Bhandari	<b>18</b>
<b>III</b>	<b>GRAMMAR : SHABDHA VICHAR ONLY</b> (NOUN, PRONOUN, ADJECTIVE, VERB, TENSE, CASE ENDINGS) Theoretical & Applied	<b>14</b>
<b>IV</b>	<b>TRANSLATION : English – Hindi only.</b> ANUVADH ABHYAS – III (1-15 lessons only)	<b>12</b>
<b>V</b>	<b>COMPREHENSION:</b> 1 Passage from ANUVADH ABHYAS–III (16-30)	<b>10</b>
	<b>TOTAL</b>	<b>72</b>

**Teaching methods:**

Lecturing, Assignment, Group Discussion, Quiz, Group Activity. PowerPoint Projection through LCD

**Text Book:**

Nuthan gadya sangrah, 2009, editor : Jayaprakash, publisher : Sumitra prakashan sumitras, 16/4, hastings road, Allahabad – 211001.

Kahani kunj, 2011, Editor : V.P. Amithab. Publisher : Govind Prakashan Sadhar Bagaar, Mathura, Uttar Pradesh, –281 001

**Reference Books:**

NAVEEN HINDI Vyakaran, 2002, Dakshin Bharat Hindi Prachar Sabha, Chennai – 600 017

**Web Link:**

<https://hi.wikipedia.org/wiki/>  
<https://en.wikipedia.org/wiki/Premchand>  
<http://hindigrammar.in/>



## SECOND SEMESTER

● **COURSE OBJECTIVE:**

- A basic understanding of contemporary poetry can be gained and the nature of modern poetry can be realized.
- Realizing the nature of drama and its nature and improving the knowledge of reading and understanding the nature of contemporary plays.
- Understands the benefits of correspondence and can enhance the correspondence you need.
- Translation is especially useful for translating from Hindi to English

<b>PART I - HINDI II</b>		
<b>Unit No.</b>		<b>Hours</b>
<b>I</b>	<b>MODERN POETRY :</b> <b>PANCHVATI by MYTHLI SHARAN GUPT</b>	<b>18</b>
<b>II</b>	<b>ONE ACT PLAY: EKANIKI PIYUSH</b>  1. Owrangjeb ki aakinrath– Ramkumar varma 2. Ek din - Lakshminarayan Misra 3. Vapasi - Vishnuprabhakar 4. Badsurath rajkumari - Krishnachandra 5. Aakket - Harijeeth	<b>18</b>
<b>III</b>	<b>LETTER WRITING</b> (Leave Letter, Job Application, Ordering Books, Letter to Publisher, Personal Letter)	<b>10</b>
<b>IV</b>	<b>CONVERSATION:</b> (Doctor & Patient, Teacher & Student, Storekeeper & Buyer, Two Friends, Booking Clerk & Passenger at Railway Station, Auto rickshaw driver and Passenger) Ref : Bolchal Ki Hindi Aur Sanchar by Dr. Madhu Dhavan Vani Prakashan, New Delhi.	<b>12</b>
<b>V</b>	<b>TRANSLATION: HINDI-ENGLISH ONLY</b> Lessons – 1-15 only <b>ANUVADH ABYAS-III</b>	<b>14</b>
	<b>TOTAL</b>	<b>72</b>



**Teaching methods:**

Lecturing, Assignment, Group Discussion, Quiz, Group Activity. PowerPoint Projection through LCD

**Text Book:**

Panchvati, Mythili sharan Gupt, 2015, Rajkamal Prakashan, 1B Nethaji Subash Marg, New Delhi.

Ekaniki piyush ,Srimathi Usha mehra, 1999, Hindu sahithya Bhandar, 55 choupattyan rode, Lacknow 226003

**Reference Books:**

Bolchal Ki Hindi Aur Sanchar, 2015, Dr. Madhu Dhavan Vani Prakashan, New Delhi.

**Web Link:**

<https://hi.wikipedia.org/wiki/>  
<https://en.wikipedia.org/wiki/Premchand>  
<http://hindigrammar.in/>



## PART – 1 HINDI

SYLLABUS: 2022 – 23

PROGRAM CODE –

COURSE CODE -

### THIRD SEMESTER

□ **COURSE OBJECTIVE:**

- May have knowledge of the contents of primitive poetry.
- Learn about contemporary poetry and its techniques.
- Interest in reading poetry and the ability to express social thoughts will improve.
- This will help to understand the basics of Hindi Literature and to understand Hindi Literature properly.
- Knowledge of the elements of poetry and the knowledge of translation will improve.

Unit No	PART I - HINDI III	Hours
I	<b>POETRY: KAVYA LEHAR – by Dr. V. Baskhar</b> <b>PRACHEEN KAVITHA</b> 1. MAHATMA KABER – SAKI 2. GOSWAMY TULASIDAS – RAM-VAN-AMAN 3. MAHATMA SOORDAS- BAAL-LEELA 4. KAVIVAR RAHIM - DOHE	18
II	<b>POETRY: KAVYA LEHAR – by Dr. V. Baskhar</b> <b>AADHUNIK KAVITHA</b> 1. MYTHILI SHARN GUPTH – VIKARAL BIJALI 2. SUMITHRANANDAN PANTH – PARIVARTHAN 3. SURYAKANTH THRIpati NIRALA – SANDHAYASUNDARAI 4. RAMDHARI SING DINKAR – BHAGAVAN KE DAKKIYA 5. HARIVANSRAY BACHCHAN – KOTA SIKKA 6. AGYEYA – ANUBHAV PARIPAKVA 7. NARESH MEHTHA – ULLANGAN 8. DHARMAVEER BHARATHI – TUM MERE KOUN HO	18
III	<b>HISTORY OF HINDI LITERATURE :(SAHITHYIK TIPPANIAN)</b> 1. AMMER KUSRO 2. VIDHYAPATHI 3. CHANDBARDHAYI 4. PRUTHIVIRAJ RASO 5. RAMACHARITHA MANAS 6. VINAYA PATRIKA	10

<b>IV</b>	<b>COMPREHENSION</b>	<b>12</b>
<b>V</b>	<b>TRANSLATION</b> : <b>ENGLISH-HINDI only</b> ANUVADH ABHYAS – III (16-30 Lessons only)	<b>14</b>
	<b>TOTAL</b>	<b>72</b>

**Teaching methods:**

Lecturing, Assignment, Group Discussion, Quiz, Group Activity. PowerPoint Projection through LCD

**Text Book:**

Kavya lehar – Dr.V.Baskhar, Jawahar Pusthakalay, Sadar Bazaar, Mathura-U.P.281001.  
Anuvadh abyas-III, Dakshin Bharath Hindi Prachar Sabha Chennai – 17.

**Reference Books:**

Hindi sahithya ka saral ithihaas, by rajnath sharma, vinod pustak mandir, agra-282  
Kavya Pradeep Rambadri Shukla, Hindi Bhavan, 36, Tagore Town, Allahabad – 211 00

**Web Link:**

<https://hi.wikipedia.org/wiki/>  
<https://en.wikipedia.org/wiki/Premchand>

## FOURTH SEMESTER

<b>Course code</b>	<b>HD4</b>	<b>HINDI PAPER- IV</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Part-I</b>		<b>PART I</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Pre-requisite</b>			<b>Syllabus Version</b>			<b>2022-23</b>

- COURSE OBJECTIVE:**
- Knowledge of contemporary drama contents of Hindi literature
- Learn novels and its techniques. The ability to read novels and express criticism about it and the ability to express social thoughts will improve
- There will also be litigation messages in Hindi and news on speech techniques
- Able to write articles on their own and improve their sophisticated translation skills.

<b>Unit No.</b>	<b>PART I - HINDI IV</b>	<b>Hours</b>
<b>I</b>	<b>DRAMA: Bina Diwarom ke Khar- Mannu bhandari</b>	<b>18</b>
<b>II</b>	<b>NOVEL : NIRMALA – Premchand</b>	<b>18</b>
<b>III</b>	<b>LOKKOTHI &amp; MUHAVARE - NAVEEN HINDI VYAKARAN</b> (Selected Lokkokthi -10 & Muhavare-10)	<b>10</b>
<b>IV</b>	<b>GENERAL ESSAY : AADARSH NIBANDH</b>	<b>12</b>
<b>V</b>	<b>TRANSLATION : HINDI-ENGLISH only</b> <b>ANUVADH ABHYAS – III</b> (16-30 Lessons only)	<b>14</b>
	<b>TOTAL</b>	<b>72</b>

**Teaching methods:**

Lecturing, Assignment, Group Discussion, Quiz, Group Activity. PowerPoint Projection through LCD

***Text Book:***

Bina Diwarom ke Khar –Drama- Mannu Bandari, Anuvadh Abhyas, Publisher : Dakshin bharath hindi pracharsabha, chennai – 17.

Nirmala –Novel- Premchand, 2015, Rajkamal Prakashan, 1B Nethaji Subash Marg, New Delhi.

**Providence College for Women (Autonomous), Coonoor**

**Part I – French Language**

**For all BA/B.Sc./B.Com/B.Com/ BCA courses**

**(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)**

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**Program Educational Objectives**

1. Make the student eligible to take up Masters in the French Language
2. To enable the students to pursue higher education in the target language

**Program Specific Outcomes**

1. To develop the ability to understand and communicate (read, write, speak and understand) in intermediary level of French.
2. To enable student to be employable in French domains

**Program Outcomes**

1. To familiarize the student with the basic knowledge of French language, civilization and culture
2. To demonstrate a marked ability to communicate in the target language – French

## First Semester – Paper I

### Course: French 1

Course Code:

Credits: 4

Hours: 90

### Course Objectives:

To understand, speak, read and write simple, standard speech which is very slow and is carefully articulated and can recognize familiar words and very basic phrases concerning themselves, their family and immediate concrete surroundings when people speak slowly and clearly

### Course Outcomes:

S.No	Course Outcome	Blooms Level
CO1	Comprehend basic vocabulary	K1
CO2	Understand basic syntax and grammar patterns	K2
CO3	Converse slowly in known situations	K3
CO4	Translate small basic sentences	K4

### Syllabus:

Part 1 - French 1	
Unit No.	Topics
1	Etape 0
	Etape 1 (Lecons 1 - 3)
2	Etape 2 (Lecons 1 - 3)
3	Etape 3 - Leçons 1 – 2
4	Etape 3 – Leçon 3
	Etape 4 – Leçon 1
5	Etape 4 – Leçons 2 – 3
<b>Etapes 0 to 4, Pages 11 to 62</b>	

**Text Book Prescribed: Adomania 1 – Methode de francais**

Authors: [Céline Himber](#), [Corina Brillant](#), [Sophie Erlich](#)

Publisher: HACHETTE FLE

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Reference:**

**Latitudes 1**

Author: Yves Loiseau, Régine Merieux

Publisher: French and European Publications Inc

Available at: GOYAL publishers and distributors Pvt Ltd, New Delhi (9810322459)

**Saison 1 – Methode de francais**

Author: Jean Giradoux

Publisher: Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Generation 1 – Methode de francais**

Author: Marie Noelle Cocton

Publisher : Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**SWAYAM** : [https://swayam.gov.in/nd2\\_cec19\\_lg04/preview](https://swayam.gov.in/nd2_cec19_lg04/preview)

by Prof. Nirupama Rastogi (Retd) English and Foreign Languages University, Hyderabad



## Second Semester – Paper 2

### Course: French 2

Course Code:

Credits: 4

Hours: 90

### Course Objectives:

To understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type

### Course Outcomes:

S.No	Course Outcome	Blooms Level
CO1	Comprehend day to day conversations	K1
CO2	Understand basic culture and literature of France	K2
CO3	Converse confidently in known situations	K3
CO4	Translate small paragraphs of known context	K4

### Syllabus:

Part 1 - French 2	
Unit No.	Topics
1	Etape 5 (Lecons 1 - 3)
2	Etape 6 (Lecons 1 - 3)
3	Etape 7 - Leçons 1 – 2
4	Etape 7 – Leçon 3
	Etape 8 – Leçon 1
5	Etape 8 – Leçons 2 – 3
<b>Etapes 5 to 8, Pages 63 -114</b>	

**Text Book Prescribed: Adomania 1 – Methode de francais**

Authors: [Céline Himber](#), [Corina Brillant](#), [Sophie Erlich](#)

Publisher: HACHETTE FLE

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Reference:**

**Latitudes 1**

Author: Yves Loiseau, Régine Merieux

Publisher: French and European Publications Inc

Available at: GOYAL publishers and distributors Pvt Ltd, New Delhi (9810322459)

**Saison 1 – Methode de francais**

Author: Jean Giradoux

Publisher: Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Generation 1 – Methode de francais**

Author: Marie Noelle Cocton

Publisher : Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**SWAYAM** : [https://swayam.gov.in/nd2\\_cec19\\_lg04/preview](https://swayam.gov.in/nd2_cec19_lg04/preview)

by Prof. Nirupama Rastogi (Retd) English and Foreign Languages University, Hyderabad

### Third Semester – Paper 3

#### Course: French 3

Course Code:

Credits: 4

Hours: 90

#### Course Objectives:

To interact in a simple way, ask and answer simple questions about themselves, where they live, people they know, and things they have, initiate and respond to simple statements in areas of immediate need or on very familiar topics, rather than relying purely on a very finite rehearsed, lexically-organised repertoire of situation-specific phrases

#### Course Outcomes:

S.No	Course Outcome	Blooms Level
CO1	Comprehend a repertoire of vocabulary	K1
CO2	Understand tenses and intermediary level of grammar	K2
CO3	Try to converse in unknown situation	K3
CO4	Translate unknown texts on familiar topics	K4

#### Syllabus:

Part 1 - French 3	
Unit No.	Topics
1	Etape 1 (Lecons 1 - 3)
2	Etape 2 (Lecons 1 - 3)
3	Etape 3 - Leçons 1 – 2
4	Etape 3 – Leçon 3
	Etape 4 – Leçon 1
5	Etape 4 – Leçons 2 – 3
<b>Etapes 1 to 4, Pages 9 to 62</b>	

**Text Book Prescribed: Adomania 2 – Methode de francais**

Authors: [Céline Himber](#), [Corina Brillant](#), [Sophie Erlich](#)

Publisher: HACHETTE FLE

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Reference:**

**Latitudes 2**

Author: Yves Loiseau, Régine Merieux

Publisher: French and European Publications Inc

Available at: GOYAL publishers and distributors Pvt Ltd, New Delhi (9810322459)

**Saison 2 – Methode de francais**

Author: Jean Giradoux

Publisher: Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**Generation 2 – Methode de francais**

Author: Marie Noelle Cocton

Publisher : Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

**SWAYAM** : [https://swayam.gov.in/nd2\\_cec19\\_lg04/preview](https://swayam.gov.in/nd2_cec19_lg04/preview)

by Prof. Nirupama Rastogi (Retd) English and Foreign Languages University, Hyderabad

## Fourth Semester – Paper 4

**Course: French 4**

Course Code:

Credits: 4

Hours: 90

### Course Objectives:

To communicate during easy or habitual tasks requiring a basic and direct information exchange on familiar subjects to use simple words to describe his or her surroundings and communicate immediate needs

### Course Outcomes:

S.No	Course Outcome	Blooms Level
CO1	Comprehend the grammatical structures in various genres	K1
CO2	Understand the text styles and poetical elements	K2
CO3	Develop an interest in the appreciation of literature	K3
CO4	Discuss and respond to content of a reading passage	K4

<b>Part 1 - French 4</b>	
<b>Unit No.</b>	<b>Topics</b>
1	Etape 5 (Lecons 1 - 3)
2	Etape 6 (Lecons 1 - 3)
3	Etape 7 - Leçons 1 – 2
4	Etape 7 – Leçon 3
	Etape 8 – Leçon 1
5	Etape 8 – Leçons 2 – 3
<b>Etapes 5 to 8, Pages 63 to 114</b>	

**Text Book Prescribed: Adomania 2 – Methode de francais**

Authors: [Céline Himber](#), [Corina Brillant](#), [Sophie Erlich](#)

Publisher: HACHETTE FLE

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**Reference:**

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**Saison 2 – Methode de francais**

Author: Jean Giradoux

Publisher: Didier

Available at: GOYAL Publishers and Distributors Pvt Ltd, New Delhi (9810322459)

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**SWAYAM** : [https://swayam.gov.in/nd2\\_cec19\\_lg04/preview](https://swayam.gov.in/nd2_cec19_lg04/preview)

by Prof. Nirupama Rastogi (Retd) English and Foreign Languages University, Hyderabad

**Providence College for Women (Autonomous), Coonoor**

**Part I – French Language**

**For all BA/B.Sc./B.Com/B.Com/ BCA courses**

**(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)**

**Question Paper Pattern for End Semester Examination**

**Semester – I, French - I**

Maximum Marks: 50

Section A (5 marks)

1. Choose the best answer (5 x 1 = 5 marks)

Section B (25 marks)

2. Grammar Exercises (Either or Type) (5 x 5 = 25 marks)

Section C (10 marks)

3. Translation of texts from French to English (2 out of 5) (2 x 5 = 10 marks)

Section D (10 marks)

4. Comprehension/ Redaction/Letter Writing/ Dialogue Writing/ Frame Sentences (Unseen text relevant to the syllabus) (2 out of 5) (2 x 5 = 10 marks)

**Semester – II, French - II**

Maximum Marks: 50

Section A (5 marks)

1. Choose the best answer (5 x 1 = 5 marks)

Section B (25 marks)

2. Grammar Exercises (Either or Type) (5 x 5 = 25 marks)

Section C (10 marks)

3. Translation of texts from French to English (2 out of 5) (2 x 5 = 10 marks)

Section D (10 marks)

4. Comprehension/ Redaction/Letter Writing/ Dialogue Writing/ Frame Sentences (Unseen text relevant to the syllabus) (2 out of 5) (2 x 5 = 10 marks)

### **Semester – III, French - III**

Maximum Marks: 50

Section A (5 marks)

1. Choose the best answer (5 x 1 = 5 marks)

Section B (25 marks)

2. Grammar Exercises (Either or Type) (5 x 5 = 25 marks)

Section C (10 marks)

3. Translation of texts from French to English (2 out of 5) (2 x 5 = 10 marks)

Section D (10 marks)

4. Comprehension/ Redaction/Letter Writing/ Dialogue Writing/ Frame Sentences (Unseen text relevant to the syllabus) (2 out of 5) (2 x 5 = 10 marks)

### **Semester – IV, French - IV**

Maximum Marks: 50

Section A (5 marks)

1. Choose the best answer (5 x 1 = 5 marks)

Section B (25 marks)

2. Grammar Exercises (Either or Type) (5 x 5 = 25 marks)

Section C (10 marks)

3. Translation of texts from French to English (2 out of 5) (2 x 5 = 10 marks)

Section D (10 marks)

4. Comprehension/ Redaction/Letter Writing/ Dialogue Writing/ Frame Sentences (Unseen text relevant to the syllabus) (2 out of 5) (2 x 5 = 10 marks)



Providence College for Women (Autonomous), Coonoor

Part I – French Language

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(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)

Template – End Semester Examinations  
Semester – I, French - I

Time: 3 Hours

Maximum Marks: 50

**SECTION – A (5 x 1 = 5 Marks) (Bloom’s Taxonomy K1 Level)**

S. No.	Question		Course Outcome	Knowledge Level
1	<b>Unit I</b>		CO1	K1
	a)	b)		
	c)	d)		
2	<b>Unit I</b>		CO2	K2
	a)	b)		
	c)	d)		
3	<b>Unit II</b>		CO1	K1
	a)	b)		
	c)	d)		
4	<b>Unit II</b>		CO2	K2
	a)	b)		
	c)	d)		
5	<b>Unit III</b>		CO1	K1
	a)	b)		
	c)	d)		

**SECTION – B (5 x 5= 25 Marks) (Either Or Type) (Bloom’s Taxonomy K2 Level)**

S.No	Question		Course Outcome	Knowledge Level
11	(a)	<b>Unit I</b>	CO2	K2
11	(b)	<b>Unit I</b>		
12	(a)	<b>Unit II</b>	CO2	K2
12	(b)	<b>Unit II</b>		
13	(a)	<b>Unit III</b>	CO2	K2
13	(b)	<b>Unit III</b>		
14	(a)	<b>Unit IV</b>	CO2	K2
14	(b)	<b>Unit IV</b>		
15	(a)	<b>Unit V</b>	CO2	K2
15	(b)	<b>Unit V</b>		

**SECTION – C (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
17	Unit I	CO3	K3
18	Unit II	CO3	K3
19	Unit III	CO3	K3
20	Unit IV	CO4	K4
21	Unit V	CO4	K4

**SECTION – D (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
22	Unit I	CO3	K3
23	Unit II	CO3	K3
24	Unit III	CO3	K3
25	Unit IV	CO4	K4
26	Unit V	CO4	K4

Providence College for Women (Autonomous), Coonoor

Part I – French Language

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Template – End Semester Examinations  
Semester – II, French - II

Time: 3 Hours

Maximum Marks: 50

**SECTION – A (5 x 1 = 5 Marks) (Bloom’s Taxonomy K1 Level)**

S. No.	Question		Course Outcome	Knowledge Level
1	<b>Unit I</b>		CO1	K1
	a)	b)		
	c)	d)		
2	<b>Unit I</b>		CO2	K2
	a)	b)		
	c)	d)		
3	<b>Unit II</b>		CO1	K1
	a)	b)		
	c)	d)		
4	<b>Unit II</b>		CO2	K2
	a)	b)		
	c)	d)		
5	<b>Unit III</b>		CO1	K1
	a)	b)		
	c)	d)		

**SECTION – B (5 x 5= 25 Marks) (Either Or Type) (Bloom’s Taxonomy K2 Level)**

S.No	Question		Course Outcome	Knowledge Level
11	(a)	<b>Unit I</b>	CO2	K2
	(b)	<b>Unit I</b>		
12	(a)	<b>Unit II</b>	CO2	K2
	(b)	<b>Unit II</b>		
13	(a)	<b>Unit III</b>	CO2	K2
	(b)	<b>Unit III</b>		
14	(a)	<b>Unit IV</b>	CO2	K2
	(b)	<b>Unit IV</b>		
15	(a)	<b>Unit V</b>	CO2	K2
	(b)	<b>Unit V</b>		

**SECTION – C (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
17	Unit I	CO3	K3
18	Unit II	CO3	K3
19	Unit III	CO3	K3
20	Unit IV	CO4	K4
21	Unit V	CO4	K4

**SECTION – D (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
22	Unit I	CO3	K3
23	Unit II	CO3	K3
24	Unit III	CO3	K3
25	Unit IV	CO4	K4
26	Unit V	CO4	K4

Providence College for Women (Autonomous), Coonoor

Part I – French Language

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(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)

Template – End Semester Examinations  
Semester – III, French - III

Time: 3 Hours

Maximum Marks: 50

**SECTION – A (5 x 1 = 5 Marks) (Bloom’s Taxonomy K1 Level)**

S. No.	Question		Course Outcome	Knowledge Level
1	<b>Unit I</b>		CO1	K1
	a)	b)		
	c)	d)		
2	<b>Unit I</b>		CO2	K2
	a)	b)		
	c)	d)		
3	<b>Unit II</b>		CO1	K1
	a)	b)		
	c)	d)		
4	<b>Unit II</b>		CO2	K2
	a)	b)		
	c)	d)		
5	<b>Unit III</b>		CO1	K1
	a)	b)		
	c)	d)		

**SECTION – B (5 x 5= 25 Marks) (Either Or Type) (Bloom’s Taxonomy K2 Level)**

S.No	Question		Course Outcome	Knowledge Level
11	(a)	<b>Unit I</b>	CO2	K2
11	(b)	<b>Unit I</b>		
12	(a)	<b>Unit II</b>	CO2	K2
12	(b)	<b>Unit II</b>		
13	(a)	<b>Unit III</b>	CO2	K2
13	(b)	<b>Unit III</b>		
14	(a)	<b>Unit IV</b>	CO2	K2
14	(b)	<b>Unit IV</b>		
15	(a)	<b>Unit V</b>	CO2	K2
15	(b)	<b>Unit V</b>		

**SECTION – C (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
17	Unit I	CO3	K3
18	Unit II	CO3	K3
19	Unit III	CO3	K3
20	Unit IV	CO4	K4
21	Unit V	CO4	K4

**SECTION – D (2 x 5 = 10 Marks) (2 out of 5) (Bloom’s Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
22	Unit I	CO3	K3
23	Unit II	CO3	K3
24	Unit III	CO3	K3
25	Unit IV	CO4	K4
26	Unit V	CO4	K4

Providence College for Women (Autonomous), Coonoor

Part I – French Language

For all BA/B.Sc./B.Com/B.Com/ BCA courses

(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)

Template – End Semester Examinations  
Semester – IV, French - IV

Time: 3 Hours

Maximum Marks: 50

**SECTION – A (5 x 1 = 5 Marks) (Bloom’s Taxonomy K1 Level)**

S. No.	Question		Course Outcome	Knowledge Level
1	<b>Unit I</b>		CO1	K1
	a)	b)		
	c)	d)		
2	<b>Unit I</b>		CO2	K2
	a)	b)		
	c)	d)		
3	<b>Unit II</b>		CO1	K1
	a)	b)		
	c)	d)		
4	<b>Unit II</b>		CO2	K2
	a)	b)		
	c)	d)		
5	<b>Unit III</b>		CO1	K1
	a)	b)		
	c)	d)		

**SECTION – B (5 x 5= 25 Marks) (Either Or Type) (Bloom’s Taxonomy K2 Level)**

S.No	Question		Course Outcome	Knowledge Level
11	(a)	<b>Unit I</b>	CO2	K2
11	(b)	<b>Unit I</b>		
12	(a)	<b>Unit II</b>	CO2	K2
12	(b)	<b>Unit II</b>		
13	(a)	<b>Unit III</b>	CO2	K2
13	(b)	<b>Unit III</b>		
14	(a)	<b>Unit IV</b>	CO2	K2
14	(b)	<b>Unit IV</b>		
15	(a)	<b>Unit V</b>	CO2	K2
15	(b)	<b>Unit V</b>		

**SECTION – C (2 x 5 = 10 Marks) (2 out of 5) (Bloom's Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
17	Unit I	CO3	K3
18	Unit II	CO3	K3
19	Unit III	CO3	K3
20	Unit IV	CO4	K4
21	Unit V	CO4	K4

**SECTION – D (2 x 5 = 10 Marks) (2 out of 5) (Bloom's Taxonomy K3/ K4 Level)**

<b>S.No</b>	<b>Question</b>	<b>Course Outcome</b>	<b>Knowledge Level</b>
22	Unit I	CO3	K3
23	Unit II	CO3	K3
24	Unit III	CO3	K3
25	Unit IV	CO4	K4
26	Unit V	CO4	K4



**Providence College for Women (Autonomous), Coonoor**

**Part I – French Language**

**For all BA/B.Sc./B.Com/B.Com/ BCA courses**

**(For the students admitted during 2021-2022 onwards - towards Outcome Based Education and Industry 4.0)**

**Template – Continuous Internal Assessment**

**Semester – I, French – I**

<b>S.No</b>	<b>Name of the Assessment</b>	<b>Total Marks</b>	<b>To be converted to</b>
1	Internal Tests (Best out of 2)	50	15
2	Model Examination	50	15
3	Reading Test	5	10
4	Listening Test	5	5
5	Speaking Test	5	5
	<b>Total ( Maximum Marks)</b>		<b>50</b>

**Semester – II, French – II**

<b>S.No</b>	<b>Name of the Assessment</b>	<b>Total Marks</b>	<b>To be converted to</b>
1	Internal Tests (Best out of 2)	50	15
2	Model Examination	50	15
3	Reading Test	5	10
4	Listening Test	5	5
5	Speaking Test	5	5
	<b>Total ( Maximum Marks)</b>		<b>50</b>

**Semester – III, French – III**

<b>S.No</b>	<b>Name of the Assessment</b>	<b>Total Marks</b>	<b>To be converted to</b>
1	Internal Tests (Best out of 2)	50	15
2	Model Examination	50	15
3	Reading Test	5	10
4	Listening Test	5	5
5	Speaking Test	5	5
	<b>Total ( Maximum Marks)</b>		<b>50</b>

**Semester – IV, French – IV**

<b>S.No</b>	<b>Name of the Assessment</b>	<b>Total Marks</b>	<b>To be converted to</b>
1	Internal Tests (Best out of 2)	50	15
2	Model Examination	50	15
3	Reading Test	5	10
4	Listening Test	5	5
5	Speaking Test	5	5
	<b>Total ( Maximum Marks)</b>		<b>50</b>

**PROVIDENCE COLLEGE FOR WOMEN  
AUTONOMOUS  
SPRING FIELD, COONOR, THE NILGIRIS**

**B. A. English Literature**



**Syllabus**

**(With effect from 2022- 2023 onwards)**

**Program Code:**

**PROVIDENCE COLLEGE FOR WOMEN,  
SPRING FIELD, COONOOR  
DEPARTMENT OF ENGLISH**



**MISSION**

To see a World in a Grain of Sand

And a Heaven in a Wild Flower

Hold Infinity in the palm of your hand

And Eternity in an hour

The mission of the department, are William Blake's lines which contains a load of meaning. To teach the students to view even the tiniest of things with importance as they contain aspects of the whole. To learn to view the world through literature.

**VISION**

Learning to unlearn on the lap of literature.

To be open to learn, understand and internalize concepts for a better life.

PG & RESEARCH DEPARTMENT OF ENGLISH  
PROGRAMME OUTCOME & PROGRAMME SPECIFIC OUTCOME  
2022 – 2023

**Programme Outcome BA English Literature**

After completion of the programme, the student will be able to

- PO1: Build a strong foundation on the different genres of literature and its characteristics.
- PO2: Nurture and inculcate reading and writing skills
- PO3: Develop deeper insights into literary texts.
- PO4: Master the periods, features, movements and writings of the literary tradition.
- PO5: Relate life and its experiences with the acquired knowledge thereby improving decision making abilities.
- PO6: Understand the impact of literature on society.
- PO7: Learn the basic critical theories to analyse texts.
- PO8: Improve their grammatical construction of sentences and pronunciation.
- PO9: Write simple poems, short stories and essays.
- PO10: Prove their skills in language and literature.

**Programme Specific Outcome**

The students at the time of graduation will be able to:

- PO1: Practice the gained knowledge in better communication.
- PO2: Select and explore new cultures and history.
- PO3: Analyse critically literary works and its techniques.
- PO4: Prepare and participate in prospects that would enable to establish a career.
- PO5: Demonstrate skills related to the subject and applying the same in the development of the community.

**Providence College for Women(Autonomous)**  
**B.A. English Literature**  
*(For the students admitted during the academic year 2022 – 23 onwards)*

Part	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
I	TAMIL I	4	6		50	50	100
II	ENGLISH I	4	6		50	50	100
III	CORE I – PROSE I	4	5		50	50	100
III	CORE II – FICTION I	4	5		50	50	100
III	ALLIED I – <b>Literary Forms</b>	4	6		50	50	100
IV	Environmental Studies*	2	2		--	50	50
	PROFESSIONAL ENGLISH COURSE – Add on course.						
<b>Total</b>		<b>22</b>	<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>
<b>SECOND SEMESTER</b>							
I	TAMIL II	4	6		50	50	100
II	ENGLISH II	4	6		50	50	100
III	CORE III – POETRY I	4	5		50	50	100
III	CORE IV – DRAMA I	4	5		50	50	100
III	ALLIED II – <b>Social History of England</b>	4	6		50	50	100
IV	Value – Education – Human Rights*	2	2		--	50	50
	PROFESSIONAL ENGLISH COURSE – Add on course.						
<b>Total</b>		<b>22</b>	<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>
<b>THIRD SEMESTER</b>							
I	TAMIL III	4	6		50	50	100
II	ENGLISH III	4	6		50	50	100
III	CORE V – PROSE II	4	4		50	50	100
III	CORE VI – FICTION II	4	4		50	50	100
III	ALLIED III – <b>History of English Literature</b>	4	5		50	50	100
IV	JOB ORIENTED COURSE – PAPER 1- Language skill I	3	3		30	45	75
IV	Tamil**/Advanced Tamil* (OR) Non -Major Elective – I (Yoga for Human Excellence) */ Women's Rights*	2	2		--	50	50
<b>Total</b>		<b>25</b>	<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>

FOURTH SEMESTER							
I	TAMIL IV	4	6		50	50	100
II	ENGLISH IV	4	6		50	50	100
III	CORE VII – POETRY II	4	4		50	50	100
III	CORE VIII – DRAMA II	4	4		50	50	100
III	ALLIED IV –Literary Criticism	4	5		50	50	100
IV	JOB ORIENTED COURSE – PAPER II- Language skill II	3	3		30	45	75
IV	Tamil**/Advanced Tamil* (OR) Non -Major Elective –II- General Awareness*	2	2		--	50	50
<b>Total</b>		<b>25</b>	<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>
FIFTH SEMESTER							
III	CORE IX – <i>Shakespeare</i>	4	6		50	50	100
III	CORE X – INDIAN WRITING IN ENGLISH	4	6		50	50	100
III	CORE XI – AMERICAN LITERATURE	4	6		50	50	100
III	CORE XII – COMMONWEALTH LITERATURE	4	5		50	50	100
III	ELECTIVE –I	3	4		50	50	100
IV	VALUE ADDED COURSE – PAPER I- Study of English Phonetics- I	3	3		30	45	75
<b>Total</b>		<b>22</b>	<b>30</b>		<b>280</b>	<b>295</b>	<b>575</b>
SIXTH SEMESTER							
III	CORE XIII – SHAKESPEARE	4	6		50	50	100
III	CORE XIV – GENDER STUDIES	4	6		50	50	100
III	CORE XV– INDIAN LITERATURE IN ENGLISH TRANSLATION	4	5		50	50	100
III	ELECTIVE –II	3	5		30	45	75
III	ELECTIVE –III	3	5		30	45	75
IV	VALUE ADDED COURSE – PAPER II- Study of English Phonetics- II	3	3		30	45	75
V	Extension Activities**	2	-		50	--	50
<b>Total</b>		<b>23</b>	<b>30</b>		<b>290</b>	<b>285</b>	<b>575</b>
<b>Grand Total</b>		<b>139</b>	<b>180</b>		<b>1630</b>	<b>1870</b>	<b>3500</b>

\* No Continuous Internal Assessment (CIA). Only University Examinations. \*\* No University Examinations. Only Continuous Internal Assessment (CIA).

PROFESSIONAL ENGLISH COURSE is an Add on course for all UG students in the first and second semester.

List of Elective Papers		
ELECTIVE	A	ENGLISH FOR COMPETITIVE EXAMS
	B	STUDY OF INDIAN THEATER
	C	PUBLIC SPEAKING
ELECTIVE	A	COMMUNICATIVE ENGLISH
	B	FUNDAMENTALS OF COMPARATIVE LITERATURE
	C	<b>MASS COMMUNICATION AND JOURNALISM</b>
ELECTIVE	A	INTRODUCTION TO LINGUISTICS
	B	STUDYING NOVELS
	C	TRANSLATION TASKS



**First  
Semester**



<b>Course code</b>		<b>PROSE I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	
<b>Core</b>	Core I		<b>3</b>		<b>-</b>	<b>4</b>	
<b>Pre-requisite</b>	<b>Basic knowledge of English prose</b>	<b>Syllabus Version</b>	2022-2023				
<b>Course Objectives:</b>							
The main objectives of this course are to: Gain knowledge on the English Prose of different ages Apply the varied styles in writing and improve language skills							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Comprehend prose passages	<b>K1, K2</b>					
2	Enhance reading skill	<b>K2&amp;K3</b>					
3	Analyze the structure and style of Prose pieces	<b>K4</b>					
4	Create simple paragraph	<b>K6</b>					
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							
<b>Unit:1</b>		<b>15hours</b>					
1. The Suitor and Papa 2. The Sniper							
<b>Unit:2</b>		<b>15hours</b>					
1. A Handful of Dates 2. Two Gentlemen of Verona							
<b>Unit:3</b>		<b>15hours</b>					
1. Know When to say "It's None of Your Business" 2. How to Escape from Intellectual Rubbish							
<b>Unit:4</b>		<b>15hours</b>					
1. A Little Bit of What you Fancy 2. The Second Crucifixion							
<b>Unit:5</b>		<b>15 hours</b>					
1. Humanities vs Sciences 2. The Beauty industry							
		<b>Total Lecture hours</b>				<b>75hours</b>	

<b>Text Book(s)</b>	
1	<b>CRUISE</b> A Journey Through Prose Cambridge University Press
<b>Reference Books</b>	
1	The Literary Heritage: A New Anthology of Prose and Short Story by Hari Mohan Prasad, Ivan Khristo Masih, Chakradhar Prasad Singh, Motilal Banarsidass PublishingHouse
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://users.bergen.org/raybat/prose.html">http://users.bergen.org/raybat/prose.html</a> <a href="https://www.mlb.in/products/the-literary-heritage-a-new-anthology-of-prose-and-short-story-hari-mohan-prasad-ivan-khristo-masih-chakradhar-prasad-singh-9788120829213-8120829212">https://www.mlb.in/products/the-literary-heritage-a-new-anthology-of-prose-and-short-story-hari-mohan-prasad-ivan-khristo-masih-chakradhar-prasad-singh-9788120829213-8120829212</a> Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	L	M	S	M	S	M	M	L
<b>CO 2</b>	L	S	L	S	S	M	L	M
<b>CO 3</b>	L	M	S	L	M	L	M	L
<b>CO 4</b>	M	M	M	M	S	M	M	M

Course code		<b>FICTION I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		Core II	<b>3</b>		-	<b>4</b>
<b>Pre-requisite</b>		Basic knowledge of English Fiction.	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
The paper aims at introducing the students comprehend to the long narrative. To make the students analyse various aspects of fiction like plot, character, techniques etc.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the plot, setting and structure				<b>K2</b>	
2	Identify the techniques used in Fictional writing				<b>K3</b>	
3	Analyse various themes in the fiction				<b>K4</b>	
4	Evaluate the role of major and minor characters				<b>K5</b>	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15hours</b>	
Jane Eyre - Charlotte Bronte.						
<b>Unit:2</b>					<b>15hours</b>	
<b>Robinson Crusoe – Daniel Defoe</b>						
<b>Unit:3</b>					<b>15hours</b>	
Oliver Twist - Charles Dickens						
<b>Unit:4</b>					<b>15hours</b>	
Far From the Madding Crowd - Thomas Hardy						
<b>Unit:5</b>					<b>15 hours</b>	
Lord of the Flies - William Golding						
					<b>Total Lecture hours</b>	
					<b>75hours</b>	

<b>Text Book(s)</b>	
1	Jane Eyre - Charlotte Bronte, Penguin Classics
2	<b>Robinson Crusoe – Daniel Defoe</b>
3	Oliver Twist - Charles Dickens, Fingerprint Classics
4	Far From the Madding Crowd - Thomas Hardy, Penguin Classics
5	Lord of the Flies - William Golding, Faber Classics
<b>Reference Books</b>	
1	Critical Approaches to Literature, David Daiches, Kessinger Publishing.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://books.google.co.in/books/about/Critical_Approaches_to_Literature.html?id=UV2XQAAACAAJ&amp;redir_esc=y">https://books.google.co.in/books/about/Critical_Approaches_to_Literature.html?id=UV2XQAAACAAJ&amp;redir_esc=y</a>
2	<a href="https://www.mooc-list.com/course/how-read-novel-futurelearn">https://www.mooc-list.com/course/how-read-novel-futurelearn</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

CO S	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	S	M	L	S	M	M	L	M
CO 3	S	M	S	M	M	M	S	M
CO 3	L	M	S	L	S	M	L	M
CO 4	M	M	S	L	M	L	L	M

Course code	LITERARY FORMS			L	T	P	C
<b>Core</b>	<b>ALLIED III</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on forms of writing in Literature</b>			<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>							
To introduce the various literary genres and devices of English Literature. To make the students understand the salient features of literary forms.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand different literary forms and their characteristics			<b>K2</b>			
2	Differentiate various literary devices			<b>K4</b>			
3	Identify literary devices in a work, compare the genres and their features			<b>K3</b>			
4	Attempt a simple creative writing			<b>K6</b>			
<b>K1-Remember;K2-Understand;K3 -Apply;K4-Analyze;K5-Evaluate;K6–Create</b>							
<b>Unit:1</b>	<b>POETRY</b>			<b>15hours</b>			
Chapter I-Subjective and Objective Poetry Chapter II- Poetic Types Chapter III-Stanza Forms							
<b>Unit:2</b>	<b>MOVEMENTS</b>			<b>15hours</b>			
<b>Schools and Movements</b>							
<b>Unit:3</b>	<b>DRAMA</b>			<b>15hours</b>			
Chapter I: Dramatic Art Chapter II: Dramatic Types(111-133) Chapter III: Dramatic Devices (134-139)							
<b>Unit:4</b>	<b>PROSE</b>			<b>15hours</b>			
Chapter I: Essay(183-92) Chapter II: The Novel (193-224)							

Chapter III: Short story(225-229)

<b>Unit:5</b>	<b>PROSE</b>	<b>15hours</b>
Chapter IV: Biography and Auto Biography(230-236)		
<b>Total Lecture hours</b>		<b>75hours</b>
<b>Text Book(s)</b>		
1	A Background to the study of English Literature-by Prasad(Macmillan)	
<b>Reference Books</b>		
1	A Comparison to Literary Forms, Padmaja Ashok, Orient BlackSwan	
2	Literary Forms, Ramachandra Nair, Emerald Publishers	
3	A Glossary of Literary Terms, M.H. Abrams	
<b>Related Online Contents[MOOC,SWAYAM, NPTEL, Websitesetc.]</b>		
1	<a href="https://www.mooc-list.com/course/introduction-literary-studies-saylororg">https://www.mooc-list.com/course/introduction-literary-studies-saylororg</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	S	M	L	M	L	M
CO3	M	M	S	L	L	M	S	L
CO3	M	S	M	L	S	M	L	M
CO4	M	L	S	L	S	M	M	L

\*S-Strong;M-Medium;L-Low







A purple scroll graphic with a white outline, featuring a rolled-up top edge and a rolled-up bottom edge. The text "Second Semester" is centered in white.

# **Second Semester**

Course code		POETRY – I	L	T	P	C
Core		Core III	4	-	-	4
Pre-requisite		Basic Knowledge of Poetry.	Syllabus Version			2022-2023
<b>Course Objectives:</b>						
To make the students to comprehend poetry of different ages To make the students familiar with different types of poetry						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students will be able to:						
1	Gain knowledge of poetry of different ages					K1
2	Understand the literary terms and devices					K2
3	Analyse a poem					K4
4	Learn new dimensions in connecting emotions and languages and create simple Poems					K6
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>						<b>15hours</b>
1. Good Morrow - John Donne 2. One Day I wrote her Name – Edmund Spenser						
<b>Unit:2</b>						<b>15hours</b>
1. Sonnet 18 – William Shakespeare 2. The Temptations – John Milton						
<b>Unit:3</b>						<b>15hours</b>
1. The Tyger – William Blake 2. To Sleep – William Wordsworth						

<b>Unit:4</b>		<b>15Hours</b>
<ol style="list-style-type: none"> <li>1. Kubla Khan - Samuel Taylor Coleridge</li> <li>2. Ode to a Skylark - Percy Bysshe Shelley</li> </ol>		
<b>Unit:5</b>		<b>15Hours</b>
<ol style="list-style-type: none"> <li>1. Ode to Autumn – John Keats</li> <li>2. The Lotus Eaters - Lord Alfred Tennyson</li> </ol>		
	<b>Total Lecture hours</b>	<b>75hours</b>
<b>Text Book(s)</b>		
1	ELIXIR An Anthology of Poems Emerald Publication	
<b>Reference Books</b>		
1	M.H.Abrams (Ed), The Norton Anthology of English Literature	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.poetryfoundation.org/search?query=Sonnet+18+-+William+Shakespeare+">https://www.poetryfoundation.org/search?query=Sonnet+18+-+William+Shakespeare+</a>	
2	<a href="https://kupdf.net/download/norton-anthology-of-english-literature_596d23c5dc0d60035ba88e76_pdf">https://kupdf.net/download/norton-anthology-of-english-literature_596d23c5dc0d60035ba88e76_pdf</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO1</b>	S	M	M	L	M	L	L	M
<b>CO2</b>	M	M	S	M	L	M	S	L
<b>CO3</b>	M	L	M	M	S	S	L	S
<b>CO4</b>	L	M	L	M	S	L	M	M

\*S-Strong; M-Medium; L-Low

Course code		<b>DRAMA I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core IV</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge of Drama.</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To introduce the genre drama and its techniques To make the students to identify plot, characterization and structure of the play						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand and enjoy reading plays					<b>K2</b>
2	Identify the elements of Drama					<b>K3</b>
3	Analyse the plays thematically					<b>K4</b>
4	Evaluate the characters of the plays					<b>K5</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>						<b>15hours</b>
Dr. Faustus - Christopher Marlowe						
<b>Unit:2</b>						<b>15hours</b>
She Stoops to Conquer – Oliver Goldsmith						
<b>Unit:3</b>						<b>15hours</b>
The Alchemist – Ben Jonson						
<b>Unit:4</b>						<b>15hours</b>
The Rivals – R.B.Sheridan						
<b>Unit:5</b>						<b>15 hours</b>
Strife - John Galsworthy						
					<b>Total Lecture hours</b>	<b>75hours</b>

<b>Text Book(s)</b>	
1	Dr. Faustus - Christopher Marlowe, Dover Thrift edition
2	She Stoops to Conquer- Oliver Goldsmith, Peacock Books
3	The Alchemist – Ben Jonson, Peacock Classics
4	The Rivals – R.B.Sheridan. Bloomsbury
5	Strife - John Galsworthy, Macmillan
<b>Reference Books</b>	
1	Critical Approaches to Literature, David Daiches, Kessinger Publishing
2	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.mooc-list.com/tags/theatre">https://www.mooc-list.com/tags/theatre</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

Co s	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	S	L	M	L	M	M	M	M
CO 2	M	L	S	L	M	M	M	L
CO 3	M	M	S	M	S	L	M	L
CO 4	M	L	S	M	M	M	L	M

<b>Course code</b>		<b>SOCIAL HISTORY OF ENGLAND</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>	Allied I		<b>4</b>		<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on History of England.</b>	<b>Syllabus Version</b>				2022-2023
<b>Course Objectives:</b>						
<p>The paper's objective is</p> <p>To expose the students to the history, ways and manners, customs and habits of the English society.</p> <p>To show how the literary works correspond to the changes in the society.</p>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the impact of society on Literature					<b>K2</b>
2	Interlink the history of England with British English Literature					<b>K3</b>
3	Analyse the socio-cultural aspects of the society on Literature					<b>K4</b>
4	Evaluate the literary work by considering its historical aspects					<b>K5</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>						<b>15hours</b>
1. The Renaissance 2. The Reformation.						
<b>Unit:2</b>						<b>15hours</b>
1.The Spanish Armada 2.Colonization 3.Civil War						
<b>Unit:3</b>						<b>15hours</b>
1.Restoration in England 2. <b>Age of Queen Anne</b> 3. American war of Independence						
<b>Unit:4</b>						<b>15hours</b>
1 <b>Puritanism</b> 2..The Agrarian Revolution 3..The Industrial Revolution						
<b>Unit:5</b>						<b>15hours</b>

1 The Reform Bills	
2 The Development of Education in Victorian period	
3 World Wars	
	<b>Total Lecture hours</b>
	<b>75hours</b>
<b>Text Book(s)</b>	
1	Social History of England: by A. G. Xavier
<b>Reference Books</b>	
1	Social History of England, Dr. A. Shanmugakani, Manimekala Publishing House
2	Social History of England, Padmaja Ashok, Orient Black Swan
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://onlinecourses.nptel.ac.in/noc20_hs52/preview">https://onlinecourses.nptel.ac.in/noc20_hs52/preview</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	M	M	M	M	L	L	S
<b>CO 3</b>	S	M	M	S	M	M	M	S
<b>CO 3</b>	M	L	M	M	L	M	M	S
<b>CO 4</b>	M	L	S	M	M	M	L	S

\*S-Strong; M-Medium; L-Low







A large purple scroll graphic with a white outline, featuring a rolled-up top edge and a rolled-up bottom edge. The text "Third Semester" is centered in white.

# **Third Semester**

Course code		<b>PROSE II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		Core- V	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge on English prose</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To expose the students to the development of prose style in English To assist in understanding the techniques applied in prose writing						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Gain knowledge on Prose writing				<b>K1</b>	
2	Identify the literary devices used in writing prose				<b>K3</b>	
3	Analyse the variety of prose pieces				<b>K4</b>	
4	Create a simple and short prose passage				<b>K6</b>	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15hours</b>	
1. Of Studies 2. Of Truth 3. Of Friendship						
<b>Unit:2</b>					<b>15hours</b>	
4. The Spectator Club 5. Sir Roger at Church 6. Sir Roger at Theatre						
<b>Unit:3</b>					<b>15hours</b>	
7. Dream Children : A Reverie 8. Dissertation Upon Roast Pig 9. The Praise of the Chimney Sweeper						

<b>Unit:4</b>		<b>15Hours</b>
10. On Good resolutions 11. On Doing Nothing 12. On Saying "Please"		
<b>Unit:5</b>		<b>15 hours</b>
13. Selected Snobberies 14. Shooting an Elephant 15. Bookshop memories.		
<b>Total Lecture hours</b>		<b>75hours</b>
<b>Text Book(s)</b>		
1	Pleasures of English Prose by Macmillan	
2	A Collection of Essays-George Orwell	
<b>Reference Books</b>		
1	The Norton Anthology of English Literature	
2		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.britannica.com/art/English-literature/Prose">https://www.britannica.com/art/English-literature/Prose</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	S	M	L	L	M	M	L
<b>CO 2</b>	M	M	S	L	M	M	M	L
<b>CO 3</b>	M	L	S	M	L	L	M	M
<b>CO 4</b>	S	M	S	M	S	M	M	L

\*S-Strong; M-Medium; L-Low

Course code	FICTION II			T	P	C
Core	CORE VI			4	-	4
Pre-requisite	Basic knowledge on English Fiction			Syllabus Version	2022-2023	
<b>Course Objectives:</b>						
To provide a deep insight into the world of Fiction in English Literature						
To make the students analyse the fiction						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the socio-cultural aspect of the society with the help of fiction				K2	
2	Identify the literary elements in fiction				K3	
3	Analyse the plot, character and the techniques in the fiction				K4	
4	Evaluate the work of fiction contemporary Novelists				K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15hours</b>	
The Vicar of Wakefield - Oliver Goldsmith						
<b>Unit:2</b>					<b>15hours</b>	
Silas Marner (Macmillan) - George Eliot						
<b>Unit:3</b>					<b>15hours</b>	
Treasure Island – R.L.Stevenson						
<b>Unit:4</b>					<b>15hours</b>	
<b>Heart of Darkness</b> – Joseph Conrad						
<b>Unit:5</b>					<b>15 hours</b>	
Animal Farm – George Orwell						
<b>Total Lecture hours</b>				<b>75hours</b>		

<b>Text Book(s)</b>	
1	The Vicar of Wakefield - Oliver Goldsmith, Peacock Books
2	Silas Marner - George Eliot ,Macmillan
3	Treasure Island – R.L .Stevenson, Peacock Books
4	<b>Heart of Darkness</b> – Joseph Conrad, Peacock Books
5	Animal Farm – George Orwell, Penguin Books
<b>Reference Books</b>	
1	Critical Approaches to Literature, David Daiches
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.mooc-list.com/tags/literary-theory?cf_chl_jschl_tk=1c3afbb9009e9efa7da5681e4c7b42cf8f38e0f6-1602831513-0-AWafyyRVYNEYvBKe7QtAFE4TIDExudd8UahQ-f0gL93iEy16WuJn2FpH4KbD6Poks9Sr6mSswUriFLikpESuczvEuxWpFk7aGOaWNbIKKYSHsDCAGlW4-0iVLnYjIVdJIZfrka2OPIB7uH1GED4BRgkJEnRYIdHgXrE7MiCT6ZV0tH0oDJRLAFhQYDr-k9bNBN62kJ9oBTI2H_Yy37ikxMcVLnQAhID8R48Qg3xJjdKFXxARqG5GuFI_PGL9sHv71Cn18fdCmMfBXmckZWv5pt1SnEOKD2ODHmEq5I_Fnha2J">https://www.mooc-list.com/tags/literary-theory?cf_chl_jschl_tk=1c3afbb9009e9efa7da5681e4c7b42cf8f38e0f6-1602831513-0-AWafyyRVYNEYvBKe7QtAFE4TIDExudd8UahQ-f0gL93iEy16WuJn2FpH4KbD6Poks9Sr6mSswUriFLikpESuczvEuxWpFk7aGOaWNbIKKYSHsDCAGlW4-0iVLnYjIVdJIZfrka2OPIB7uH1GED4BRgkJEnRYIdHgXrE7MiCT6ZV0tH0oDJRLAFhQYDr-k9bNBN62kJ9oBTI2H_Yy37ikxMcVLnQAhID8R48Qg3xJjdKFXxARqG5GuFI_PGL9sHv71Cn18fdCmMfBXmckZWv5pt1SnEOKD2ODHmEq5I_Fnha2J</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	L	M	S	L	M	M	S
<b>CO 3</b>	M	M	S	M	S	L	M	L
<b>CO 3</b>	M	L	S	L	M	S	L	M
<b>CO 4</b>	M	M	L	L	S	M	L	S

\*S-Strong; M-Medium; L-Low

Course code	<b>HISTORY OF ENGLISH LITERATURE</b>		L	T	P	C
<b>Core</b>	<b>Allied-II</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge on English Literature and History of England.</b>		<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To enrich the students with the wide knowledge of the historical and biographical details of writers of various ages. To make the students understand the development of British Literature						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Gain knowledge of the History of Literature and great authors of English.			<b>K2</b>		
2	Interconnect the history, biography of the author and the works			<b>K3</b>		
3	Analyse the growth of literary genres of specific periods			<b>K4</b>		
4	Evaluate the role of literary movements and their impact on the literary works			<b>K5</b>		
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15hours</b>	
1. The Age of Chaucer 2. The Age of Shakespeare – Verse, Drama and Prose.						
<b>Unit:2</b>					<b>15hours</b>	
3. The Age of Milton –Milton 4. The Age of Dryden- Verse, Drama and Prose						
<b>Unit:3</b>					<b>15hours</b>	
5. The Age of Pope- Verse, Drama and Prose 6. The Age of Johnson-General Prose and the Novel						
<b>Unit:4</b>					<b>15hours</b>	
7. The Age of Wordsworth-The older Poets, the Younger Poets. 8. The Age of Tennyson-Verse, General Prose and The Novel.						
<b>Unit:5</b>					<b>15 hours</b>	
9. The Age of Hardy 10. The Present Age.						
				<b>Total Lecture hours</b>		<b>75 hours</b>

<b>Text Book(s)</b>	
1	An Outline History of English Literature. by William Henry Hudson. (B.I Publications Pvt Ltd
<b>Reference Books</b>	
1	History of English Literature, Harrows Publications, Chennai.
2	History of English Literature, Emerald Publishers, Chennai.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108">https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108</a>
2	<a href="https://nptel.ac.in/courses/109/106/109106124/">https://nptel.ac.in/courses/109/106/109106124/</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	M	L	M	M	L	L	M
<b>CO 2</b>	L	M	M	M	M	L	L	S
<b>CO 3</b>	M	M	S	S	M	L	L	M
<b>CO 4</b>	M	L	M	L	S	M	L	M

\*S-Strong; M-Medium; L-Low





A purple scroll graphic with a white outline, featuring a rolled-up top edge and a rolled-up bottom edge. The text "Fourth Semester" is centered in white.

# **Fourth Semester**

Course code		POETRY-II	L	T	P	C
Core		Core –VII	4	-	-	4
Pre-requisite		Knowledge of Basic English Poetry	Syllabus Version		2022-2023	
<b>Course Objectives:</b>						
To Introduce the students to Great Poems of English Literature. To help the students critically analyse the poetry.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Gain intense knowledge of poetry					<b>K1</b>
2	Understand the literary importance of each poetry					<b>K2</b>
3	Critically analyse poetry					<b>K4</b>
4	Create simple poem by using literary devices					<b>K6</b>
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit :1 &amp; 2</b>						<b>30 hours</b>
1. Paradise Lost Book II						
<b>Unit:3</b>						<b>15Hours</b>
1. Dover Beach – Matthew Arnold 2. My Last Duchess – Robert Browning						
<b>Unit:4</b>						<b>15hours</b>
1.A Prayer for my Daughter -W.B. Yeats 2. The Windhover – G.M .Hopkins						

<b>Unit:5</b>		<b>15hours</b>
1. The Unknown Citizen -W.H.Auden 2. Church Going – Philip Larkin		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	<b>ELIXIR - An Anthology of Poems</b> Emerald Publication	
2	<b>Paradise Lost Book II</b>	
<b>Reference Books</b>		
1	The Norton Anthology of English Literature, W.W. Norton	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.coursera.org/courses?query=poetry">https://www.coursera.org/courses?query=poetry</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO 8
<b>CO1</b>	S	L	M	L	M	M	M	L
<b>CO2</b>	M	L	S	M	L	M	L	M
<b>CO3</b>	M	M	S	M	L	M	L	L
<b>CO4</b>	L	L	M	M	L	S	M	L

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>DRAMA II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core VIII</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Knowledge of Popular English Drama</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To explore the elements of drama contents, performance, styles and theatrical conventions. To have a detailed analyse of play						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To carry in depth knowledge of play					K2
2	Analyse the literary devices used in plays					K4
3	Critically evaluate the plays					K5
4	Able to enact the play					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit :1</b>					<b>15hours</b>	
Pygmalion - G. B. Shaw						
<b>Unit:2</b>					<b>15hours</b>	
A Doll's House - Henrik Ibsen						
<b>Unit:3</b>					<b>15hours</b>	
Lady Windermere's Fan - Oscar Wilde						
<b>Unit:4</b>					<b>15hours</b>	
Riders to the Sea – J.M.Synge						
<b>Unit:5</b>					<b>15 hours</b>	
Justice - John Galsworthy						
	<b>Total Lecture hours</b>				<b>75hours</b>	

<b>Text Book(s)</b>	
1	Pygmalion - G. B. Shaw, Finger prints
2	A Doll's House – Henrik Ibsen, Oxford
3	Lady Windermere's Fan - Oscar Wilde, Notion Reads
4	Riders to the Sea – J.M.Synge, Oxford
5	Justice - John Galsworthy
<b>Reference Books</b>	
1	The Norton Anthology of English Literature, W.W. Norton
2	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.mooc-list.com/course/theatre-and-globalization-coursera">https://www.mooc-list.com/course/theatre-and-globalization-coursera</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

### Mapping with Programme Outcomes

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	S	S	M	M	M	M	L	L
CO	M	M	S	M	M	L	M	M
CO3	M	M	S	L	S	L	M	L
CO4	M	L	M	L	M	L	S	S

\*S-Strong; M-Medium; L-Low

Course code	LITERARY CRITICISM		L	T	P	C
Core	Core VIII		4	-	-	4
Pre-requisite	Basic Knowledge on Literary Criticism		Syllabus Version		2022-2023	
<b>Course Objectives:</b>						
To Trace the evolution of English literary criticism from past to present.						
To acquire knowledge on criticism and apply it in to analyse a text.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Carry Knowledge of leading Critics and their method of criticism				K1	
2	Understand the different schools of criticism and their theories				K2	
3	Interconnect the society, literature and literary criticism to analyse a text				K4	
4	Evaluate a literary text by applying the ideas of the critics				K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15hours</b>	
<b>1. Plato</b> 2. Aristotle 3. Sir Philip Sydney						
<b>Unit:2</b>					<b>15hours</b>	
1. John Dryden 2. Dr. Johnson 3. <b>Alexander Pope</b>						
<b>Unit:3</b>					<b>15hours</b>	
1. William Wordsworth 2. S.T. Coleridge						
<b>Unit:4</b>					<b>15hours</b>	
1. Mathew Arnold 2. Walter Pater						
<b>Unit:5</b>					<b>15 hours</b>	
1. T.S. Eliot 2. I.A. Richards						
				<b>Total Lecture hours</b>		<b>75hours</b>
<b>Text Book(s)</b>						
1	Introduction to English Criticism by Prasad (Macmillan)					

<b>Reference Books</b>	
1	Literary Criticism From Plato to the Present, M.R. Habib, Wiley Blackwell
2	English Literary Criticism and Theory, M.S. Nagarajan, Orient Blackswan
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.classcentral.com/course/swayam-literary-theory-and-literary-criticism-7982">https://www.classcentral.com/course/swayam-literary-theory-and-literary-criticism-7982</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

### Mapping with Programme Outcomes

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	S	L	M	L	L	L	M	M
CO2	M	L	S	S	M	L	L	M
CO3	M	S	L	S	L	M	M	S
CO4	M	L	L	S	M	L	L	M

\*S-Strong; M-Medium; L-Low





A large purple scroll graphic with a white outline and a white shadow. The scroll is unrolled, showing a white background in the center. The text "Fifth Semester" is written in white, bold, sans-serif font in the center of the scroll. The top and bottom edges of the scroll are rolled up, with the white background visible on the inside of the folds.

# **Fifth Semester**

<b>Course code</b>		<b>SHAKESPEARE -I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core IX</b>	<b>4</b>		<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge on Shakespeare</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To help the students to read, understand and appreciate the works of Shakespeare To make the students understand the theatre and audience of Shakespeare's age						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Comprehend the plays of Shakespeare					<b>K2</b>
2	Appreciate the nuances of Shakespeare's Universality and its impact on readers.					<b>K4</b>
3	Analyse the different types of plays and the devices used.					<b>K3</b>
4	Evaluate the themes of different kinds of plays					<b>K6</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>DETAILED</b>					<b>15hours</b>
Othello						
<b>Unit:2</b>	<b>DETAILED</b>					<b>15hours</b>
Twelfth Night						
<b>Unit:3</b>	<b>NON –DETAILED</b>					<b>15hours</b>
Merchant of Venice						
<b>Unit:4</b>	<b>NON DETAILED</b>					<b>15hours</b>
Julius Caesar						
<b>Unit:5</b>	<b>NON DETAILED</b>					<b>13 hours</b>
Shakespearean Theatre and Audience						
					<b>Total Lecture hours</b>	<b>75hours</b>
<b>Text Book(s)</b>						
1	Othello, Fingerprint					

2	Twelfth Night, Dover Thrift Editions
3	Merchant of Venice, Fingerprint
4	Julius Caesar, Fingerprint
<b>Reference Books</b>	
1	The Complete Works of William Shakespeare, Wilco Publishing House
2	Muir, Kenneth, Shakespeare's tragic Sequence
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://onlinecourses.swayam2.ac.in/ugc19_hs47/preview">https://onlinecourses.swayam2.ac.in/ugc19_hs47/preview</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	M	M	L	M	M	L	L
<b>CO 2</b>	M	L	L	M	M	L	L	S
<b>CO 3</b>	M	L	S	M	L	L	M	L
<b>CO 4</b>	M	M	M	L	S	M	L	M

\*S-Strong; M-Medium; L-Low





Course code	INDIAN WRITING IN ENGLISH		L	T	P	C
Core	Core-X		4	-	-	4
Pre-requisite	Basic Knowledge on Indian Writing in English		Syllabus Version	2022-2023		
<b>Course Objectives:</b>						
To introduce the eminent writers of Indian Writing in English To critically analyse the literary works in detail						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Familiar with the prominent writers of Indian Writing in English					<b>K2</b>
2	Compare the Indian Writing in English with British Literature					<b>K3</b>
3	Critically analyse the works of Indian Writing in English					<b>K4</b>
4	Evaluate the social issues represented in the literary text					<b>K6</b>
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>POETRY – Detailed</b>				<b>15hours</b>	
Poems No-1, 2, 3, 7, 8 &14						
<b>Unit:2</b>	<b>PROSE – Detailed</b>				<b>15 hours</b>	
Ajanta and Ellora, in the Monsoon? – Sashi Tharoor. The Argumentative Indian – Amartya Sen. Give as a Role Model – Abdul Kalam.						
<b>Unit:3</b>	<b>SHORT STORY –Non Detailed</b>				<b>15 hours</b>	
Sweets for Angels – R.K. Narayan The White Flower – R.K. Narayan The Postmaster – Rabindranath Tagore						
<b>Unit:4</b>	<b>DRAMA –Non Detailed</b>				<b>15 hours</b>	
Tughlaq – Girish Karnad. The Refugee – Asif Currimbhoy.						
<b>Unit:5</b>	<b>NOVEL – Non Detailed</b>				<b>15 hours</b>	
That Long Silence – Shashi Deshpande The God of Small Things – Arundathi Roy.						
<b>Total Lecture hours</b>					<b>75 hours</b>	

<b>Text Book(s)</b>	
1	Indian Verse in English- Poetry Selection for College Classes Macmillan publication
2	The Argumentative Indian: Writings on Indian History, Culture and Identity by Amartya Sen. Picador.
3	Tughlaq by Girish Karnad. OUP India.
4	That Long Silence by Shashi Deshpande. Penguin India.
5	The God of Small Things by Arundhati Roy. Penguin India.
<b>Reference Books</b>	
1	Critical Essays on Indian Writing in English, ed. M.K.Naik, S.K.Desai, G.S.Amur
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/94">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/94</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

### Mapping with Programme Outcomes

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO1</b>	S	L	S	M	L	L	M	L
<b>CO2</b>	M	M	S	M	S	L	M	L
<b>CO3</b>	M	L	S	L	S	M	L	M
<b>CO4</b>	S	L	L	M	S	M	M	S

\*S-Strong; M-Medium; L-Low



<b>Course code</b>		<b>AMERICAN LITERATURE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core-XI</b>	<b>4</b>	-	-	<b>4</b>
<b>Pre-requisite</b>		<b>Basic Knowledge on America Literature</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To introduce the works of eminent writers of American Literature To appreciate the themes, styles and forms of American Literature						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the diverse group of American authors and their style of writing					<b>K2</b>
2	Analyse the key ideas, representation of cultural events of historical periods.					<b>K4</b>
3	Compare American Literature with Indian Writing in English					<b>K5</b>
4	Create a simple creative writing based on prescribed literary pieces					<b>K6</b>
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>POETRY- DETAILED</b>					<b>15 hours</b>
1. Passage to India-Whitman 2. I Never Lost as Much But twice- Emily Dickinson 3. Success is counted sweetest- Emily Dickinson 4. A Bird came down the Walk- Emily Dickinson 5. After Apple Picking- Robert Frost 6. Come In- Robert Frost						
<b>Unit:2</b>	<b>POETRY- NON-DETAILED</b>					<b>15 hours</b>
1. West-Running Brook- Robert Frost 2. The Emperor of Ice Cream- Wallace Stevens 3. Anecdote of the Jar- Wallace Stevens 4. Skunk Hour- Robert Lowell						
<b>Unit:3</b>	<b>PROSE –DETAILED</b>					<b>15 hours</b>
1. Walden – Thoreau, Chapter-2, “Where I Lived and What I Lived For”						
<b>Unit:4</b>	<b>NOVEL -NON-DETAILED</b>					<b>15 hours</b>
Tom Sawyer - Mark Twain						

<b>Unit:5</b>	<b>DRAMA-DETAILED</b>	<b>15 hours</b>
Glass Menagerie - Tennessee Williams		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Poetry-American Literature edited by Sachidhanandhan (Emerald publishers)	
2	Walden, Thoreau, Maple Classics	
3	Tom Sawyer - Mark Twain, Maple Classics	
4	Glass Menagerie - Tennessee Williams, Bloomsbury India	
<b>Reference Books</b>		
1		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.mooc-list.com/course/american-literature-1865-engl-3350-wma">https://www.mooc-list.com/course/american-literature-1865-engl-3350-wma</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

**Mapping with Programme Outcomes:**

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO1</b>	S	M	M	L	L	S	M	M
<b>CO2</b>	M	M	S	M	L	M	M	L
<b>CO3</b>	M	L	L	S	M	M	L	S
<b>CO4</b>	M	L	S	L	S	M	M	L

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>COMMONWEALTH LITERATURE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core-XI</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic Knowledge on Commonwealth Literature</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
To develop analytical and critical reading through commonwealth literature To understand the socio- political conditions of people in commonwealth nations						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Comprehend the works of prominent authors in commonwealth Literature					<b>K2</b>
2	Compare the style of commonwealth writing					<b>K3</b>
3	Present critical analyse of prescribed literary works					<b>K4</b>
4	Evaluate the commonwealth literature with the help of knowledge gained on different cultures					<b>K5</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>POETRY – DETAILED</b>				<b>15 hours</b>	
1. Australia – A.D. Hope 2. Dying Eagle – E.J.Pratt 3. Telephone Conversation – Chinua Achebe						
<b>Unit:2</b>	<b>DRAMA – DETAILED</b>				<b>15 hours</b>	
Lion and the Jewel – Wole Soyinka						
<b>Unit:3</b>	<b>PROSE – NON-DETAILED</b>				<b>15 hours</b>	
“India: A Wounded Civilization” - V.S.Naipaul						
<b>Unit:4</b>	<b>FICTION- NON-DETAILED</b>				<b>15 hours</b>	
The Hungry Tide – Amitav Ghosh						

<b>Unit:5</b>	<b>SHORT STORY</b>	<b>15 hours</b>
A Cup of Tea – Katherine Mansfield		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	An Anthology of Commonwealth Poetry, C.D. Narasimhaiah, Trinity	
2	Lion and the Jewel – Wole Soyinka, Oxford UP	
3	India : A Wounded Civilization - V.S.Naipaul, Picador	
4	The Hungry Tide by Amitav Ghosh, The Borough Press	
5	Katherine Mansfield’s Collected Short stories, Wordsworth Classics	
<b>Reference Books</b>		
1	Texts and their Worlds II- K. Narayana Chandran, Foundation Books	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/109/104/109104116/">https://nptel.ac.in/courses/109/104/109104116/</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping with Programme Outcomes:

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO 1</b>	S	M	L	M	M	M	L	L
<b>CO 2</b>	M	L	S	L	M	M	L	L
<b>CO 3</b>	L	M	M	S	L	L	M	S
<b>CO 4</b>	M	M	L	M	S	L	M	M

\*S-Strong; M-Medium; L-Low

A large purple scroll graphic with a white outline and decorative curled corners at the top-left and bottom-left. The text "Sixth Semester" is centered in white.

# **Sixth Semester**

Course code	SHAKESPEARE			L	T	P	C
Core	Core-XIII			4	-	-	4
Pre-requisite	Knowledge on Shakespearean Works			Syllabus Version		2022-2023	
<b>Course Objectives:</b>							
To introduce analytical approach in reading Shakespearean plays To provide deep insight into literary the devices used by Shakespeare							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Intensive knowledge on Shakespearean plays					K2	
2	Analyse the universal characterization of Shakespeare					K4	
3	Evaluate the versatile writings of Shakespeare					K2, K5	
4	Enact a scene from Shakespearean play					K3	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	Detailed					<b>15 hours</b>	
Macbeth							
<b>Unit:2</b>	Detailed					<b>15 hours</b>	
As you Like it							
<b>Unit:3</b>	Non-Detailed					<b>15 hours</b>	
Henry IV Part I							
<b>Unit:4</b>	Non-Detailed					<b>15 hours</b>	
Antony and Cleopatra							
<b>Unit:5</b>	Non-Detailed					<b>15 hours</b>	
Plot, Characterization, Fools in Shakespearean drama.							
						<b>Total Lecture hours</b>	<b>75 hours</b>

<b>Text Book(s)</b>	
1	Macbeth, Fingerprint
2	As you Like it, Fingerprint
3	Henry IV Part I, Peacock Classics
4	Antony and Cleopatra, Maple Press
<b>Reference Books</b>	
1	The Complete Works of William Shakespeare, Wilco Publishing House
2	Muir, Kenneth, Shakespeare's Tragic Sequence
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.mooc-list.com/tags/william-shakespeare">https://www.mooc-list.com/tags/william-shakespeare</a>
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha	

#### **Mapping with Programme Outcomes:**

<b>Cos</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO1</b>	S	L	L	M	L	L	M	L
<b>CO2</b>	M	M	S	M	M	M	M	L
<b>CO3</b>	M	L	L	L	S	L	M	S
<b>CO4</b>	L	M	M	M	S	L	S	S

Course code	GENDER STUDIES		L	T	P	C
Core	Core-XIV		4	-	-	4
Pre-requisite	Basic Knowledge of Women writers		Syllabus Version		2022-2023	
<b>Course Objectives:</b>						
To make the student familiar with the writings of women writers To analyse a literary work with the socio-cultural point of view						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the layers of meaning in the writings of women writers			K2		
2	Analyse the female consciousness in literary works			K4		
3	Explore the gender issues in the literary works of women writers			K2, K5		
4	Know the various social discriminations towards womenfolk through the literary works			K3		
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>POETRY</b>				<b>15 hours</b>	
1. Lakshman – Toru Dutt 2. The Old Playhouse – Kamala Das 3. The Mother – Gwendolyn Brooks						
<b>Unit:2</b>	<b>SHORT STORIES</b>				<b>15 hours</b>	
Mahasweta Devi- 1. Breast Giver, 2. Dhoul, 3. Draupadi						
<b>Unit:3</b>	<b>NOVEL</b>				<b>15 hours</b>	
The Palace of Illusions – Chitra Banerjee Divakaruni						
<b>Unit:4</b>	<b>DRAMA</b>				<b>15 hours</b>	
Lights Out – Manjula Padmanabhan						



<b>Unit:5</b>	<b>THEORY</b>	<b>15 hours</b>
What is Patriarchy? – Kamala Bhasin		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Outcaste 4 stories by Mahasweta Devi. Seagull Books.	
2	The Palace of Illusions by Chitra Banerjee Divakaruni. Anchor	
3	Lights Out by Manjula Padmanabhan. Worldview Publications	
4	What is Patriarchy by Kamala Bhasin. Kali for Women.	
5	Narain's: Toru Dutt's Selected Poems, Lakshmi Narain Agarwal	
<b>Reference Books</b>		
1		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
<a href="https://www.classcentral.com/course/queeringidentities-17017">https://www.classcentral.com/course/queeringidentities-17017</a>		
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

**Mapping with Programme Outcomes:**

Co s	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
<b>CO1</b>	L	M	S	M	L	S	M	M
<b>CO2</b>	M	L	S	L	M	S	M	S
<b>CO3</b>	S	L	L	S	S	M	L	S
<b>CO4</b>	L	M	S	S	M	L	M	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INDIAN LITERATURE IN ENGLISH TRANSLATION</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>Core-XV</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		Basic Knowledge on Translation studies	<b>Syllabus Version</b>	2022- 2023		
<b>Course Objectives:</b>						
To make the students aware of the art of translation.						
To make the students get familiar with the regional literature translated into English						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the translated works and its nuances.					K2
2	Analyse the works with the help of literary theory, translate simple works of their mother tongue into English Language					K3
3	Knowledge on the ethics and impact of translations in Literature					K4
4	Compare regional literature with English Literature					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>POETRY</b>				<b>15 hours</b>	
Detailed - Gitanjali by Tagore, Verses 1 to 30 (Macmillan)						
<b>Unit:2</b>					<b>15 hours</b>	
<b>Non-detailed:</b> Thirukkural 1 to 20 verses						
<b>Unit:3</b>	<b>DRAMA</b>				<b>15 hours</b>	
<b>Non-Detailed:</b> Aurangzeb - Indira Parthasarathy (Seagull)						
<b>Unit:4</b>	<b>NOVEL</b>				<b>15 hours</b>	
Chemeen - Thakazhi Sivasankara Pillai						

<b>Unit:5</b>		<b>15 hours</b>
Sangati - Bama, Trans. Lakshmi Holmstrom – OUI		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Gitanjali by Tagore, Verses 1 to 30, Macmillan	
2	Thirukkural, M.Rajaram, Rupa	
3	Aurangzeb - Indira Parthasarathy, Seagull	
4	Chemeen, Thakazhi Sivasankara Pillai, Harper Perennial	
5	Sangati- Bama, Oxford India	
<b>Reference Books</b>		
1		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.futurelearn.com/courses/working-with-translation">https://www.futurelearn.com/courses/working-with-translation</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping with Programme Outcomes:

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
<b>CO1</b>	S	L	M	L	M	L	M	L
<b>CO2</b>	M	M	S	S	M	M	L	M
<b>CO3</b>	M	M	L	M	M	L	M	S
<b>CO4</b>	S	L	M	L	S	M	L	S

\*S-Strong; M-Medium; L-Low



**Job Oriented  
Certificate  
Course**

**SECOND YEAR****Semester III**

Course code	<b>JOB ORIENTED COURSE Paper I</b>		L	T	P	C
<b>JOB ORIENTED COURSE</b>	<b>LANGUAGE SKILL- 1</b>		<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Pre-requisite</b>	<b>Basic Knowledge on English language.</b>		<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
This paper aims at introducing the students to the field of communicative English To strengthen the grammatical knowledge and vocabulary						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Master framing sentence on different pattern					<b>K3</b>
2	Apply grammar in Speaking and writing					<b>K3</b>
3	Prepare grammatically correct passages					<b>K4</b>
4	Present short features.					<b>K6</b>
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>15 hours</b>	
<b>CHAPTER I -The sentence</b> <b>CHAPTER II -Parts of speech</b> <b>CHAPTER III- Nouns</b> <b>CHAPTER IV-Nouns number &amp; case</b> <b>CHAPTER V-Adjectives</b>						
<b>Unit:2</b>					<b>15 hours</b>	
<b>CHAPTER VI-Comparison of Adjectives</b> <b>CHAPTER VII -Articles</b> <b>CHAPTER VIII - Pronouns</b> <b>CHAPTER XI-Verbs</b>						
<b>Unit:3</b>					<b>15 hours</b>	
<b>CHAPTER XII-Verbs- Mood &amp; tense</b> <b>CHAPTER XIII-Concord or Agreement of the verbs with the subject</b> <b>CHAPTER XIV- Non- Finite Verbs</b>						

<b>Unit:4</b>		<b>15 hours</b>
<b>CHAPTER XXXVII-Word formation- The use of Prefixes</b> <b>CHAPTER XXXVIII- Word formation- The use of Suffixes</b> <b>CHAPTER XXXIX-Word formation- compound words</b>		
<b>Unit:5</b>		<b>15 hours</b>
<b>COMPOSITION</b> <b>CHAPTER XLIII- Paragraph writing</b> <b>CHAPTER XLVI- Expansion of passages</b>		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Active English Grammar and composition – Trinity / Laxmi Publications	
<b>Reference Books</b>		
1	Applied English Grammar and Composition, PC Das, NCBA	
2	J.C. Nesfield, Advanced English Grammar and Usage, Macmillan, 2002	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.coursera.org/specializations/improve-english">https://www.coursera.org/specializations/improve-english</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping of Programme Outcomes:

<b>COS</b>	<b>PO 1</b>	<b>PO 2</b>	<b>PO 3</b>	<b>PO 4</b>	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>
<b>CO1</b>	S	S	L	M	L	M	L	L
<b>CO2</b>	M	S	M	L	M	L	M	L
<b>CO3</b>	L	M	S	M	S	M	L	M
<b>CO4</b>	M	L	L	M	S	M	M	M

\*S-Strong; M-Medium; L-Low

**SECOND YEAR**

**Semester IV**

Course code	<b>JOB ORIENTED COURSE– Paper II</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Job Oriented Course</b>	<b>Language Skill 2</b>		<b>3</b>	<b>-</b>	<b>--</b>	<b>3</b>
<b>Pre-requisite</b>	<b>Basic Knowledge on English language.</b>		<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
This paper aims at introducing the students to functions of basic grammar and frame sentences without grammatical errors. To improve language proficiency of the students To strengthen the grammatical knowledge and vocabulary						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Transform sentences into different kinds and learn synthesis & transformation of sentences				<b>K1</b>	
2	Apply grammar in LSRW				<b>K2</b>	
3	Analyse the usage of words, comprehend the writings and composition				<b>K3</b>	
4	Adapt professional Writing				<b>K5</b>	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>					<b>15 hours</b>	
<b>CHAPTER XIX-</b> Adverbs <b>CHAPTER XXXI</b> – Sequence of Tenses & Direct & Indirect speech						
<b>Unit:2</b>					<b>15 hours</b>	
<b>CHAPTER XX-</b> Preposition <b>CHAPTER XXI-</b> Conjunctions <b>CHAPTER XXXIII-</b> Verb Patterns & Sentences						

<b>Unit:3</b>		<b>15 hours</b>
<b>CHAPTER XXVIII-</b> Synthesis of sentences <b>CHAPTER XXIX-</b> Transformation of sentences		
<b>Unit:4</b>		<b>15 hours</b>
<b>CHAPTER XLI-</b> Words often confused <b>CHAPTER XLII-</b> Words with appropriate Prepositions		
<b>Unit:5</b>		<b>15 hours</b>
<b>COMPOSITION</b>		
<b>CHAPTER XLIV-</b> Letter writing <b>CHAPTER XLV-</b> Precis Writing <b>CHAPTER XLVIII-</b> Writing stories from outlines.		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
Active English Grammar and composition – Laxmi Publications		
<b>Reference Books</b>		
J.C. Nesfield, Advanced English Grammar and Usage, Macmillan, 2002		
Applied English Grammar and Composition, PC Das, NCBA		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
<a href="https://www.mooc-list.com/course/write-professional-emails-english-coursera">https://www.mooc-list.com/course/write-professional-emails-english-coursera</a>		
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

### Mapping with Programme Outcomes:

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
<b>CO1</b>	S	S	M	M	L	M	L	M
<b>CO2</b>	S	S	M	L	M	L	M	L
<b>CO3</b>	S	S	S	L	M	L	L	M
<b>CO4</b>	M	M	L	M	L	S	M	L

\*S-Strong; M-Medium; L-Low



A purple scroll graphic with a white outline, featuring a rolled-up top edge and a rolled-up bottom edge. The text is centered on the scroll.

# **Value Added Course**

## THIRD YEAR

### Semester V

Course code		VALUE ADDED COURSE – Paper I	L	T	P	C
VALUE ADDED COURSE		Study of English Phonetics 1	3	-	-	3
Pre-requisite		Basic Knowledge on English language	Syllabus Version	2022-2023		
<b>Course Objectives are</b>						
To make the students get familiarize with phonetics and phonetic symbols of English To inculcate a scientific approach towards the study of language						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Learn phonetics symbols with sounds					<b>K1</b>
2	Use right accent and rhythm in speaking					<b>K2</b>
3	Analyze the syllable and accent					<b>K4</b>
4	Classify the speak sound					<b>K5</b>
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>						<b>15 hours</b>
<b>CHAPTER I</b> – List of Phonetic Symbols <b>CHAPTER II</b> – Language, Linguistics & Communication						
<b>Unit:2</b>						<b>15 hours</b>
CHAPTER III- Components of Linguistic CHAPTER IV- Phonetics: The articulation of speech sounds						
<b>Unit:3</b>						<b>15 hours</b>
CHAPTER V- Classification of Speech Sounds CHAPTER VI- Classification & Description of consonants						

<b>Unit:4</b>		<b>15 hours</b>
CHAPTER VII- Classification & Description of Vowels CHAPTER VIII- Phonology- Phonemes and Allophones		
<b>Unit:5</b>		<b>15 hours</b>
CHAPTER IX – The Syllable CHAPTER X- The pure vowels & Diphthongs of English		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	A Textbook of English Phonetics for Indian Students- T. Balasubramanian- Trinity Press	
<b>Reference Books</b>		
1	A.G. Gimson: An introduction to the pronunciation of English, Hodder Arnold, 1989	
2	Daniel Jones: Outline of English Phonetics, B.G. Teubnee,1922	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.mooc-list.com/course/teach-english-now-second-language-listening-speaking-and-pronunciation-coursera">https://www.mooc-list.com/course/teach-english-now-second-language-listening-speaking-and-pronunciation-coursera</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping with Programme Outcomes:

COS	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	S	M	L	M	M	M	L	M
CO 3	S	S	L	M	L	M	L	L
CO 3	M	S	M	L	M	L	M	M
CO 4	M	L	M	L	M	L	S	M

\*S-Strong; M-Medium; L-Low

**THIRD YEAR**

**Semester VI**

Course code		VALUE ADDED COURSE- II	L	T	P	C
<b>VALUE ADDED COURSE</b>		<b>Study of English phonetics- II</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Pre-requisite</b>		<b>Basic Knowledge on English language</b>	<b>Syllabus Version</b>	2022-2023		
<b>Course Objectives:</b>						
This paper aims at introducing the students to the field of English phonetics To make the students get familiar with correct English Pronunciation						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	The concept of general Indian English					<b>K2</b>
2	Apply intonation accent rhythm in Speaking					<b>K3</b>
3	Master phonetics symbols and sounds					<b>K4</b>
4	Transcript into Phonetic language					<b>K5</b>
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>						<b>15 hours</b>
<b>CHAPTER XI-</b> The consonants of English <b>CHAPTER XII-</b> Consonant Clusters in English						
<b>Unit:2</b>						<b>15 hours</b>
<b>CHAPTER XIII-</b> The Concept of General Indian English						
<b>Unit:3</b>						<b>15 hours</b>
<b>CHAPTER XIV-</b> Word-accent in English <b>CHAPTER XV-</b> Accent & Rhythm in Connected Speech						

<b>Unit:4</b>		<b>15 hours</b>
<b>CHAPTER XVI- Intonation</b>		
<b>Unit:5</b>		<b>15 hours</b>
<b>CHAPTER XVII- Assimilation and Elision</b> <b>CHAPTER XVIII- Practice in Phonetic Transcription</b>		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book (s)</b>		
1	A Textbook of English Phonetics for Indian Students- T. Balasubramanian- Trinity Press	
<b>Reference Books</b>		
1	A.G. Gimson: An introduction to the pronunciation of English, Hodder Arnold, 1989	
2	Daniel Jones: Outline of English Phonetics, B.G. Teubnee, 1922	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.coursera.org/courses?query=english%20pronunciation">https://www.coursera.org/courses?query=english%20pronunciation</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

#### Mapping with Programme Outcomes:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	S	S	L	M	M	L	M	L
CO 2	M	S	L	M	L	M	L	M
CO 3	M	S	M	L	S	L	M	M
CO 4	M	L	M	L	S	L	S	M

\*S-Strong; M-Medium; L-Low







**Elective  
Courses**



## **ELECTIVES SEMESTER: V**

### **Elective – I-A ENGLISH FOR COMPETITIVE EXAMINATIONS.**

#### **SUBJECT DESCRIPTION:**

This Paper aims at preparing the students for Various Competitive Examinations.

#### **OBJECTIVE:**

1. To know of Various tools that are essential for Competitive Exams
2. CONTENTS: All Chapters.

#### **Book Prescribed:**

English for Competitive Examinations by R.P Bhatnagar (Macmillan)

### **Elective – I-B STUDY OF INDIAN THEATRE**

#### **OBJECTIVE:**

1. To help students develop histrionic talents
2. To enable students to manipulate the communicative potentials of drama
3. To give them an orientation in dramatic writing

Unit I – Introduction to Indian Theatre

Unit II - Traditions of Performance

Unit III - How to Write a Play

Unit IV - How to Produce a Play

Unit V - Review of a Play - Project or Dialogue for a Situation

#### **Books for Reference:**

Study of Indian Theatre - ENNES Publications Contact Nos: 04252 – 22628393622 11949

## **Elective – I-C PUBLIC SPEAKING**

### **OBJECTIVE:**

1. To help students overcome the fear of facing an audience
2. To train students in planning a speech and then draft it
3. To acquaint students with the major practices in effective public speaking

Unit I - Rudiments of Public Speaking (Theory)

Unit II - Techniques of Public Speaking

Unit III - Planning and Writing a Speech

Unit IV - Overcoming fear and understanding audience

Unit V - Model speeches

1. I have a dream - Martin Luther King
2. Yes We Can –Obama
3. Chicago – Swami Vivekananda

Book for Reference: Dale Carnegie - Public Speaking

## SEMESTER: VI

### Elective – II-A Communicative English Subject

#### SUBJECT DESCRIPTION:

This Paper gives the students knowledge of Communicative skills.

#### OBJECTIVE:

To excel in Communicative skills.

CONTENTS: All Chapters from Developing Communication Skills Book Prescribed:  
Developing Communication Skills, by Krishnamohan and Meera Benerji.(Macmillan)

### Elective – II-B FUNDAMENTALS OF COMPARATIVE LITERATURE

#### OBJECTIVE:

1. To enable students to have an understanding of literatures of the world
2. To orient them towards understanding of different cultures
3. To train them in the logic and principles of comparison

Unit I -Introduction to Comparative Literature

Unit II - Principles of Comparative Literature

Unit III - Oriental and Occidental Literature – Comparative Study

Unit IV - Aesthetics -Eastern and Western

Unit V - Project – A Comparative Study of a Short Story or a Poem Each from a Language of Student's Choice and English.

#### Book for Reference:

Fundamentals of Comparative Literature - ENNES Publications.

### **Elective–II-MASS COMMUNICATION AND JOURNALISM**

#### OBJECTIVE:

- 1.To make the student familiar with the field of Journalism
2. To analyse the art of editing

Unit I- Chapters 1-3

Unit II - **Chapters 4-6**

Unit III-Chapters 7-9

Unit IV –Chapters 10-12

Unit V –Chapters 13-15

Book Prescribed: Basic Journalism by Rangaswami Parthasarathy

## **SEMESTER VI**

### **Elective – III-An Introduction to Linguistics.**

#### **SUBJECT DESCRIPTION:**

This Paper gives students knowledge of Linguistics.

#### **OBJECTIVE:**

On successful completion of the paper the students should have come to know of Linguistics.

#### **CONTENTS:**

UNIT I: SECTION I- On Language & Languages (Unit 1 to 8)

UNIT II: SECTION - II- Linguistics (Unit 9 to 13)

UNIT III: SECTION III-Structural Linguistic (Unit 14 to 23)

UNIT IV : SECTION VI- Other Approaches ( Unit 39 to 41)

UNIT V: SECTION VII- Some Applications of Linguistics (Unit 42 to 45)

Book to be prescribed: Modern Linguistics. An Introduction by S. K. Verma, N. Krishnaswamy. (Oxford University Press)

### **Elective – III-B STUDYING NOVELS**

#### **OBJECTIVE**

To help students segment and classify different aspects of a Novel

1. To enable students to recognize themes and techniques
2. To train writing critiques of novels

Unit I – Authors

Unit II – Characters

Unit III – Setting

Unit IV - Plot and Story

Unit V - Themes

Book for Reference: Mastering English Literature - Richard Gill (MacMillan)

### **Elective – III-C TRANSLATION TASKS**

#### **OBJECTIVE:**

1. To familiarize students with administration terminologies in English and Mother Tongue
  2. To help them acquire a working knowledge in that field
- Unit I - Word and Phrase  
Classification

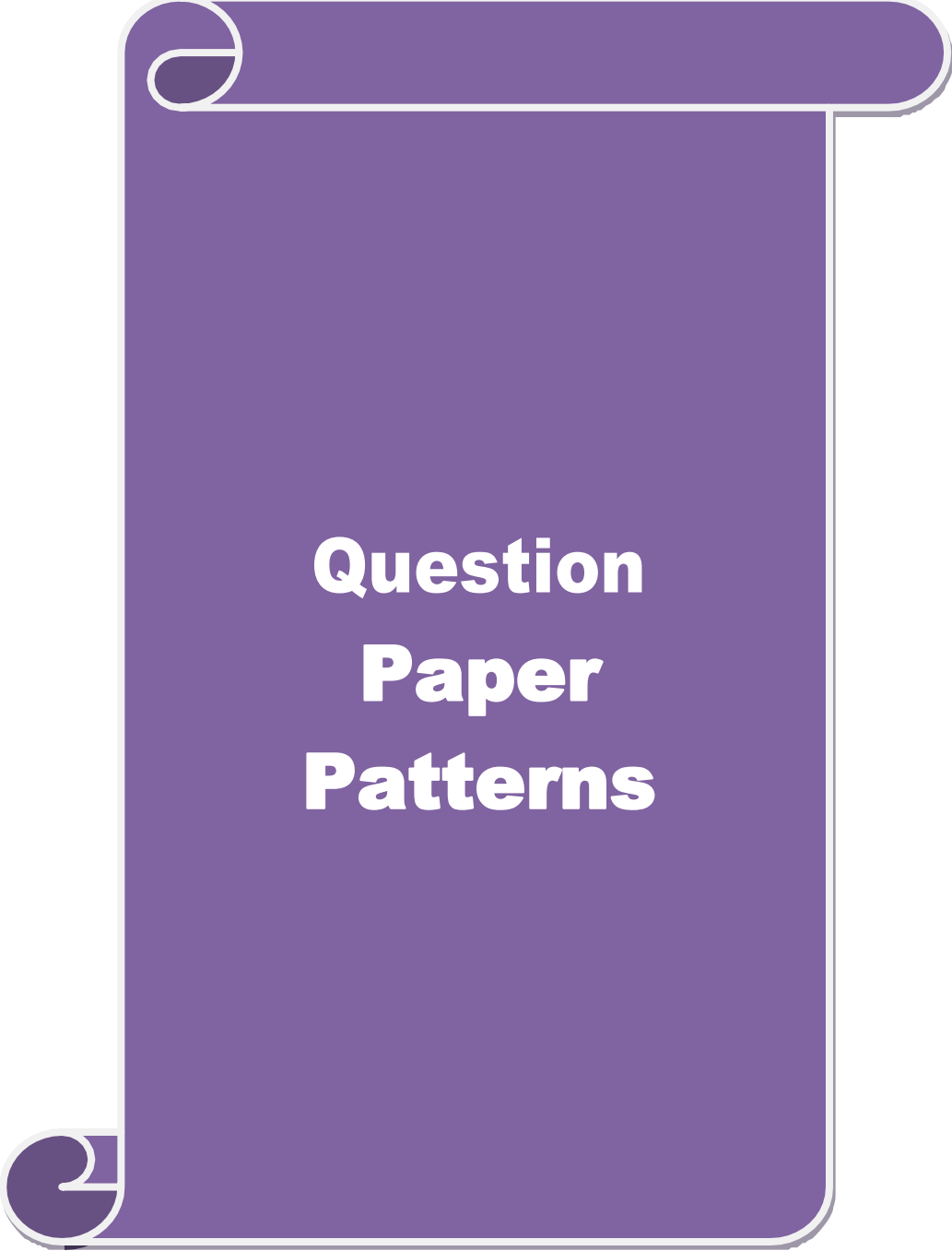
Unit II - Note terms, forms of endorsement

Unit III - Note Order, Official Letters

Unit IV - Circulars, Proceedings

Unit V - Government Orders, Announcements, Advertisements in Newspapers, Official Notes.

Book for Reference: Translation Tasks - ENNES Publications



**Question  
Paper  
Patterns**

**For the students admitted during the academic year 2022-2023 onwards**

**QUESTION PAPER PATTERNS FOR PAPERS – Maximum 50 Marks:**

Section A – 10 Marks

Ten objective type questions from all units ( 10 X 1 = 10 ) ,

Section B – 15 Marks

Five either or type questions of 5 marks each from all units. ( 5 X 3 = 15),

Section C – 25 Marks

Five either or type questions from all units (5 X 5 = 25)

**QUESTION PAPER PATTERNS FOR PAPERS – Maximum 45 Marks:**

Section A – 10 Marks

Ten objective type questions from all units (10 X 1 = 10)

Section B – 10 Marks

Five either or type questions of 2 marks each from all units. (5 X 2 = 10),

Section C – 25 Marks

Five either or type questions from all units (5 X 5 = 25)

In Section -A all the multiple choice questions in Drama I and Drama II should be from the following texts alone.

Drama I- Dr. Faustus, She Stoops to Conquer Drama II –Pygmalion, The Doll’s House







**PROVIDENCE COLLEGE FOR WOMEN  
AUTONOMOUS  
SPRING FIELD, COONDOOR, THE NILGIRIS**

**M. A. English Literature**



**Syllabus**

**(With effect from 2022- 2023 onwards)**

**Program Code:**

**PROVIDENCE COLLEGE FOR WOMEN,  
SPRING FIELD, COONOOR  
DEPARTMENT OF ENGLISH**



**MISSION**

To see a World in a Grain of Sand

And a Heaven in a Wild Flower

Hold Infinity in the palm of your hand

And Eternity in an hour

The mission of the department, are William Blake's lines which contains a load of meaning. To teach the students to view even the tiniest of things with importance as they contain aspects of the whole. To learn to view the world through literature.

**VISION**

Learning to unlearn on the lap of literature.

To be open to learn, understand and internalize concepts for a better life.

### **Programme Outcome MA English Literature**

On successful completion of the MA English Literature programme, students:

- PO1: Develop the understanding of society as literature reflects social life.
- PO2: Discover and experiment new techniques in analysing literary texts.
- PO3: Acquire sound communicative skills and use it in establishing a good career.
- PO4: Build creativity and apply it in writing.
- PO5: Create a better outlook of life from the learning experience.
- PO6: Utilize the avenues for skilled postgraduates as columnists and creative artists.
- PEO7: Choose online platforms to become bloggers and reviewers.
- PEO8: Select fields like journalism to get employed as reporters and editors
- PEO9: Identify positions at the state and central level like the civil services and attempt  
Competitive examinations
- PEO10: Apply their language skills to become successful trainers in communication.

### **Programme Specific Outcome**

After successful completion of the MA English programme, the students are expected to:

- PSO1: Understand the genres, writings, movements and periods of English literature.
- PSO2: Acquire a sound knowledge of the periods of English Literature and writers
- PSO3: Demonstrate creative skills like translating classic regional literature.
- PSO4: Recall the learnt concepts and texts in clearing qualifying and competitive examinations.
- PSO5: Develop good communication skills
- PSO6: Select unexplored areas for research.
- PSO7: Show interest in the literatures of the world
- PSO8: Demonstrate translation skills by translating simple texts
- PSO9: Learn the important movements and theories in Literature
- PSO10: Make use of the experience of the morals and values learnt from literature in  
transforming society

**PROVIDENCE COLLEGE FOR WOMEN, SPRING FIELD, COONOOR**

## M.A. English Literature Curriculum

(For the students admitted during the academic year **2022 – 23 onwards**)

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	Paper I - BRITISH LITERATURE – I (FROM CHAUCER TO MILTON)	4	5		50	50	100
	Paper II - AMERICAN LITERATURE	4	5		50	50	100
	Paper III – SHAKESPEARE	4	5		50	50	100
	Paper IV – <b>LITERARY THEORY I</b>	4	5		50	50	100
	Paper V – <b>AWARDS &amp; AUTHORS</b>	4	5		50	50	100
	Elective I	4	5		50	50	100
		24	30		300	300	600
<b>SECOND SEMESTER</b>							
	Paper VI - BRITISH LITERATURE – II (DRYDEN TO ROMANTIC AGE)	4	5		50	50	100
	Paper VII - INDIAN WRITING IN ENGLISH	4	5		50	50	100
	Paper VIII - ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS – I	4	5		50	50	100
	Paper IX – NEW LITERATURES IN ENGLISH	4	5		50	50	100
	Paper X - THE ENGLISH LANGUAGE – II	4	5		50	50	100
	Elective II	4	5		50	50	100
		24	30		300	300	600
<b>THIRD SEMESTER</b>							
	Paper XI - BRITISH LITERATURE – III (FROM THE VICTORIAN AGE TO THE MODERN	4	5		50	50	100

	AGE)						
	Paper XII - ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS – II	3	5		50	50	75
	Paper XIII - METHODS OF TEACHING ENGLISH	4	5		50	50	100
	Paper XIV – LITERARY THEORY II	4	5		50	50	100
	Paper XV - RESEARCH METHODOLOGY	4	5		50	50	100
	ELECTIVE III	4	5		50	50	100
		24	30		300	300	600
<b>FOURTH SEMESTER</b>							
	Paper XVI - INTRODUCTION TO WOMEN'S STUDIES	4	6		50	50	100
	Paper XVII – WORLD CLASSICS IN TRANSLATION	4	6		50	50	100
	PROJECT WORK	6	12		50	100	200
	ELECTIVE IV	4	6		50	50	100
		18	30		200	250	450
		90	120		1100	1150	2150
<b>ONLINE COURSES</b>							
	SWAYAM-MOOCs	2					
	NON-SHOLASTICS WITH CREDITS						

**Electives: List of Group Elective papers**

	GROUP A	GROUP B	GROUP C
<b>Paper I Sem I</b>	<b>MEDICAL TRANSCRIPTION</b>	<b>A SURVEY OF LITERATURES IN ENGLISH- BRITISH LITERATURE (SEM.I)</b>	<b>TRANSLATION STUDIES</b>
<b>Paper II Sem II</b>	<b>BASICS OF MEDICAL TERMINOLOGY</b>	<b>A SURVEY OF LITERATURES IN ENGLISH - AMERICAN LITERATURE (SEM.II)</b>	<b>TRANSLATION AN OVERVIEW</b>
<b>Paper III Sem III</b>	<b>PULMONOLOGY AND CARDIOLOGY</b>	<b>A SURVEY OF LITERATURES IN ENGLISH - INDIAN WRITING IN ENGLISH (SEM.III)</b>	<b>LANGUAGE, CULTURE AND TRANSLATION PRACTICES</b>
<b>Paper IV Sem IV</b>	<b>GASTROENTEROLOGY, GENITOURINARY SYSTEM, GYNECOLOGY AND OBSTETRICS</b>	<b>A SURVEY OF LITERATURES IN ENGLISH - NEW LITERATURES IN ENGLISH (SEM. IV)</b>	<b>TRANSLATION PROJECT</b>

## M.A ENGLISH LITERATURE

### I SEMESTER

Course code	BRITISH LITERATURE – I FROM CHAUCER TO MILTON	L	T	P	C
<b>Core/Elective/Supportive</b>	CORE PAPER I				
<b>Pre-requisite</b>	Basic knowledge about the genres of English Literature	<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Equip the students with the knowledge of some of the classic literary texts of the period.</li> <li>2. Provide the students with an in-depth knowledge of the period, its features, writings and social life.</li> <li>3. Fulfill the growing demand for good English postgraduates.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the language and literature of the period				K2
2	Analyse the social life and its reflection in the literary texts of the age				K4
3	Remember the prominent works of the classical writers				K1
4	Apply the features of the different literary forms to the prescribed texts				K3
5	Evaluate the technical aspects in the given texts				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>BRITISH LITERATURE I</b>					
<b>Unit:1</b>	<b>POETRY</b>	<b>15 -- hours</b>			
Geoffrey Chaucer:           The Prologue to the Canterbury Tales ThomasWyatt:               Farewell Love Henry Howard Earl of Surrey: Love doth not Reign and Live Within My Thought Edmund Spenser:       Prothalamion and Epithalminion .					
<b>Unit:2</b>	<b>POETRY</b>	<b>15 -- hours</b>			
John Milton:               Paradise Lost Book II  John Donne:               1.The Canonisation 2. Death be not Proud  Andrew Marvell:       The Garden					
<b>Unit:3</b>	<b>DRAMA</b>	<b>15 -- hours</b>			
Marlowe:               Edward II  John Webster:       Duchess of Malfi					
<b>Unit:4</b>	<b>PROSE</b>	<b>15 -- hours</b>			
Francis Bacon:   1. Of Adversity 2.Of Love 3. Of Friendship					



4. Of Ambition John Bunyan: The Pilgrims Progress		
<b>Unit:5</b>	<b>CRITICISM</b>	<b>15-- hours</b>
Sydney: An Apology for Poetry  Ben Jonson: from Everyman out of His Humour		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 -- hours</b>
<b>Text Book(s)</b>		
1	Poems are selected from the Norton Anthology of English Literature – Revised Volume – 1	
2		
<b>Reference Books</b>		
1	English Critical Tradition: An Anthology of English Literary Criticism – Vol – I by S. Ramaswami and V. Seturaman	
2		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://online-learning.harvard.edu/subject/literature">https://online-learning.harvard.edu/subject/literature</a>	
2		
3	Any other online programme related to the content of the paper can also be used.	
Course Designed By: Dr. N. Bhavana & Dr. Anitha R		

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	M	M	M	S
<b>CO2</b>	S	S	S	S	S	S	M	S	S	S
<b>CO3</b>	S	S	S	S	S	S	M	S	S	M
<b>CO4</b>	S	S	S	S	S	S	S	S	S	M
<b>CO5</b>	S	S	S	M	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>AMERICAN LITERATURE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		CORE PAPER II				
<b>Pre-requisite</b>		An understanding of American writings prescribed in the under graduate level	<b>Syllabus version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Help the students understand the paper as a representation of American writings at different periods.</li> <li>2. Study the culture of the land as depicted in the given works.</li> <li>3. Acquire the knowledge of various movements and theories and its application to other texts.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the American outlook as seen in the prescribed texts					K2
2	Analyse works of literature, its forms and features in the American context					K4
3	Remember the writers and the period to which they belonged					K1
4	Apply critical theories to contemporary American texts					K3
5	Evaluate the works of writers from a researcher's perspective					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>PAPER II – AMERICAN LITERATURE</b>						
<b>Unit:1</b>	<b>POETRY</b>					<b>15-- hours</b>
Whitman :When Lilacs Last in the Dooryard Bloomed Emily Dickenson :Success is counted Sweetest Because I could not stop for Death Robert Frost : Mending Wall Sylvia Plath : Daddy (The New Poetry edited by Alvarez) Wallace Stevens: The Emperor of Ice Cream.						
<b>Unit:2</b>	<b>DRAMA</b>					<b>15 hours</b>
Eugene O'Neil : The Hairy Ape Tennessee Williams : Glass Menagerie						
<b>Unit:3</b>	<b>PROSE</b>					<b>15 hours</b>
Henry James: Art of Fiction Poe : The Philosophy of Composition						
<b>Unit:4</b>	<b>FICTION</b>					<b>15 hours</b>
Alice Walker : The color purple Nathaniel Hawthorne: The Scarlet Letter						

<b>Unit:5</b>	<b>CRITICISM</b>	<b>15 hours</b>								
Cleanth Brooks : The Language of Paradox Kenneth Burke : The Poetic Process										
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>								
Expert lectures, online seminars – webinars										
<b>Total Lecture hours</b>		<b>75 hours</b>								
<b>Text Book(s)</b>										
1	<i>Five Approaches to Literary Criticism</i> by Wilber Scott Macmillan, 1963									
2	An Anthology of American Literature : 1980 Eurasia Publishing House, New Delhi									
<b>Reference Books</b>										
1										
2										
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1	<a href="https://www.conted.ox.ac.uk/courses/the-modern-american-novel-an-introduction-online">https://www.conted.ox.ac.uk/courses/the-modern-american-novel-an-introduction-online</a>									
2										
3	Any other online programme related to the content of the paper can also be used.									
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R										
<b>Mapping with Programme Outcomes</b>										
Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	M	M	S
CO3	S	S	S	S	S	M	S	S	S	M
CO3	S	S	S	S	S	S	M	M	S	S
CO4	S	S	S	S	S	M	S	M	M	S
CO5	S	S	S	S	S	S	S	S	S	M
*S-Strong; M-Medium; L-Low										

<b>Course code</b>		<b>SHAKESPEARE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER III					
<b>Pre-requisite</b>	A basic understanding of Shakespearean texts		<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Understand the plays of Shakespeare in an in depth manner</li> <li>2. Gain knowledge about the age, social life and settings of Shakespearean plays</li> <li>3. Interpret any text of Shakespeare</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the language and techniques in the plays of Shakespeare				K1	
2	Create a better society from the morals and lessons learnt through the texts				K6	
3	Identify characters and lines from the texts prescribed				K2	
4	Apply literary theories to any given Shakespearean text				K3	
5	Compare the literature of the Elizabethan era with that of another				K5	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						

<b>PAPER III – SHAKESPEARE</b>		
<b>Unit:1</b>		<b>15 hours</b>
Hamlet		
<b>Unit:2</b>		<b>15 hours</b>
Much Ado About Nothing		
<b>Unit : 3</b>		
King Lear		
<b>Unit:4</b>		<b>15 hours</b>
Tempest		
<b>Unit:5</b>		<b>15 hours</b>
Shakespeare's Stage, and the following sonnets. Sonnet No :18 –Shall I compare thee... Sonnet No :33 – Full many a glorious morning I _ve seen... Sonnet No :46--Mine eye and the heart are at mortal war ... Sonnet No :76—why is my verse so barren of new pride ...		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>

Expert lectures, online seminars – webinars

**Total Lecture hours**

**75 hours**

**Text Book(s)**

- 1 Shakespeare – The Complete Work; Wilco Publishing House, Mumbai, India. 2005.
- 2 Knights, L.C.: Shakespeare: The Histories, London, The British Council, 1962. (Writers and Their Work Series)
- 3 Charlton, H.B.: Shakespearean Comedy, London, Methuen, 1957.

**Reference Books**

- 1 Muir, Kenneth, Shakespeare's Tragic Sequence, 1972
- 2 Brown, John Russell: Shakespeare and His Comedies, London, Methuen, 1957.

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

- 1 <https://www.conted.ox.ac.uk/courses/shakespeare-online>
- 2 <https://www.thoughtco.com/list-of-shakespeare-plays-2985250>
- 3 Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	S	S	S
CO3	S	S	S	S	S	S	S	S	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	M	M	S	S
CO5	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>LITERARY THEORY I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER IV					
<b>Pre-requisite</b>			<b>Syllabus Version</b>			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Build a strong base in theory</li> <li>2. Support the students in preparing for research</li> <li>3. Develop confidence in students in applying theory to their texts</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the need and right usage of theory					K2
2	Remember the basic approaches in literary theory					K1
3	Apply their theoretical knowledge in practice					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Paper IV – LITERARY THEORY I</b>						
<b>Unit:1</b>	<b>MORAL APPROACH : LITERATURE AND MORAL IDEAS</b>				<b>15 hours</b>	
Genius and taste - Irving Babbitt						
New Compassion in the American Novel- Edmund Fuller						
<b>Unit:2</b>	<b>PSYCHOLOGICAL APPROACH : LITERATURE IN THE LIGHT OF PSYCHOLOGICAL THEORY</b>				<b>15 hours</b>	
Image of the father - Simon O. Lesser						
The Myth in Jane Austen- Geoffrey Gorer						
<b>Unit:3</b>	<b>SOCIOLOGICAL APPROACH : LITERATURE AND SOCIAL IDEALS</b>				<b>15 hours</b>	
Tragic fallacy - Joseph Wood Krutch						
Rudyard Kipling- George Orwell						
<b>Unit:4</b>	<b>FORMALISTIC APPROACH : LITERATURE AS AESTHETIC STRUCTURE</b>				<b>15 hours</b>	
Keats's sylvan historian : history without footnotes - Cleanth Brooks						
Sailing to Byzantium, Prolegomena to a poetics of the Lyric- Elder Olson						
<b>Unit:5</b>	<b>ARCHETYPAL APPROACH : LITERATURE IN THE LIGHT OF MYTH</b>				<b>15 hours</b>	

Hamlet and Orestes - Gilbert Murray		
Come Back to the Raft Again Huck Honey- Leslie Fiedler		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Five Approaches to literary criticism- Wilbur Scott	
2		
3		
<b>Reference Books</b>		
1		
2		
3		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.conted.ox.ac.uk/courses/literary-theory-an-introduction-online">https://www.conted.ox.ac.uk/courses/literary-theory-an-introduction-online</a>	
2	<a href="https://www.classcentral.com/course/swayam-literary-theory-and-literary-criticism-7982">https://www.classcentral.com/course/swayam-literary-theory-and-literary-criticism-7982</a>	
3	Any other online programme related to the content of the paper can also be used.	
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R		

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	M	M	S	S	S
<b>CO3</b>	S	S	S	S	M	M	S	S	S	M
<b>CO3</b>	S	S	S	M	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	M	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>AWARDS &amp; AUTHORS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER V					
<b>Pre-requisite</b>	A basic knowledge of sounds in the English language		<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Identify different literary authors						
2. To understand the various awards related literature						
3. To learn the significance of awards for literature						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the importance of awards for literary texts					K2
2	Apply the rules to articulate sounds					K3
3	Distinguish awards and their significance					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Paper V – AWARDS &amp; AUTHORS</b>		
<b>Unit:1</b>		<b>3 hours</b>
Introduction to different Awards		
<b>Unit:2</b>		<b>18 hours</b>
Nobel Prize		
Poetry- Louise Gluck		
Fiction- Gabriel Gracia Marquez		
Drama- T.S. Elliot		
Prose- Nobel Lecture- Martin Luther King Jr		
<b>Unit:3</b>		<b>18 hours</b>
Pulitzer Prize		
Poetry- Gwendolyn Brooks		
Fiction- Steinbeck		
Drama- O' Neil		
Prose- V.S. Naipaul		
<b>Unit:4</b>		<b>18 hours</b>
Booker Prize		
Short Fiction- Nadine Gordimer		
Margaret Atwood		
Jhumpa Lahiri		
Katherine Ann Porter		
<b>Unit:5</b>		<b>18 hours</b>
Sahitya Academy Award		



Poetry- Kamala Das- An Introduction										
Fiction- Nayantra Sahgal- Rich Like Us										
Drama- Mahesh Dattani- Final Solutions										
Prose- Arundati Roy- The End of Imagination										
<b>Unit:6</b>		<b>Contemporary Issues</b>							<b>2 hours</b>	
Expert lectures, online seminars – webinars										
		<b>Total Lecture hours</b>							<b>75 hours</b>	
<b>Text Book(s)</b>										
1										
2										
<b>Reference Books</b>										
1										
2										
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1										
2										
3	Any other online programme related to the content of the paper can also be used.									
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R										
<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	M	S	M	S	S	M	S	M	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	M	M	M	S	S	S	M	S	M
<b>CO5</b>	S	S	S	S	S	S	M	M	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>BRITISH LITERATURE II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		CORE PAPERVI				
<b>Pre-requisite</b>		A basic understanding of the genres of English literature	<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Understand the ideas of the writers and the techniques used during the Augustan and Romantic period</li> <li>2. Interpret the connection of man with nature as brought out in the works of the period</li> <li>3. Apply the theories of the writers to any given text with the acquired knowledge</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	List the writers and the works of the period					K1
2	Interpret any work with a clear understanding of the features of the age					K2
3	Identify new areas of study and apply the theories learnt					K3
4	Simplify the prescribed texts for better understanding					K4
5	Justify the understanding of the writers through projects and assignments					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>SEMESTER II</b>						
<b>Paper VI - BRITISH LITERATURE – II (DRYDEN TO ROMANTIC AGE)</b>						
<b>Unit:1</b>	<b>POETRY</b>					<b>15-- hours</b>
Wordsworth : Tintern Abbey Coleridge : Kubla Khan Shelley : Ode to the West Wind Keats : Ode on a Grecian Urn Oliver Goldsmith : The Deserted Village (1-250lines).						
<b>Unit:2</b>	<b>DRAMA</b>					<b>15 hours</b>
Dryden : All for Love Sheridan : The Rivals						
<b>Unit:3</b>	<b>PROSE</b>					<b>15 hours</b>
Charles Lamb : The following essays from the Essays of Elia :						

1. Old China
2. Dream Children : A Reverie
3. In Praise of Chimney Sweepers
4. Dissertation upon a Roast Pig and
5. Jonathan Swift : Gulliver's Travels I

<b>Unit:4</b>	<b>FICTION</b>	<b>15 hours</b>
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George Elliot: *Mill on the Floss*  
Jane Austen : *Northanger Abbey*

<b>Unit:5</b>	<b>CRITICISM</b>	<b>15 hours</b>
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Wordsworth : Preface to Lyrical Ballads  
Johnson : Preface to Shakespeare

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
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Expert lectures, online seminars – webinars

	<b>Total Lecture hours</b>	<b>75hours</b>
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**Text Book(s)**

1	
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2	
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**Reference Books**

1	
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2	
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**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="https://www.udemy.com/course/critical-reading-for-college-success-elements-of-fiction/">https://www.udemy.com/course/critical-reading-for-college-success-elements-of-fiction/</a>
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2	
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3	Any other online programme related to the content of the paper can also be used.
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Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	M	S	M	S	S	S	S	S	M	S
<b>CO2</b>	S	S	S	S	S	S	M	S	M	S
<b>CO3</b>	S	S	S	M	M	S	S	S	S	S
<b>CO4</b>	S	M	S	M	S	M	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INDIAN WRITING IN ENGLISH</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER VII					
<b>Pre-requisite</b>	<b>A basic understanding of the genres of English literature</b>		<b>Syllabus Version</b>	<b>2022</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Outline the history of Indian writing in English and introduce students to some of the prominent writers and their works.</li> <li>2. Identify the writers of Indian literature through an understanding of the style and techniques used.</li> <li>3. Develop interest in the variety of literature produced from diverse regions and its richness.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the writers and works of different periods from the Indian point of view					K1
2	Identify the context and get a clear picture of Indian life portrayed in the works					K3
3	Analyse any given work from a critical perspective					K4
4	Assess the quality of literature produced from the subcontinent					K5
5	Develop a research mind to explore new areas for research					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

### Paper VII – INDIAN WRITING IN ENGLISH

<b>Unit:1</b>	<b>POETRY</b>	<b>15 hours</b>
A. K. Ramanujan : Looking for a Cousin on a Swing Nissim Ezekiel : Poet, Lover, Bird Watcher Sri Aurobindo : I have a Hundred Lives GievePatel : On killing a Tree Meena Alexander : Natural Difficulties VikramSeth :A Little Distance.		
<b>Unit:2</b>	<b>DRAMA</b>	<b>15 hours</b>
Mahesh Dattani : Brief Candle Manjula Padmanabhan : Harvest		
<b>Unit:3</b>	<b>PROSE</b>	<b>15 hours</b>
Letters from a Father to his Daughter – Jawaharlal Nehru - (1- 15 letters) The Dance of Shiva – AnandaCoomaraswamy		
<b>Unit:4</b>	<b>FICTION</b>	<b>15 hours</b>
Amish Tripathy : The Secret of Nagas Attia Hosain: Sunlight on a Broken Column		
<b>Unit:5</b>	<b>CRITICISM</b>	<b>15 hours</b>
G. B. Mohan Thampi : Rasa" as Aesthetic Experience		

M. Hiriyanna : The Main Aspects of Indian Aesthetics										
<b>Unit:6</b>	<b>Contemporary Issues</b>								<b>2 hours</b>	
Expert lectures, online seminars – webinars										
<b>Total Lecture hours</b>										<b>75 hours</b>
<b>Text Book(s)</b>										
1	Brief Candle: Three Plays : Penguin Books India, 2010									
2	Letters from a Father to his Daughter – Jawaharlal Nehru - (1- 15 letters) (Viking publications :2004)									
3	Essay from The Journal of Aesthetics and Art Criticism, Vol. 24, No. 1, Oriental Aesthetics. (Autumn, 1965) pp.75-80. ( <a href="http://www.srinivasreddy.org/summer/Aesthetic%20Experience.pdf">http://www.srinivasreddy.org/summer/Aesthetic%20Experience.pdf</a> )									
4	Essay from Indian Aesthetics: An Introduction Ed. By V.S.Sethuraman. Macmillan 1992									
<b>Reference Books</b>										
1										
2										
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1	<a href="https://www.classcentral.com/course/swayam-short-fiction-in-indian-literature-14287">https://www.classcentral.com/course/swayam-short-fiction-in-indian-literature-14287</a>									
2	<a href="https://www.classcentral.com/course/swayam-the-popular-gothic-novel-20012">https://www.classcentral.com/course/swayam-the-popular-gothic-novel-20012</a>									
3	<a href="https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108">https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108</a> Any other online programme related to the content of the paper can also be used.									
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R										
<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	M	S	S	S	S	S	M	S
<b>CO2</b>	S	S	S	S	S	S	M	S	M	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER VIII					
<b>Pre-requisite</b>	A basic understanding of literary terms		<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Build the knowledge of literary terms and theory strong in students</li> <li>2. Develop the competency of students to face competitive examinations</li> <li>3. Improve the learning skills of students through various modes of testing</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the literary terms forms and theories					K1
2	Understand the different periods of English literature					K2
3	Apply the learnt theories to any text					K3
4	Analyse any given text thematically and technically					K4
5	Interpret any literary piece of work					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Paper VIII - ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS-I</b>						
<b>Unit:1</b>						<b>15 hours</b>
Literature of the Absurd to Burlesque.						
<b>Unit:2</b>						<b>15 hours</b>
Unit II: Canons of Literature to Dream Vision						
<b>Unit:3</b>						<b>15 hours</b>
Edition to Great Chain of Being						
<b>Unit:4</b>						<b>15 hours</b>
Haiku to Ivory Tower						
<b>Unit:5</b>						<b>15 hours</b>
Unit V: Jeremiad to Myth						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars						
<b>Total Lecture hours</b>					<b>75 hours</b>	
<b>Text Book(s)</b>						
1	A Glossary of Literary Terms, Abrahams, M.H (Publishers :Harcourt Asia PTE Ltd or Thomson Asia Pte Ltd)					
2						

<b>Reference Books</b>										
1	A Dictionary of Literary Terms ,Cuddon.A ( Penguin )									
2	The Post –Colonial Studies .The Key Concepts, Bill Ashcroft, Griffiths and Helen Tiffin (Routledge)									
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1	<a href="https://onlinecourses.nptel.ac.in/noc20_hs19/preview">https://onlinecourses.nptel.ac.in/noc20_hs19/preview</a>									
2										
4	Any other online programme related to the content of the paper can also be used.									
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R										
Mapping with Programme Outcomes										
Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	S	M	M	M	S
CO2	M	M	S	S	S	S	M	S	M	M
CO3	S	S	S	M	M	S	S	M	S	S
CO4	M	M	S	M	S	M	S	S	S	S
CO5	S	S	M	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>NEW LITERATURES IN ENGLISH</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER IX					
<b>Pre-requisite</b>	<b>An understanding of the writings in English from other nations</b>		<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Discover the literary texts from different parts of the world</li> <li>2. Understand the culture and social life of people of other nations through their literature</li> <li>3. Compare the writings from different parts of the world and its features</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Choose texts from different parts of the world and understand the background of that literature					K1
2	Translate some of the texts into regional languages					K2
3	Apply the theories of comparative literature to study the literature of two different countries					K3
4	Analyse the texts from different perspectives					K4
5	Develop an interest in world literature					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Paper IX – NEW LITERATURES IN ENGLISH</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15-- hours</b>
Wilfred Campbell : The Winter Lakes (Canada) David Rubadiri : A Negro Labourer in Liverpool (Africa) Sri Aurobindo : The Pilgrim of the Night (India) Shaw Neilson : The Bard and the Lizard (Australia) Derek Walcott : Ruins of a Great House (The West Indies) Allen Curnow : Time (New Zealand).		
<b>Unit:2</b>	<b>PROSE</b>	<b>15-- hours</b>
Tagore : Sadhana Chapter I – III V.S Naipaul : Area of Darkness		
<b>Unit:3</b>	<b>DRAMA</b>	<b>15-- hours</b>
Soyinka : The Road Girish Karnad: Hayavadana		
<b>Unit:4</b>	<b>FICTION</b>	<b>15-- hours</b>
Chinua Achebe : Things Fall Apart Romesh Gunsekera: Reef		
<b>Unit:5</b>	<b>CRITICISM</b>	<b>15-- hours</b>
1.Margaret Atwood : Ice Women v. Earth Mothers : the Stone Angel and The		



Absent Venus

2.Stuart Hall : Cultural Identity and Diaspora

**Unit:6**

**Contemporary Issues**

**2 hours**

Expert lectures, online seminars – webinars

**Total Lecture hours**

**-- hours**

**Text Book(s)**

1 | Poems are from An Anthology of Common Wealth poetry by C.D. Narasimhaiah.

2 | Essays form Readings in Commonwealth Literature Ed By Walsh)

3 | Criticism from "Readings in Commonwealth Literature Ed. William Walsh Clarendon Press, Oxford 1973,228-240 pp.

**Reference Books**

1 |

2 |

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1 | [https://onlinecourses.swayam2.ac.in/arp19\\_ap88/preview](https://onlinecourses.swayam2.ac.in/arp19_ap88/preview)

2 | [https://www.queensu.ca/artsci\\_online/courses/canadian-literature](https://www.queensu.ca/artsci_online/courses/canadian-literature)

3 | Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	M	S	S	S	S
CO2	S	S	S	S	S	S	M	S	M	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	S	S	M
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>THE ENGLISH LANGUAGE II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER X					
<b>Pre-requisite</b>	Basic understanding of the English language		<b>Syllabus Version</b>		<b>2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Understand the history of the origin of the English language</li> <li>2. Outline the growth of the English language</li> <li>3. Explain the evolution of the English language at a deeper level</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Outline the history of the English language					K1
2	Summarize the growth of the English language					K2
3	Identify in the changes in the structure of the language down the years					K3
4	Make use of the knowledge gained to improve their communication skills					K3
5	Select unexplored areas of the English language for research					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						

<b>Paper X - THE ENGLISH LANGUAGE – II</b>		
<b>Unit:1</b>		<b>15 hours</b>
Chapter I &. II.		
<b>Unit:2</b>		<b>15 hours</b>
Chapter III , IV&V		
<b>Unit:3</b>		<b>15 hours</b>
Chapter VI		
<b>Unit:4</b>		<b>15 hours</b>
Chapter VII		
<b>Unit:5</b>		<b>15 hours</b>
Chapter VIII ,IX, & X		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	F.T.Wood- An Outline History of English Language	
2		

<b>Reference Books</b>	
1	A History of the English Language, Baugh, A.C.
2	The Growth and Structure of English Language, Jespersen, Otto.

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://alison.com/course/diploma-in-english-language-and-literature-revised">https://alison.com/course/diploma-in-english-language-and-literature-revised</a>
2	<a href="https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108">https://www.classcentral.com/course/swayam-history-of-english-language-and-literature-14108</a>
3	Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S	M	M	M	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	S	S	M
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>BRITISH LITERATURE III (FROM THE VICTORIAN AGE TO THE MODERN AGE)</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER XI					
<b>Pre-requisite</b>	An understanding of the periods of English literature		Syllabus Version			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Discover the features of the Victorian period</li> <li>2. Understand the transition from the Victorian to the modern period</li> <li>3. Interpret the texts in connection with the theories and characteristics of the age</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the writers and works of the periods					K1
2	Understand the shift in thought and techniques from the Victorian to the modern period					K2
3	Apply the theories of the age to the prescribed texts					K3
4	Analyse any literary work keeping in mind the age and its features					K4
5	Identify areas for research					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>SEMESTER III</b>						
<b>Paper XI - BRITISH LITERATURE – III (FROM THE VICTORIAN AGE TO THE MODERN AGE)</b>						
<b>Unit:1</b>	<b>POETRY</b>				<b>15-- hours</b>	
Robert Browning : Rabbi Ben Ezra W.B.Yeats : Easter 1916 T.S.Eliot : Hollow Men Tennyson : Tithonus F.Thompson : The Hound of Heaven Thom Gunn : On the Move, The Wound Larkin :The Whitsun Wedding.						
<b>Unit:2</b>	<b>DRAMA</b>				<b>15-- hours</b>	
Shaw : Caesar and Cleopatra Samuel Beckett: Waiting for Godot						
<b>Unit:3</b>	<b>PROSE</b>				<b>15-- h;ours</b>	
George Orwell :        1. Reflection of Gandhi 2. New Words 3. Bookshop Memories 4. Shooting an Elephant Lyton Strachey : The Eminent Victorians Florence Nightingale'						

Thomas Carlyle : Hero as Poet

<b>Unit:4</b>	<b>FICTION</b>	<b>15-- hours</b>
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Oscar Wilde: Picture of Dorian Gray  
Virginia Woolf: Mrs. Dalloway

<b>Unit:5</b>	<b>CRITICISM</b>	<b>15-- hours</b>
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W. K. Wimsatt Jr & M.C.Beardsley :The Intentional Fallacy.  
Cleanth Brooks: Irony as a Principle of Structure.

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
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Expert lectures, online seminars – webinars

<b>Total Lecture hours</b>	<b>-- hours</b>
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**Text Book(s)**

- |   |   |
|---|---|
| 1 | Prose-N.G.Nayar, ed. Selected Essays of Orwell (Macmillan)                                      |
| 2 | Essays are from English Critical Traditions ed. S.Ramaswamy&V.S.Sethuraman Vol. II, Macmillan). |

**Reference Books**

- |   |
|---|
| 1 |
| 2 |

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

- |   |   |
|---|---|
| 1 | <a href="https://www.conted.ox.ac.uk/courses/trollope-eliot-dickens-and-hardy-reading-victorian-fiction-online">https://www.conted.ox.ac.uk/courses/trollope-eliot-dickens-and-hardy-reading-victorian-fiction-online</a> |
| 2 |   |
| 3 | Any other online programme related to the content of the paper can also be used.  |

Course Designed By: Dr. N. Bhavana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	M	S
CO2	S	S	S	S	S	S	M	S	M	S
CO3	S	S	M	M	M	S	S	S	S	S
CO4	S	M	S	M	S	M	S	S	S	S
CO5	S	S	S	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER XII					
<b>Pre-requisite</b>	An understanding of the literary forms and theories		<b>Syllabus Version</b>		2020	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
4. Build the knowledge of literary terms and theory strong in students						
5. Develop the competency of students to face competitive examinations						
6. Improve the learning skills of students through various modes of testing						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the literary terms forms and theories					K1
2	Understand the different periods of English literature					K2
3	Apply the learnt theories to any text					K3
4	Analyse any given text thematically and technically					K4
5	Interpret any literary piece of work					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Paper XII - ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS-II</b>						
<b>Unit:1</b>						<b>15 hours</b>
Grammar of Narratives to Oral Formulaic Poetry.						
<b>Unit:2</b>						<b>15 hours</b>
Palinode to Purple Patch						
<b>Unit:3</b>						<b>15 hours</b>
Queer theory to Roman `a clef						
<b>Unit:4</b>						<b>15 hours</b>
Satire to Synesthesia						
<b>Unit:5</b>						<b>15 hours</b>
Tension to Wit, Humour and the Comic						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars						
<b>Total Lecture hours</b>					<b>75 hours</b>	
<b>Text Book(s)</b>						
1	A Glossary of Literary Terms, Abrahams, M.H					

	(Publishers : Harcourt Asia PTE Ltd or Thomson Asia Pvt. Ltd)
2	

### Reference Books

1	A Dictionary of Literary Terms, Cuddon.A( Penguin )
2	The Post –Colonial Studies .The Key Concepts, Bill Ashcroft,Griffiths and Helen Tiffin ( Routledge)

### Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	<a href="https://onlinecourses.nptel.ac.in/noc20_hs19/preview">https://onlinecourses.nptel.ac.in/noc20_hs19/preview</a>
2	
3	Any other online programme related to the content of the paper can also be used.

### Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	S	M	M	M	S
CO2	M	M	S	S	S	S	M	S	M	M
CO3	S	S	S	M	M	S	S	M	S	S
CO4	M	M	S	M	S	M	S	S	S	S
CO5	S	S	M	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

Course code	TITLE OF THE COURSE			L	T	P	C
Core/Elective/Supportive	CORE PAPER XIII METHODS OF TEACHING ENGLISH						
Pre-requisite	A basic understanding of the English language			Syllabus Version	2020 onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Understand the different methods to teach the English Language</li> <li>2. Develop the methods learnt into effective practice</li> <li>3. Improve the teaching techniques for better results</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the various methods and its significance in effective teaching						K1
2	Understand the importance of following the different methods						K2
3	Apply the learnt methods into practice						K3
4	Analyse ways to improve the methods for better understanding						K4
5	Create innovative methods for a complete understanding						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>Unit</b>					<b>15 hours</b>	
Chapter I - III							
<b>Unit:2</b>	<b>Unit</b>					<b>15 hours</b>	
Chapter IV - VI							
<b>Unit:3</b>	<b>Unit</b>					<b>15 hours</b>	
Chapter VII – IX							
<b>Unit:4</b>	<b>Unit</b>					<b>15 hours</b>	
Chapter X - XII							
<b>Unit:5</b>	<b>Unit</b>					<b>15 hours</b>	



Chapter XIII - XV

**Unit:6** **Contemporary Issues** **2 hours**

Expert lectures, online seminars – webinars

**Total Lecture hours** **75 hours**

**Text Book(s)**

1 Teaching English Approaches, Methods and Techniques – N. Krishnaswamy and Lalitha Krishnaswamy ( Macmilan Publishers India Ltd., 2003

2 Methods and Teachniques Of Teaching English- J.E.Vallabi

**Reference Books**

1 Teaching English as a Second Language-Theory and Praxis- Aarati Majumdar

2 REET English Teaching Method- [Dr. Umakant Vyas](#) , [Suman Vyas](#)

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1 [https://onlinecourses.swayam2.ac.in/cec20\\_ed03/preview](https://onlinecourses.swayam2.ac.in/cec20_ed03/preview)

2 <https://youtu.be/ZgugEnl7h-g>

4 <https://www.classcentral.com/course/swayam-b-ed-english-pedagogy-of-teaching-english-17521>

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	M	S	S	S	M
CO3	S	S	S	S	M	S	S	S	M	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	M
CO5	S	S	S	S	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b>LITERARY THEORY II</b>	L	T	P	C
Core/Elective/Supportive	CORE PAPER XIV					
Pre-requisite	A basic knowledge of English Literature		Syllabus Version		2020	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Outline the major literary theories and introduce the theorists						
2. Apply literary theories to a given text and further incorporate it in research						
3. Understand the literary movements and theories which is important to understand literature itself						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the theories and theorists of the different periods					K1
2	Understand the theories and the changes in outlook down the years					K2
3	Apply the relevant theories to any literary text					K3
4	Analyse a piece of literature from a critical perspective					K4
5	Evaluate a work of art from the theoretical point of view					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						

<b>Paper XIV – LITERARY THEORY II</b>		
<b>Unit:1</b>	<p><b>POSTCOLONIALISM</b></p> <p>Decolonization-Fanon</p> <p>Benedict Andrews-nationalism-imagined communities</p> <p>Edward Said- Orientalism</p> <p>Gayatri Spivak-Strategic essentialism-subaltern studies</p> <p>Homi K Bhabha-Hybridity</p> <p><b>Essay- Gayathri Spivak- <i>Can the Subaltern Speak?</i></b></p>	<b>15 hours</b>
<b>Unit:4</b>	<p><b>CULTURAL MATERIALISM/NEW HISTORICISM</b></p> <p>Raymond Williams –culture and materialism</p> <p>Stephen Green Blatt &amp; Louis Montrose-Textuality and Historicity</p> <p>Politics and power-Jonathan Dollimore-Alan Sinfield</p> <p><b>Essay –Stuart Hall's <i>Cultural Studies and its Theoretical Legacies</i></b></p>	<b>15 hours</b>
<b>Unit:5</b>	<b>PSYCHOANALYSIS</b>	<b>15 hours</b>

	<p>Sigmund Freud - id, ego, super ego-Oedipus complex</p> <p>Lacan-mirror stage-imaginary, symbolic and real-ego formation and constructions of self hood</p> <p>Jouissance- Zizek ideology</p> <p>Subject-subjectivization-fantasy</p> <p><b>Essay-Sigmund Freud's <i>The Interpretation of Dreams</i></b></p>	
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<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
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Expert lectures, online seminars – webinars can cover topics related to postmodernism

	<b>Total Lecture hours</b>	<b>75 hours</b>
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**Text Book(s)**

1	Beginning Theory by Peter Barry
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**Reference Books**

1	The Norton Anthology of Theory
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**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="https://www.conted.ox.ac.uk/courses/literary-theory-an-introduction-online">https://www.conted.ox.ac.uk/courses/literary-theory-an-introduction-online</a>
2	<a href="https://onlinecourses.swyam2.ac.in/arp19_ap88/preview">https://onlinecourses.swyam2.ac.in/arp19_ap88/preview</a>
3	Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. Nila and Dr. N. Bhuvana

Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	S	S	M	M	M	S
CO2	M	M	S	S	S	S	M	S	M	M
CO3	S	S	S	M	M	S	S	M	S	S
CO4	M	M	S	M	S	M	S	S	M	S
CO5	S	M	M	S	M	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>RESEARCH METHODOLOGY</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER XV					
<b>Pre-requisite</b>	A basic interest in research with a knowledge of literary terms and theory		<b>Syllabus Version</b>	2020		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Evaluate any piece of literature from a thematic, stylistic and theoretical point of view</li> <li>2. Discuss the methodology of the research undertaken</li> <li>3. Defend a chosen analysis with evidence</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the fundamentals of writing research papers					K1
2	Understand what thesis writing is					K2
3	Apply literary theories to research					K3
4	Analyse texts from different perspectives					K4
5	Improve the quality of research through the knowledge gained					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>PAPER XV - RESEARCH METHODOLOGY</b>		
<b>Unit:1</b>		<b>15 hours</b>
<ol style="list-style-type: none"> <li>1. Writing at the tertiary level</li> <li>2. Planning the assignment</li> </ol>		
<b>Unit:2</b>		<b>15 hours</b>
<ol style="list-style-type: none"> <li>3. Planning the thesis</li> <li>4. Scholarly writing: A case study</li> <li>5. Format of a Research Paper.</li> </ol>		
<b>Unit:3</b>		<b>15 hours</b>
<ol style="list-style-type: none"> <li>6. Page and chapter format</li> <li>7. The use of quotations</li> <li>8. References</li> </ol>		
<b>Unit:4</b>		<b>15 hours</b>
<ol style="list-style-type: none"> <li>9. Documentation</li> <li>10. Works cited</li> </ol>		
<b>Unit:5</b>		<b>15 hours</b>
<ol style="list-style-type: none"> <li>11. Appendixes</li> <li>12. Editing and evaluating the final product</li> </ol>		

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>

**Text Book(s)**

1	M.L.A Hand Book – Revised Ed 8th Edition
2	Anderson, Durston & Pool: Thesis and Assignment Writing Wiley Eastern Limited

**Reference Books**

1	
2	

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	
2	
3	Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	M	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	M	S	S	S	S	S	S	M
CO5	M	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INTRODUCTION TO WOMEN'S STUDIES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER XVI					
<b>Pre-requisite</b>	<b>A basic knowledge of some of the women's writings and the literature of the country to which they belong</b>		<b>Syllabus Version</b>	<b>2020</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. Interpret the writings of women from different parts of the globe</li> <li>2. Identify different styles of writing</li> <li>3. Compare the literatures and themes of different nations</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Relate the writings of women from other parts of the world to ours					K1
2	Interpret the works of prominent women writers					K2
3	Experiment with different writings for research					K3
4	Survey the literature of different countries on the style and themes					K4
5	Choose different areas for research from the knowledge gained					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>SEMESTER IV</b>		
<b>PAPER XVI - INTRODUCTION TO WOMEN'S STUDIES</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15-- hours</b>
Sylvia Plath :Lady Lazaraus Imitiaz Dharker: Another Woman Anne Sexton : The Moss of his Skin Kamala Das : An Introduction Spoiling the Name Adrienne Rich : Snapshots of a Daughter-in-law Willa Cather: London Roses Judith Wright : The Old Prison Sarojini Naidu : Coromandel Fishers		
<b>Unit:2</b>	<b>PROSE</b>	<b>15 hours</b>
Maya Angelou : I Know Why the Caged Bird sings Virginia Woolf : A Room of One's Own		
<b>Unit:3</b>	<b>DRAMA</b>	<b>15 hours</b>
Uma Parameswaran: Sons Must Die Lorraine Hansberry : A Raisin in the Sun		
<b>Unit:4</b>	<b>FICTION</b>	<b>15 hours</b>
Bapsi Sidhwa : The Pakistani Bride		

Gita Haraharan: Thousand Faces of Night

<b>Unit:5</b>	<b>CRITICISM</b>	<b>15 hours</b>
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Elaine Showalter : Towards a Feminist Poetics

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
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Expert lectures, online seminars – webinars

<b>Total Lecture hours</b>	<b>75 hours</b>
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**Text Book(s)**

1

2

**Reference Books**

1 | Code, Lorrainne, ed. Encyclopedia of Feminist Theories

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1 | [https://onlinecourses.swayam2.ac.in/arp19\\_ap88/preview](https://onlinecourses.swayam2.ac.in/arp19_ap88/preview)

2 | [https://www.queensu.ca/artsci\\_online/courses/canadian-literature](https://www.queensu.ca/artsci_online/courses/canadian-literature)

3 | Any other online programme related to the content of the paper can also be used.

Course Designed By: Dr. N. Bhuvana & Dr. Anitha R

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	M	S	M	S
CO3	S	S	M	S	M	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>WORLD CLASSICS IN TRANSLATION</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	CORE PAPER XVII					
<b>Pre-requisite</b>			<b>Syllabus Version</b>		<b>2020</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. Give an overview of World Classics						
2. Introduce students to world literature						
3. Students understand the process of translation						
4. Encourage researchers engage in translated projects						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the differences in literature					K1
2	Interpret and understand texts of various countries					K2
3	Apply translation theories to analyse the given text					K3
4	Analyse the text from a critical perspectives					K4
5	Evaluate various periods and culture					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						

<b>Paper XVII -</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15-- hours</b>
Kalidasa- Meghaduta		
Virgil- Aeneid (Book iv) Lines- 393-553		
<b>Unit:2</b>	<b>DRAMA</b>	<b>15 hours</b>
Sophocles- Oedipus Rex		
Badal Sircar- Evam Indrajit		
<b>Unit:3</b>	<b>FICTION</b>	<b>15 hours</b>
Hermann Hesse- Siddhartha		
Albert Camus -The Outsider		
<b>Unit:4</b>	<b>SHORT STORIES</b>	<b>15 hours</b>
Anton Chekhov- The Huntsman		
Rabindranath Tagore- Subha		
Leo Tolstoy- A Prisoner in Caucasus		
<b>Unit:5</b>	<b>PROSE</b>	<b>15 hours</b>
Victor Shklovsky- Art as Technique		
<b>Unit:6</b>		<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>



<b>Text Book(s)</b>	
1	Rabindranath Tagore: Selected Short Stories, Macmillan, 2011
2	The Greatest Short Stories of Leo Tolstoy, Jaico Books.
3	The Greatest Short Stories of Anton Checkhov
<b>Reference Books</b>	
1	Translation and World Literature-Susan Bassnett
2	The Role of Literary Theory in Literary Translation- Cheng Zhang
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.newcastle.edu.au/course/ENGL1101">https://www.newcastle.edu.au/course/ENGL1101</a>
2	<a href="https://www.openculture.com/literature_free_courses">https://www.openculture.com/literature_free_courses</a>
3	Any other online programme related to the content of the paper can also be used.
Course Designed By: Dr. N. Bhuvana & Dr. Anitha R	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	S	S	S	S
<b>CO2</b>	S	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	S	S	S	M	S	M	S	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

**ELECTIVE- SURVEY OF LITERATURE - BRITISH LITERATURE**

<b>Unit I</b>	<b>POETRY</b>	<b>15 hours</b>
	1. Browning's My Last Duchess	
	2. Coleridge's Kubla Khan	
	3. Coventry Patmore's The Angel in the House	
	4. D.G. Rossetti's The Blessed Damozel	
	5. Dante's The Divine Comedy	
	6. Dryden's The Hind and the Panther	
	7. G.M.Hopkin's The Windhover	
	8. Geoffrey Chaucer's Prologue to Canterbury Tales	
	9. James Thomson's The City of Dreadful Night	
	10. Keats' Endymion	
	11. Matthew Arnold's Dover Beach	
	12. Philip Larkin's The Whitsun Wedding	
<b>Unit II</b>	<b>DRAMA</b>	<b>15 hours</b>
	1. Bernard Shaw's Man and Superman	
	2. Congreve's The Way of the World	
	3. Euripides' Medea	
	4. Galsworthy's Strife	
	5. Goldsmith's She Stoops to Conquer	
	6. Harold Pinter's The Dumb Waiter	
	7. Ibsen's A Doll's House	
	8. John Ford's Tis Pity She's a Whore	
	9. Kingsley Amis' Lucky Jim	
	10. Kyd's The Spanish Tragedy	
	11. Luigi Pirandello's Six Characters in Search of an Author	
	12. Marlowe's Doctor Faustus	

<b>Unit III</b>	<b>FICTION</b>	<b>15 hours</b>
	1. Ann Radcliffe's <i>The Mysteries of Udolpho</i>	
	2. Anthony Burgess' <i>The Wanting Seed</i>	
	3. Conrad's <i>Nostromo</i>	
	4. Daniel Defoe's <i>Moll Flanders</i>	
	5. Doris Lessing's <i>The Four-Gated City</i>	
	6. E.M. Forster's <i>A Passage to India</i>	
	7. Franz Kafka's <i>The Trial</i>	
	8. Golding's <i>Lord of the Flies</i>	
	9. H.G. Wells' <i>The War of the Worlds</i>	
	10. Hardy's <i>Jude the Obscure</i>	
	11. Henry Fielding's <i>Vanity Fair</i>	
	12. James Joyce's <i>Ulysses</i>	
<b>Unit IV</b>	<b>PROSE</b>	<b>15 hours</b>
	1. Battista Vico's <i>New Science</i>	
	2. Claude Levi-Strauss' <i>The Savage Mind</i>	
	3. Derrida's <i>Structure, Sign, and Play in the Discourse of the</i>	
	4. Eve Kosofsky Sedgwick's <i>Epistemology of the Closet</i>	
	5. F.R. Leavis' <i>Great Tradition</i>	
	6. Hazlitt's <i>The Spirit of the Age</i>	
	7. Helene Cixous' <i>Sorties</i>	
	8. I.A. Richards' <i>Practical Criticism</i>	
	9. Jeremy Collier's <i>A Short View of the Immortality and Profaneness</i>	
	10. John Lock's <i>An Essay Concerning Human Understanding</i>	
	11. Kate Millet's <i>Sexual Politics</i>	
	12. Lionel Trilling's <i>On the Teaching of Modern Literature</i>	
<b>Unit V</b>	<b>AUTHORS</b>	<b>15 hours</b>
	1. Aldous Huxley	
	2. Bertolt Brecht	

3. Charles Dickens		
4. D.H. Lawrence		
5. George Orwell		
6. Graham Greene		
7. Gunter Grass		
8. Jacques Lacan		
9. Jonathan Swift		
10. Joseph Addison		
11. Mikhail Bakhtin		
12. Milton		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1		
2		
<b>Reference Books</b>		
1	The Oxford Companion to English Literature edited by Margaret Drabble	
2	The Cambridge Guide to Literature in English by Ian Ousby	
3	Net.Set.Go: Literatures in English by D.E. Benet and S. Samuel Rufus	
4	Website:(National Digital Library) <a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>	
5	Website:www.poemhunter.com	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1		
2		
4		
<b>SURVEY OF LITERATURES IN ENGLISH - AMERICAN LITERATURE</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15 hours</b>
1. Allen Ginsberg's A Desolation		

2. Anne Bradstreet's Of the Four Ages of Man		
3. Archibald MacLeish's ArsPoetica		
4. Carl Sandburg's Chicago		
5. Edward Arlington Robinson's A Happy Man		
6. Emily Dickinson's Because I Could Not Stop for Death		
7. Gwendolyn Brooks' The Mother		
8. Hart Crane's The Bridge		
9. Hilda Doolittle's Helen		
10. John Ashbery's My Philosophy of Life		
11. Langston Hughes' Let America be America Again		
12. Lawrence Ferlinghetti's The World is a Beautiful Place		
<b>Unit:2</b>	<b>DRAMA</b>	<b>15 hours</b>
1. AmiriBarakka's The Slave		
2. Arthur Miller's Death of a Salesman		
3. August Wilson's Fences		
4. David Mamet's American Buffallo		
5. Edward Albee's Who is afraid of Virginia Woolf?		
6. Eugene Ionesco's		
7. Eugene O'Neil's Long Day's Journey into Night		
8. John Guare's Six Children of Separation		
9. Lillian Hellman's The Little Foxes		
10. Lorraine Hansberry's A Raisin in the Sun		
11. Neil Simon's The Old Couple		
12. Noel Coward's Present Laughter		
<b>Unit:3</b>	<b>FICTION</b>	<b>15 hours</b>
1. Albert Dresier's Sister Carrie		

2. Alice Walker's The Color Purple		
3. Bradbury's Farenheit 451		
4. Edith Wharton's The Age of Innocence		
5. Faulkner's The Sound and The Fury		
6. Fitzgerald's The Great Gatsby		
7. Harper Lee's To Kill a Mocking Bird		
8. Hemingway's A Farewell to Arms		
9. Henry James' The Portrait of a Lady		
10. J.D. Salinger's The Catcher in the Rye		
11. Joseph Heller's Catch-22		
12. Margaret Mitchell's Gone with the Wind		
<b>Unit:4</b>	<b>CRITICISM</b>	<b>15 hours</b>
1. Alice Walker's In Search of Our Mothers' Gardens: Womanist Prose		
2. Barbara Johnson's The Frame of Reference: Poe, Lacan,		
3. Cleanth Brooks' the Language of Paradox		
4. Edmund Fuller's The New Compassion in the American Novel		
5. Emerson's Self-reliance		
6. Geoffrey Hartmen's Crossing Over: Literary Commentary as Literature		
7. Harold Bloom's The Anxiety of Influence: A Theory of Poetry		
8. Henry James' The Art of Fiction J		
9. Irving Babbit's Genius and Taste		
10. J. C. Ransom's Criticism, Inc.		
11. Judith Butler's Undoing Gender		
12. Kenneth Burke's Poetic Process		
<b>Unit:5</b>	<b>AUTHORS</b>	<b>15 hours</b>
1. Adrienne Rich		
2. Allan Tate		
3. Amy Lowell		
4. E.E.Cummings		

5. Edgar Allan Poe		
6. Eugene O'Neil		
7. Ezra Pound		
8. James Hooper		
9. John Updike		
10. Mark Twain		
11. Nathaniel Hawthorne		
12. O'Henry		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1		
2		
<b>Reference Books</b>		
1	The Oxford Companion to English Literature edited by Margaret Drabble	
2	The Cambridge Guide to Literature in English by Ian Ousby	
3	Net.Set..Go: Literatures in English by D.E. Benet and S. Samuel Rufus	
4	Website:(National Digital Library) <a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>	
5	Website:www.poemhunter.com	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1		
2		
4		
<b>INDIAN WRITING IN ENGLISH (* INDIAN DIASPORIC WRITERS TOO ARE INCLUDED HERE.)</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15 hours</b>
1. A. K. Ramanujan's Small Scale Reflections on a Great House.		
2. AdilJussawalla's The Waiters		
3. Agha Shahid Ali's Call me Ishmail Tonight		

4. ArunKolatkar's Three Cups of Tea		
5. ArvindMehrotra's Between Bricks, Madness		
6. Daruwalla's Death by Burial		
7. Dom Moraes' A Letter		
8. GauuriDeshpande's The Female of the Species		
9. Gieve Patel's Forensic Medicine		
10. JayantaMahapatra's The Lost Children of America		
11. K.D. Katrak's The Kitchen Door		
12. Kamala Das's The Old Playhouse		
<b>Unit:2</b>	<b>DRAMA</b>	<b>15 hours</b>
1. Annie Zaidi's So Many Socks		
2. Anita Nair's Nine Faces of Being		
3. A. S. P. Ayyar'sSita's Choice		
4. AsifCurrimbhoy's The Refugee		
5. BadalSircar's That Other History		
6. Bharathi Sarabhai's Two Women		
7. Cyrus Mistry'sDoongaji House		
8. Dina Mehta's The Myth Makers		
9. GirishKarnad's The Sword of Tipu Sultan		
10. GurucharanDas'LarinsSaheb		
11. Mahasweta Devi's Mother of 1084		
12. Mahesh Dattani's Final Solutions		
<b>Unit:3</b>	<b>FICTION</b>	<b>15 hours</b>
1. AmitavGosh's Sea of Poppies		
2. Arundhati Roy's The God of Small Things		
3. ArvindAdiga's The White Tiger		
4. BishamSahni'sTamas		
5. ChamanNahal'sAzadi		
6. ChamanNahal'sAzadi		



7. David Davidar's The House of Blue Mangoes
8. J. G. Farrell's The Seige of Krishnapur
9. JhumpaLahiri's The Namesake
10. Kamala Markandaya'sNectar in a Sieve
11. Khushwant Singh's I Shall Not Hear the Nightingale
12. Kiran Desai's The Inheritance of Loss

<b>Unit:4</b>	<b>CRITICISM</b>	<b>15 hours</b>
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1. Aijaz Ahmad's Jameson's Rhetoric of Otherness and the 'National Allegory'
2. Arun P. Mukherjee's Ideology in the Classroom: A Case Study in the Teaching of English Literature in Canadian Univerisities
3. A. K. Coomaraswamy's The Dance of Shiva
4. Chandra TalpadeMohanty's Under Western Eyes: Feminist Scholarship and Colonial Discourse
5. DipeshChakrabarty'Postcoloniality and the Artifice of History
6. M. K. Gandhi's The Story of My Experiments with Truth
7. GauriViswanathan's The Beginnings of English Literary Study in British India
8. GayatriCharkravortySpivak's Can the Subaltern Speak?
9. Jawaharlal Nehru's The Discovery of India
10. KumkumSangari's The Politics of the Possible
11. G.B. Mohan's Rasa as Aesthetic Experience
12. Omprakash'sJoothan

<b>Unit:5</b>	<b>AUTHORS</b>	<b>15 hours</b>
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1. AmitChaudhuri
2. Anita Desai
3. Bharati Mukherjee
4. Chitra Banerjee Devakaruni
5. GirishKarnad
6. Gita Hariharan
7. K.N. Daruwalla
8. ManoharMalgoankar
9. Meena Alexander

10. Michael MadhusudanDutt		
11. Nirad C. Chaudhuri		
12. Rabindranath Tagore		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1		
2		
<b>Reference Books</b>		
1	The Cambridge Guide to Literature in English by Ian Ousby	
2	The Post-colonial Studies Reader edited by Bill Ashcroft, Gareth Griffiths and Helen Tiffin	
3	Postcolonial Discourses: An Anthology edited by Gregory Castle (Blackwell	
4	<i>Net . Set..Go: Literatures in English</i> by D.E. Benet and S. Samuel Rufus	
5	Website:(National Digital Library) <a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1		
2		
4		
<b>NEW LITERATURES IN ENGLISH</b>		
<b>Unit:1</b>	<b>POETRY</b>	<b>15 hours</b>
1. A.D. Hope's Australia		
2. Adriene Rich's Cartographies of Silence		
3. Allen Curnow's Time		
4. Bliss Carman's Wild Garden		
5. Chris Wallace Crabbe's Nature, Language, the Sea: An Essay		
6. Christopher Okigbo's Heavensgate		
7. David Diop's Africa		

8. Duncan Campbell's The Magic House

9. Edwin J. Pratt's Towards the Last Spike

10. Edwin Thumboo's Gods Can Die

11. Gabriel Okara's Once Upon a Time

12. George Frederick Cameron's The Future

**PROVIDENCE COLLEGE FOR WOMEN**  
**AUTONOMOUS**  
**SPRING FIELD, COONDOOR, THE NILGIRIS**  
**M. A. English Literature**

**QUESTION PAPER PATTERN**

**MAXIMUM- 50 MARKS**

**TIME- 3 HOURS**

**SECTION A**

**Answer all five in about 150 words: (5x4=20)**

1. a)  
or  
b)
2. a)  
or  
b)
3. a)  
or  
b)
4. a)  
or  
b)
5. a)  
or  
b)

**SECTION B**

**Answer all five in about 400 words each: (5x6=30)**

1. a)  
or  
b)
2. a)  
or  
b)
3. a)  
or  
b)
4. a)  
or  
b)
5. a)  
or  
b)

**PROVIDENCE COLLEGE FOR WOMEN  
AUTONOMOUS  
SPRING FIELD, COONOR, THE NILGIRIS**

**B. A. English Literature**



**Syllabus**

**(With effect from 2022- 2023 onwards)**

**Program Code:**

**PROVIDENCE COLLEGE FOR WOMEN,  
SPRING FIELD, COONOOR  
DEPARTMENT OF ENGLISH**



**MISSION**

To see a World in a Grain of Sand

And a Heaven in a Wild Flower

Hold Infinity in the palm of your hand

And Eternity in an hour

The mission of the department, are William Blake's lines which contains a load of meaning. To teach the students to view even the tiniest of things with importance as they contain aspects of the whole. To learn to view the world through literature.

**VISION**

Learning to unlearn on the lap of literature.

To be open to learn, understand and internalize concepts for a better life.

**PG & RESEARCH DEPARTMENT OF ENGLISH**  
**PROGRAMME OUTCOME & PROGRAMME SPECIFIC OUTCOME**  
**2022- 2023**

**Programme outcome of Part II English**

On successful completion of the Part II English programme students will be able to:

- PO1: Prove language skills through effective communication.
- PO2: Imbibe better understanding of the usage of the English language.
- PO3: Evaluate the skills of communication through the activities and exercises given.
- PO4: Apply the acquired skills in day to day life usage.
- PO5: Demonstrate good fluency and competency in the chosen career.
- PO6: Prove his proficiency in LSRW skills
- PO7: Develop communicative skills
- PO8: Establish communicative competence in personal circumstances.
- PO9: Express appropriate thoughts and ideas in formal and informal communication.
- PO10: Evaluate language in written communication.

**Programme Specific Outcome**

On successful completion of the Part II programme students are expected to:

- PSO1: Develop in-depth knowledge and interest in the English language.
- PSO2: Analyse the requirements for effective communication.
- PSO3: Assess and improve the acquired skills.
- PSO4: Apply the gained knowledge in critical thinking.
- PSO5: Create competitive atmosphere in the established career.

	12E	PART II – ENGLISH-I	L	T	P	C
<b>PART II ENGLISH</b>		<b>COMMUNICATIVE ENGLISH</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge of English language</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
The main objective of this course is to:						
1. Enable the students to communicate effectively and appropriate in day-today conversations.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To understand basic language skills through listening and reading					K1
2	To understand basic English grammar and use effectively					K2, K3
3	To enhance word power to speak and write effectively					K3
4	To improve flawless writing and speaking in day to day situations					K4
5	To communicate effectively					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	-					<b>20 hours</b>
1. Listening and Speaking - Introducing self and others -Listening for specific information Pronunciation (without phonetic symbols) -Essentials of pronunciation - American and British 2. pronunciation 3. Reading and Writing -Reading short articles – newspaper reports / fact based articles i. Skimming and scanning ii. Diction and tone - iii. Identifying topic sentences Reading aloud: Reading an article/report - Journal (Diary) Writing 4. Study Skills – 1 a. Using dictionaries, encyclopaedias, thesaurus 4. Grammar in Context: Naming and Describing • Nouns & Pronouns •Adjectives						
<b>Unit:2</b>	-					<b>20 hours</b>
1. LISTENING AND SPEAKING – a. Listening with a Purpose -b. Effective Listening c. Tonal Variation d. Listening for Information e. Asking for Information f. Giving Information and Writing 1. a. Strategies of Reading: Skimming and Scanning b. Types of Reading: Extensive and Intensive Reading c. Reading a prose passage d. Reading a poem e. Reading a short story 2.Paragraphs: Structure and Types a. What is a Paragraph? b. Paragraph structure c. Topic Sentence d. Unity e. Coherence f. Connections between Ideas: Using Transitional words and expressions g. Types of Paragraphs 3. Study Skills II: Using the Internet as a Resource a. Online search b. Know the keyword of India c. Refine your search d. Guidelines for using the Resources e. e-learning resources of Government f. Terms to know 4. Grammar in Context Involving Action-I a. Verbs b. Concord						
<b>Unit:3</b>						<b>15 hours</b>



1. Listening and Speaking -Giving and following instructions -Asking for and giving directions -Continuing discussions with connecting ideas										
2. Reading and writing -Reading feature articles (from newspapers and magazines) -Reading to identify point of view and perspective (opinion pieces, editorials etc.) -Descriptive writing – writing a short descriptive essay of two to three paragraphs.										
3. Grammar in Context:-Involving Action :Verbals - Gerund, Participle, Infinitive • Modals										
`										
<b>Unit:4</b>		-							<b>16 hours</b>	
1. Listening and Speaking- a. Giving and responding to opinions										
2. Reading and writing a. Note taking b. Narrative writing – writing narrative essays of two to three paragraphs										
3. Grammar in Context: Tense • Present • Past • Future										
<b>Unit:5</b>									<b>18 hours</b>	
1. Listening and Speaking										
a. Participating in a Group Discussion										
2. Reading and writing -										
Reading diagrammatic information - interpretations maps, graphs and pie charts - Writing shortessays using the language of comparison and contrast										
3. Grammar in Context:										
Voice (showing the relationship between Tense and Voice)										
<b>Unit:6</b>		<b>Contemporary Issues</b>							<b>2 hours</b>	
		<b>Total Lecture hours</b>							<b>91 hours</b>	
<b>Text Book(s)</b>										
COMMUNICATIVE ENGLISH –TANSCHÉ										
<b>Reference Books</b>										
1										
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1 <a href="https://onlinecourses.nptel.ac.in/noc20_hs14/preview">https://onlinecourses.nptel.ac.in/noc20_hs14/preview</a>										
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha										
<b>COS</b>	<b>PO 1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO 1</b>	S	S	L	M	M	L	L	M	S	M
<b>CO 2</b>	L	S	S	S	M	M	M	M	L	M
<b>CO 3</b>	M	S	S	M	S	S	M	L	M	M
<b>CO 4</b>	M	M	S	S	S	S	S	L	M	S
<b>CO 5</b>	S	S	M	S	S	S	S	L	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>22E</b>	<b>PART II – ENGLISH-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Part II English II</b>		<b>COMMUNICATIVE ENGLISH</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>BASIC INTELLIGENCE ON WRITING</b>	<b>Syllabus Version</b>		2022-2023	
<b>Course Objectives:</b>						
The main objective of this course is to:						
1. To train the students to develop the communication skills and inculcate language skills.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand basic grammar and enrich word power and language skill					K1, K2
2	Enhance the writing skill of the students to write flawlessly					K3
3	Write paragraphs, emails, letters, opinion pieces and dramatic scripts					K4
4	Enhance understanding various formal and informal, written and oral communications and respond to them					K5
5	Generate the own writing.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>					<b>18 hours</b>	
1. Listening and Speaking a. Listening and responding to complaints (formal situation) b. Listening to problems and offering solutions (informal)						
2. Reading and writing a. Reading aloud (brief motivational anecdotes) b. Writing a paragraph on a proverbial expression/motivational idea.						
3. Word Power/Vocabulary a. Synonyms & Antonyms						
4. Grammar in Context a. Adverbs b. Prepositions						
<b>Unit:2</b>					<b>20 hours</b>	
1. Listening and Speaking a. Listening to famous speeches and poems b. Making short speeches- Formal: welcome speech and vote of thanks. Informal occasions- Farewell party, graduation speech						
2. Reading and Writing a. Writing opinion pieces (could be on travel, food, film / book reviews or on any contemporary topic) b. Reading poetry b.i. Reading aloud: (Intonation and Voice Modulation) b.ii. Identifying and using figures of speech - simile, metaphor, personification etc.						
3. Word Power a. Idioms & Phrases						
4. Grammar in Context a. Conjunctions and Interjections						
<b>Unit:3</b>					<b>18 hours</b>	
1. Listening and Speaking a. Listening to Ted talks b. Making short presentations – Formal presentation with PPT, analytical presentation of graphs and reports of multiple kinds c. Interactions during and after the presentations						
2. Reading and writing a. Writing emails of complaint b. Reading aloud famous speeches						

3. Word Power		
a. One Word Substitution		
4. Grammar in Context		
a. Sentence Patterns		
<b>Unit:4</b>		<b>16 hours</b>
1. Listening and Speaking		
a. Participating in a meeting: face to face and online b. Listening with courtesy and adding ideas and giving opinions during the meeting and making concluding remarks.		
2. Reading and Writing		
a. Reading visual texts – advertisements b. Preparing first drafts of short assignments		
3. Word Power		
a. Denotation and Connotation		
4. Grammar in Context:		
a. Sentence Types		
<b>Unit:5</b>		<b>18 hours</b>
1. Listening and Speaking		
a. Informal interview for feature writing b. Listening and responding to questions at a formal interview		
2. Reading and Writing		
a. Writing letters of application b. Readers’ Theatre (Script Reading) c. Dramatizing everyday situations/social issues through skits. (writing scripts and performing)		
3. Word Power		
a. Collocation		
4. Grammar in Context		
a. Working with Clauses		
		<b>Total Lecture hours</b>
		<b>90 hours</b>
<b>Text Book(s)</b>		
1	COMMUNICATIVE ENGLISH –TANSCHÉ	
<b>Reference Books</b>		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.coursera.org/specializations/academic-english">https://www.coursera.org/specializations/academic-english</a>	
2	<a href="https://inhomeandsecurity.com/writing-thinking-intelligence-analysts/">https://inhomeandsecurity.com/writing-thinking-intelligence-analysts/</a>	
Course Designed by: Dr. N. Bhuvana & Dr. R. Amudha		

COS	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	S	S	L	M	M	L	L	M	S	M
CO 2	L	S	S	S	M	M	M	M	L	M
CO 3	M	S	S	M	S	S	M	L	M	M
CO 4	M	M	S	S	S	S	S	L	M	S
CO 5	S	S	M	S	S	S	S	L	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>32E</b>	<b>PART II – ENGLISH-III</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Part II English III</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>EXPRESS IDEAS IN SIMPLE ENGLISH</b>	<b>Syllabus version</b>	2022-2023			
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To evolve students intellectual, personal and professional abilities.</li> <li>2. To develop interest in reading.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Enhance the reading skill of the students.					K1
2	Understand the essence of literature.					K2
3	Improve the writing skills and present ideas appropriately					K3
4	Comprehend and interpret the text.					K4
5	Comment on the literary works efficiently.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>POETRY</b>					<b>15 hours</b>
<ol style="list-style-type: none"> <li>1. Ulysses – Alfred Tennyson</li> <li>2. Captain! My Captain! – Walt Whitman</li> <li>3. The Unknown Citizen –W.H.Auden.</li> </ol>						
<b>Unit:2</b>	<b>PROSE</b>					<b>15 hours</b>
<ol style="list-style-type: none"> <li>1. Sweet for Angels –R.K. Narayan</li> <li>2. My Lost Dollar – Stephen Leacock</li> <li>3. The Loss of the Titanic – Lawrence Beesley</li> </ol>						
<b>Unit:3</b>	<b>SHORT STORIES</b>					<b>15 hours</b>
<ol style="list-style-type: none"> <li>1. Orpheus and Eurydice – Rev.G.W.Cox</li> <li>2. At the Church Door – Guy De Maupassant</li> <li>3. How much Land does a Man need? – Leo Tolstoy</li> </ol>						
<b>Unit:4</b>	<b>AUTOBIOGRAPHY</b>					<b>15 hours</b>
<ol style="list-style-type: none"> <li>1. My Experiments with Truth -M.K. Gandhi</li> <li>2. I am Malala – Malala</li> </ol>						
<b>Unit:5</b>	<b>GRAMMAR AND COMPOSITION</b>					<b>13 hours</b>
<ol style="list-style-type: none"> <li>1. Modals</li> <li>2. Concord</li> <li>3. Dialogue Writing</li> <li>4. E-Mail</li> <li>5. Report Writing</li> </ol>						
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>

<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Dew drops- Publishers: New Century Book House(p)Ltd.,	
<b>Reference Books</b>		
1	High school English Grammar and composition by WREN & MARTIN	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.fluentu.com/blog/english/english-writing-practice/">https://www.fluentu.com/blog/english/english-writing-practice/</a>	
2	<a href="https://www.readandspell.com/how-to-improve-writing-skills-in-English">https://www.readandspell.com/how-to-improve-writing-skills-in-English</a>	
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha		

<b>Mapping with Programme Outcomes</b>										
<b>COS</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	M	S	S	S	S	S	S	L
<b>CO2</b>	L	S	S	S	S	S	S	S	S	S
<b>CO3</b>	M	S	S	S	S	S	S	S	S	S
<b>CO4</b>	M	M	S	S	S	S	S	S	S	S
<b>CO5</b>	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>42E</b>	<b>PART II – ENGLISH-IV</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Part II English IV</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Knowledge on basic English Skills		<b>Syllabus Version</b>			2022-2023
<b>Course Objectives:</b>						
The main objective of this course is to:						
1. Enable the students to incorporate the language skills (Listening, speaking, reading & writing) in day today conversations.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Understand the literary texts through listening and reading				K1, K2	
2	Enhance the language skills of the students.				K3	
3	Develop the verbal ability & reasoning or influence of language.				K3	
4	Analyse the texts and appreciate literature with literary competence.				K4	
5	To assess the view of the authors.				K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>POETRY</b>				<b>15 hours</b>	
<ol style="list-style-type: none"> <li>1. The Bird Sanctuary – Sarojini Naidu</li> <li>2. Meeting at Night – Robert Browning</li> <li>3. A Different History – Sujatha Bhatt</li> </ol>						
<b>Unit:2</b>	<b>PROSE</b>				<b>15 Hours</b>	
<ol style="list-style-type: none"> <li>1. Fusion Music – Ravi Shankar</li> <li>2. The Sea – Robert Lynd</li> <li>3. Unity of Minds – A.P.J. Abdul Kalam</li> </ol>						
<b>Unit:3</b>	<b>SHORT STORIES</b>				<b>15 Hours</b>	
<ol style="list-style-type: none"> <li>1. He Boy who broke the Bank – Ruskin Bond</li> <li>2. The Blue Bouquet – Octavio Paz</li> <li>3. Happy Prince – Oscar Wilde</li> </ol>						
<b>Unit:4</b>	<b>WORLD RENOWNED SPEECHES</b>				<b>15hours</b>	
<ol style="list-style-type: none"> <li>1. Noble Prize Acceptance Speech – Toni Morrison</li> <li>2. Chicago Address – Swami Vivekanandha</li> </ol>						
<b>Unit:5</b>	<b>GRAMMAR AND COMPOSITION</b>				<b>13 hours</b>	
<ol style="list-style-type: none"> <li>1. Clauses – Conditional, Relative, Restrictive, Non-Restrictive</li> <li>2. Notice</li> <li>3. Agenda</li> <li>4. Minutes</li> <li>5. Expansion of Ideas</li> <li>6. Precis Writing</li> </ol>						
<b>Unit:6</b>	<b>CONTEMPORARY ISSUES</b>				<b>2 hours</b>	

<b>Total Lecture hours</b>							<b>75hours</b>			
<b>Text Book(s)</b>										
1	DRIZZLE- Cambridge University Press									
<b>Reference Books</b>										
1	High school English Grammar and composition by WREN & MARTIN									
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>										
1	<a href="https://learnenglish.britishcouncil.org/skills">https://learnenglish.britishcouncil.org/skills</a>									
2	<a href="https://www.fluentu.com/blog/english/easy-english-lessons/">https://www.fluentu.com/blog/english/easy-english-lessons/</a>									
Course Designed By: Dr. N. Bhuvana & Dr. R. Amudha										
<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO 1</b>	L	M	M	S	S	S	S	S	S	L
<b>CO 2</b>	L	S	S	S	S	S	S	S	S	S
<b>CO 3</b>	M	S	S	S	S	S	S	S	S	S
<b>CO 4</b>	M	M	S	S	S	S	S	S	S	S
<b>CO 5</b>	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

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**QUESTION PAPER PATTERN – Maximum 50 Marks:**

**Section A – 10 Marks**

**Ten objective type questions from all units (10 X 1 = 10)**

**Section B – 15 Marks**

**Five either or type questions of 5 marks each from all units. (5 X 3 = 15)**

**Section C – 25 Marks**

**Five either or type questions from all units (5 X 5 = 25)**



**B. A. ECONOMICS**

**Syllabus  
(With Effect from 2022)**

**Program Code: 3AB**

FAITH IS THE SUN OF LIFE

**PROVIDENCE COLLEGE FOR WOMEN (AUTONOMOUS), COONOOR**

**B.A., Economics (CBCS PATTERN)**

*(For the students admitted from the academic year 2022 – 23 onwards)*

**Scheme of Examination**

Part	Title of the Course	Hours / Week	Examination				Credits
			Duration in Hours	Maximum Marks			
				CIA	CEE	Total	
<b>Semester I</b>							
I	Language - I	6	3	50	50	100	4
II	English - I	6	3	50	50	100	4
III	Core Paper I -Micro Economics–1	5	3	50	50	100	4
III	Core Paper II -Agricultural Economics	5	3	50	50	100	4
III	Allied A: Paper I - <b>Women Studies</b> /History Of India From1600 To1857 AD	6	3	30	45	75	3
IV	Environmental Studies*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>230</b>	<b>295</b>	<b>525</b>	<b>21</b>
<b>Semester II</b>							
I	Language – II	6	3	50	50	100	4
II	English – II	6	3	50	50	100	4
III	Core Paper III-Micro Economics –II	5	3	50	50	100	4
III	Core Paper - IV-History Of Economic Doctrine	5	3	50	50	100	4
III	Allied A: Paper II <b>Journalism and Mass Communication</b> / History Of India From 1858 To 1964 /	6	3	30	45	75	3
IV	Value Education – Human Rights*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>230</b>	<b>295</b>	<b>525</b>	<b>21</b>
<b>Semester III</b>							
I	Language – III	6	3	50	50	100	4
II	English – III	6	3	50	50	100	4
III	Core Paper V-MacroEconomics-I	5	3	50	50	100	4
III	Core Paper VI-Statistical Methods	5	3	50	50	100	4
III	Allied B: <b>Professional Accounting-I/ Business Management</b>	4	3	50	50	100	4
IV	Skill based Subject: <b>Banking for Competitive examination</b>	2	3	30	45	75	3
IV	Tamil** / Advanced Tamil* (OR) Non-major elective - I (Yoga for Human Excellence)* / Women's Rights*	2	3	-	50	50	2

	<b>Total</b>	<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>	<b>25</b>
<b>Semester IV</b>							
I	Language – IV	6	3	50	50	100	4
II	English – IV	6	3	50	50	100	4
III	Core Paper VII-Macro Economics-II	4	3	50	50	100	4
III	Core Paper-VIII-Mathematical Economics	5	3	50	50	100	4
III	Allied B: <b>Professional Accounting-II/ Organizational Behaviour</b>	4	3	50	50	100	4
IV	Skill Based Subject 2: <b>Soft skills for effective Business Communication</b>	3	3	30	45	75	3
IV	Tamil**/Advanced Tamil* (OR) Non-major elective -II (General Awareness*)	2	3	-	50	50	2
	<b>Total</b>	<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>	<b>25</b>
<b>Semester V</b>							
III	Core Paper IX-Monetary Economics	6	3	50	50	100	4
III	Core Paper X-Indian Economic Development And Policies	6	3	50	50	100	4
III	Core Paper XI-International Economics	5	3	50	50	100	4
III	Core Paper XII-- Entrepreneurship Development	5	3	50	50	100	4
III	Elective I - <b>Urban Economics / Basic Econometrics</b>	5	3	50	50	100	4
IV	Skill based Subject 3: <b>Aptitude and Logical Reasoning</b>	3	3	30	45	75	3
	<b>Total</b>	<b>30</b>		<b>280</b>	<b>295</b>	<b>575</b>	<b>23</b>
<b>Semester VI</b>							
III	Core Paper XIII- Fiscal Economics	6	3	50	50	100	4
III	Core Paper XVI-Industrial Economics	6	3	50	50	100	4
III	Core Paper XV-Environmental Economics	5	3	50	50	100	4
III	Elective II - <b>Rural Economics/ Behavioural Economics</b>	5	3	50	50	100	4
III	Elective III - <b>Transport Economics/ Financial Economics</b>	5	3	50	50	100	4
IV	Skill based Subject 4: <b>Computer System</b>	2	3	25	25	50	2
IV	<b>Practical</b>	1	3	10	15	25	1
V	Institutional Training/Project work/field work /Related to Economics**			50	-	50	2
	<b>Total</b>	<b>30</b>		<b>335</b>	<b>290</b>	<b>625</b>	<b>25</b>
	<b>Grand Total</b>	<b>180</b>		<b>1635</b>	<b>1865</b>	<b>3500</b>	<b>140</b>

<b>List of Elective papers (Students can choose any one of the paper as electives)</b>		
Elective – I	<b>A</b>	<b>Urban Economics</b>
	<b>B</b>	<b>Basic Econometrics</b>
Elective – II	<b>A</b>	<b>Rural Economics</b>
	<b>B</b>	<b>Behavioural Economics</b>
	<b>A</b>	<b>Transport Economics</b>
	<b>B</b>	<b>Financial Economics</b>



FAITH IS THE SUN OF LIFE

### **Programme Educational Objectives (PEO)**

- PEO 1: Creating strong subject knowledge in Economics to develop and uplift the Society.
- PEO 2: Applying Economic theories and make the students to understand the practical knowledge on present Economic System.
- PEO 3: Creation of continuous improvement in their professional career through life long learning appreciating human Values and Ethics.

### **PROGRAMME OUTCOME (PO) FOR UNDER GRADUATE DEGREE IN ECONOMICS**

- PO 1:** Creation of knowledge in fundamentals of Economics, application of Economics with the help of Mathematics, Statistics and Computer Applications is a strong foundation for UG Students.
- PO 2:** Train the students to understand the concepts and theories in Economics to practical problems solving in the realworld.
- PO 3:** Decision making and evaluate the solutions for useful complex economic issues and train the students to meet the specified needs to resolve complex economic problems.
- PO 4:** Train the students in Industrial, Agricultural and Service sector economics. This will be helpful for them to get into the concern sector for their Job Oriented goals.
- PO 5:** Create knowledge and select the issues to adopt the techniques to understand resource allocation and Macro Economic policies in Indian Economy.
- PO 6:** By way of getting complete knowledge in Economics may helpful for them to commit for the professional Ethics and responsibilities taken by them in their professional Career.
- PO 7:** Students of undergraduate in Economics are practiced for Basic knowledge in Economics, Mathematics, Statistics and Accountancy. This type of getting knowledge may helpful to students to clear any kind of basic Competitive Examinations.
- PO 8:** Knowledge in Economics and creation of domain knowledge will be effectively served to the students to understand the Society, Societal complex problems and for attainment of Comprehensive Solutions.



# **I SEMESTER**

FAITH IS THE SUN OF LIFE

**PROVIDENCE COLLEGE FOR WOMEN (AUTONOMOUS)**  
**B.A Economics Curriculum**  
*(For the students admitted during the academic year 2022 – 23 onwards)*

Course code	MICRO ECONOMICS-I			L	T	P	C
Core/Elective/Supportive	CORE PAPER – I			5			4
Pre-requisite	The course attempts to equip the students with the basic tools and methods of economic analysis.			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	Understand the concepts, methodology and the behaviour of the economic agents as a consumer and a producer.						
2	Enlighten the students about the economic objectives.						
3	To understand the fundamental concepts and theories of Microeconomics.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To improve the knowledge of students on the basics of Micro Economics					K1	
2	To analyze the economic relationship between the variables.					K2	
3	To enhance the skills of students in the measurement of variables and relationship.					K3	
4	To improve the attitude of students towards economic laws.					K4	
5	To generate an interest in the application of economics for business decision, planning and forecasting.					K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							
<b>Unit:1</b>	<b>Definitions and Basic concepts</b>					<b>15 -- hours</b>	
Definition of Economics - Adam Smith - Marshall - Robbins - Samuelson - Micro and Macro approach - Inductive and deductive methods - positive vs Normative study - static and dynamic analysis - Economic laws - partial vs General Equilibrium							
<b>Unit:2</b>	<b>Basic laws of Economics</b>					<b>15-- hours</b>	
Theory of consumer behaviour - Cardinal Utility - Ordinal Utility - Law of diminishing Marginal Utility - Law of Equi Marginal Utility - Law of Demand - Indifference curve analysis - Features of indifference curve - Consumer's Equilibrium - Income, price and substitution effects.							
<b>Unit:3</b>	<b>Elasticity of Demand</b>					<b>14-- hours</b>	
Elasticity of demand - Types and Degrees - Measurement - Factors influencing elasticity of demand - uses - consumer's surplus							
<b>Unit:4</b>	<b>Factors of production</b>					<b>16-- hours</b>	
Factors of Production - Land, Labour, Capital and Organization - Laws of returns - Law of variable proportions.							
<b>Unit:5</b>	<b>Cost and revenue concepts</b>					<b>15-- hours</b>	

Cost and Revenue - concepts of cost and revenue - Average, Marginal and Total cost - Nature of short run and long run average cost curves - Revenue; Total Revenue - Importance of revenue curves

**Total Lecture hours**

**75 –hours**

**Text Book(s)**

1. M.L. Jhingan, Micro Economic Theory, Vrinda Publications Ltd., New Delhi, 2019.
2. Dr. S. Sankaran, Micro Economics, Margham Publications, Chennai, 2017

**Reference Books**

1. HL AHUJA (2009) Advanced Economic Theory, S.Chand & Co
2. Misra and Puri, Advanced Micro Economics Himalaya Publishing House, Mumbai, 2021.
3. V. Lokanathan, Principles of Economics, Economic Analysis S. Chand & Co., New Delhi 2003.
4. Koutsoyannis (2003), Micro Economics, Pearson Publication

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	M	M	M	M	M	S	S
CO2	S	S	M	S	M	S	S	M
CO3	S	S	M	S	M	M	S	S
CO4	S	S	M	M	M	M	M	M
CO5	M	S	M	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	AGRICULTURAL ECONOMICS				L	T	P	C
Core/Elective/Supportive	CORE PAPER – II				5			4
Pre-requisite	This subject is mainly educating the students on Indian agriculture and Micro Economics concepts				Syllabus Version	2022-2023		
<b>Course Objectives:</b>								
The main objectives of this course are:								
1	Make the students to understand the Indian Agriculture							
2	To understand the role of Institutional agencies for Agricultural credit							
3	To know about agriculture policy in India							
4	To equip the students with the knowledge regarding the relationship between Agricultural economy and Indian economy							
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able:								





CO3	M	S	S	M	S	S	S	M
CO4	M	S	S	S	S	S	S	S
CO5	M	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>WOMEN STUDIES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>ALLIED PAPER – III</b>	<b>6</b>			<b>3</b>
<b>Pre-requisite</b>	Imparting knowledge on challenges of women		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To give overview of the academic discipline of women's studies and its genesis.					
2	To familiarize students about the various challenges, issues faced by today's women and female children.					
3	To empower students with key life skills for one's growth and improvement.					
4	To empower students with entrepreneurial skills.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To gain knowledge about the major concepts related to Gender					K1
2	To gain knowledge about issue related to female children					K2
3	To achieve entrepreneurial skills among women					K3
4	To understand several key life skills for one's improvement and growth					K4
5	To make them celebrate femininity.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>General Challenges For Today's Women</b>				<b>18 -- hours</b>	
Domestic Abuse (Green Magic); Women in Professional Life (I can); Debate over Reproductive Issues (Lost and Found); Lack of Mental Strength (Let's Co-Exist); Lack of Persistent Nature (Hold On!)						
<b>Unit:2</b>	<b>Women Entrepreneurial Qualities</b>				<b>18-- hours</b>	
Vision (Art Chain); Patience (Drop It!); Assertiveness (Thank God Its Friday); Humanness (Business As Usual); Professionalism (Yours Authentically); Power Dressing (Power Dressing)						
<b>Unit:3</b>	<b>Qualities Of A Successful Women</b>				<b>18-- hours</b>	
Self-Time (Just Me); Striving for Excellence (Am I Worth It); Good Learner (Back to School); Constructive Criticism (Just Describe);						
<b>Unit:4</b>	<b>Celebrating Femininity</b>				<b>18-- hours</b>	
Motherhood (Infertility Unhurt); Empathy (The Support System); Vulnerability (Let's Face It!); Celebrating Feminine Energy (I am He.. He is Me); Love (Grand's Day Out);						
<b>Unit:5</b>	<b>Resilience</b>				<b>18-- hours</b>	

Resilience (Never Alone); Living the Moment (This Moment Matters)		
		<b>Total Lecture hours</b>
		<b>90 –hours</b>
<b>Text Book(s)</b>		
1.	NEVER ALONE –A Self Help Book Authored by Gayathri and Ram, Big Foot Publications	
<b>Reference Books</b>		
1.	Self-love for Women: Release Self-doubt, Build Self-compassion, and Embrace Who You Are – Authored by: Megan Logan	
2.	I Am That Girl: How to Speak Your Truth, Discover Your Purpose, and #bethatgirl - Authored by: Alexis Jones	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
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Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	S	M	S	S	S	S
CO2	S	M	M	M	S	S	S	S
CO3	M	S	S	S	M	M	S	M
CO4	M	S	S	S	S	M	M	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>History of India 1600 – 1857 AD.</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>ALLIED PAPER – I</b>	<b>6</b>			<b>3</b>
<b>Pre-requisite</b>	Basic knowledge in Indian History at School level.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b> The main objectives of this course are:						
1	Trace the establishment of British power in Bengal.					
2	Acquaint the students about the contribution of Warren Hasting’s Administrative reforms in British India.					
3	Make the students to know about the British imperialistic policy in India					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	Remember the British Administrators and their reforms.					K1
2	Understand the colonial wars and their impact.					K2
3	Apply the constitutional provisions to understand the present political developments.					K3
4	Analyze the role of Dalhousie in modernization in India.					K4
5	Evaluate the social reforms and changes in Indian society.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						

<b>Unit:1</b>	<b>Advent of Europeans</b>	<b>18 -- hours</b>
Coming of the Europeans: Portuguese – French East India Company – British East India Company.		
<b>Unit:2</b>	<b>Rise of kingdoms and Religion</b>	<b>18-- hours</b>
Anglo – French Rivalry: Carnatic – wars. Establishment of British power in Bengal – Battle of Plassey, 1757, Battle of Buxar, 1764.		
<b>Unit:3</b>	<b>Warren Hastings Administration</b>	<b>18-- hours</b>
Warren Hastings – Cornwallis – Wellesley – Bentinck.		
<b>Unit:4</b>	<b>Colonial Administration</b>	<b>18-- hours</b>
Dalhousie – Revolt of 1857 - Queen’s Proclamation		
<b>Unit:5</b>	<b>Regulating Act</b>	<b>18-- hours</b>
Constitutional Development : Regulating Act, 1773 – Pitt’s India Act, 1784, Charter Act of 1833 and 1853		
	<b>Total Lecture hours</b>	<b>90 hours</b>
<b>Text Book(s)</b>		
1.	Hans Raj, History of Ancient India, Surjeet Publications, Delhi, 1985.	
2.	Ramalingam T.S., History of India upto 1206 AD, TSR Publications, 1982.	
3.	Sathyanatha Iyer R., History of India Vol. I.	
<b>Reference Books</b>		
1.	Basham A.L., <i>The Wonder that was India</i> , Macmillan, India 2004.	
2.	Kundra, <i>History of India</i> , Kamal Arora Publishers, New Delhi, 1997	
3.	Mahajan V.D. <i>History of Ancient India</i> , S. Chand Publishing, 2016.	
4.	Majumdar R.C., Dutta K. K. and Roy Choudry - <i>Advanced History of India</i> , Macmillan India Ltd, Madras, 1985.	
5.	Neelakanda Sasthri K.A., <i>History of South India</i> , Oxford, 1997.	
6.	Phalaksha, <i>History of Ancient Period Vol-1</i> , Shahshi Prakashana, 2013	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
<a href="https://www.youtube.com/watch?v=NFczNHrbXB0">https://www.youtube.com/watch?v=NFczNHrbXB0</a>		
<a href="https://www.youtube.com/watch?v=W8Lc2-RYGNc">https://www.youtube.com/watch?v=W8Lc2-RYGNc</a>		
<a href="https://www.jagranjosh.com/general-knowledge/the-harshavardhana-era-1437388149-1">https://www.jagranjosh.com/general-knowledge/the-harshavardhana-era-1437388149-1</a>		

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	S	S	M	S
CO2	S	S	M	S	M	S	S	M	M
CO3	S	S	S	S	M	M	M	S	S
CO4	S	S	M	S	M	S	M	M	M
CO5	S	S	M	S	S	M	M	S	S

\*S-Strong; M-Medium; L-Low



# **II SEMESTER**

FAITH IS THE SUN OF LIFE

Course code	MICRO ECONOMICS-II			L	T	P	C
Core/Elective/Supportive	CORE PAPER III			5			4
Pre-requisite	The course aims at equipping the students with the tools of economic analysis to deal with different types of market.			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are:							
1	Imparting knowledge about the behaviour of economic agents namely producer and factor owner.						
2	Understanding and analysing the theories of different factors and determining their prices.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To improve the knowledge of students on the markets and competition.						K1
2	To analyze the business decision process.						K2
3	To improve the skill of students in the findings of market equilibrium						K3
4	To motivate the students improving their attitude towards the logics of factor pricing.						K4
5	To enhance the applicability of ideas and concepts						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>							
<b>Unit:1</b>	<b>Market Structure</b>					<b>15 -- hours</b>	
Market Structure - Meaning - Types - Perfect Competition - Time Element Theory - Price and Output Determination - Equilibrium of the firm and industry in short and long run.							
<b>Unit:2</b>	<b>Monopoly</b>					<b>15-- hours</b>	
Monopoly - Discriminating Monopoly - Degrees of Monopoly - Price and Output determination under Monopoly and discriminating monopoly.							
<b>Unit:3</b>	<b>Monopolistic competition</b>					<b>15-- hours</b>	
Features of Monopolistic Competition - Selling cost - wastes of monopolistic competition - Oligopoly.							
<b>Unit:4</b>	<b>Theories of Factor pricing</b>					<b>15-- hours</b>	
The theories of factor pricing - Marginal Productivity Theory - Rent - Ricardian Theory of Rent - Wages - Real and Nominal Wages - Theories of Wages.							
<b>Unit:5</b>	<b>Interest and Profit</b>					<b>15-- hours</b>	
Interest - Gross Interest and Net Interest - Classical - Neo - Classical and Keynesian Theory of Interest - Profit - Gross and Net Profit - Theories of Profit.							
					<b>Total Lecture hours</b>	<b>75 –hours</b>	
<b>Text Book(s)</b>							
1	M.L. Jhingan - Micro Economic Theory, Vrinda Publications Ltd., New Delhi 2002.						
2	H.L. Ahuja - Principles of Micro Economics, A new look at Economic Theory S. Chand & Company Ltd., New Delhi (1996)						

Reference Books	
1	Dr. S. Sankaran- Micro Economics, Margham Publications, Madras 1990
2	Misra and Puri- Advanced Micro Economics Himalaya Publishing House, Mumbai 1996.
3	Loganathan.V - Principles of Economics, Economic Analysis, S.Chand& Co, New Delhi, 2003.
4	Watson - Price Theory and its uses
5	Stonier and Hague - A textbook of Economic Theory.

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	M	S	M	S	M	M	M	M
CO3	S	S	S	M	M	M	S	S
CO4	M	M	M	M	M	M	S	M
CO5	S	M	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b>HISTORY OF ECONOMIC DOCTRINE</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core/Elective/Supportive		<b>CORE PAPER- IV</b>	<b>5</b>			<b>4</b>
Pre-requisite	The core paper deals with the basic knowledge and ideas of economists and philosophers views.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To understand the basic ideas of different economist and philosophers concept.					
2	To familiarize the students to learn the origin and development of economic ideas from various thoughts.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To create knowledge on the evaluation of economic ideas.					K1
2	To increase a positive attitude towards economic ideas.					K2
3	To make the analytical interest in the Marxian Economics.					K3
4	To understand the application of economic theories.					K4
5	To enhance the applicability of ideas and concepts					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>Ancient Economic Thought</b>				<b>15 -- hours</b>	
Introduction – Ancient Economic Thought –The Greek. Plato – Aristotle – The Roman – Kautilya’sArthasastra – Thiruvalluvar.						
<b>Unit:2</b>	<b>Medieval Economic Thought</b>				<b>15-- hours</b>	

Medieval Economic Thought – St. Thomas Aquinas- Mercantilism- Thomas Mun- Physiocrates– Classical Thoughts.		
<b>Unit:3</b>	<b>Marxian philosophy</b>	<b>15-- hours</b>
Karl Marx- Marxian philosophy – Interpretation of History- Theory of Class Struggle – Theory of Value and Distribution - Theory of Surplus Value- Marxian Prediction - Scientific Socialism.		
<b>Unit:4</b>	<b>Economic ideas</b>	<b>15-- hours</b>
Alfred Marshal- J.B.Clark - J.B.Say - J.S.Mill - Irving Fisher - A.C.Pigou –Walras – Pareto - Their theories and Economic ideas.		
<b>Unit:5</b>	<b>Recent Economic Thought</b>	<b>15-- hours</b>
Recent Indian Economic Thought – Man Mohan Singh – Abhijit Banerjee – RaghuramRajan – ArvindSubramaniam-		
<b>Total Lecture hours</b>		<b>75–hours</b>
<b>Text Book(s)</b>		
1	K. Loganathan – A History Economic Thought	
2	B.W. Ganguli- Indian Economic Thought.	
<b>Reference Books</b>		
1	Alexander Gray- Development of Economic Doctorines.	
2	Gide and Rist- Economic Thought	
3	Meenakshi and others- A History of Economic Doctorines.	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	M	M	M	M	S
CO2	S	S	M	M	M	M	M	M
CO3	M	M	S	M	S	M	M	S
CO4	S	S	M	M	M	M	M	M
CO5	S	S	S	M	S	M	M	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>HISTORY OF INDIA 1858 – 1964 AD</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>ALLIED PAPER – II</b>	<b>6</b>			<b>3</b>
<b>Pre-requisite</b>	<b>Elementary Knowledge of Indian History</b>	<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>					
The main objectives of this course are:					
1	Educate about the emergence of Indian Nationalism.				



2	Inculcate the knowledge about the values cherished in the freedom movement.	
3	Teach the role played by the freedom fighters against the alien rule.	
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able:		
1	Remember the historical events after Queen's Proclamation.	K1
2	Understand the factors responsible for emergence of Nationalism.	K2
3	Apply the principles of Ahimsa and Satyagraha.	K3
4	Evaluate the importance to Independence.	K4
5	Analyze the impact of Colonialism.	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		
<b>Unit:1</b>	<b>Viceroy</b>	<b>18 -- hours</b>
Lord Canning – Lord Lytton – Lord Ripon – Lord Curzon		
<b>Unit:2</b>	<b>Freedom Struggle</b>	<b>18-- hours</b>
Foundation of Indian National Congress – Moderates – Extremists – Home rule movement.		
<b>Unit:3</b>	<b>Gandhian Era</b>	<b>18-- hours</b>
Non – Co – operation movement – Civil Disobedience movement – Quit – India movement – NSC Bose and his INA.		
<b>Unit:4</b>	<b>Freedom fighters of Tamil nadu</b>	<b>18-- hours</b>
VOC – Rajaji – Subramania Siva, - E.V. Ramasamy – Social movement.		
<b>Unit:5</b>	<b>India since independence</b>	<b>18-- hours</b>
Nehru Era – Integration of Indian States, Tamilnadu under Kamaraj is Chief Minister ship.		
	<b>Total Lecture hours</b>	<b>90 –hours</b>
<b>Text Book(s)</b>		
1.	B. Krishnamurthy History of Tamil Nadu, Palayankottai.	
2.	G. Venkatesan History of Freedom Struggle in India.	
3.	Keswani.K. B.,HistoryofModernIndiafrom 1800A.D-1984A.D,Himalaya Publishing House,Bombay,1985.	
4.	Venkatesan G.,HistoryofFreedomStrugglesinIndia,RainbowPublication,Coimbatore, 1985.	
<b>Reference Books</b>		
1.	R.C. Majumdar Freedom Movement in India, Bharathiya Vidhya Bhavan Series, Bombay.	
2.	Rajapalayam, R.C. Agarwal Constitutional History of India and National Movement.	
3.	D.L. Joshi and S.V. Gholkar History of Modern India, 1800 to 1964.	
4.	Agarwal.R.C,ConstitutionalDevelopmentofIndiaandNationalMovement,S.Chand&Carnet,New Delhi,1986.	
5.	MahajanV.D., HistoryofNationalMovementinIndia,S.Chand&Carnet,NewDelhi,1985,Ed-III.	

6.	Majumdar R. C., An Advanced History of India Part III, MacMillan, 1988.
7.	Sathianathaier, History of India Vol. III, S. Viswanathan, Madras, 1969.
8.	Sharma S. R., Indian Movement 1857 A.D. – 1947 A.D., B.R. Publishing Corporation, Delhi, 1988, Ed-1.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
<a href="https://en.wikipedia.org/wiki/Indian_independence_movement#:~:text=The%20Indian%20Independence%20Movement%20was,Indian%20independence%20emerged%20from%20Bengal.">https://en.wikipedia.org/wiki/Indian_independence_movement#:~:text=The%20Indian%20Independence%20Movement%20was,Indian%20independence%20emerged%20from%20Bengal.</a>	
<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> Module: 33 to 40	
<a href="https://en.wikipedia.org/wiki/History_of_the_Indian_National_Congress">https://en.wikipedia.org/wiki/History_of_the_Indian_National_Congress</a>	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	S	M	S	M	S	M
CO2	S	S	M	S	M	S	M	M	S
CO3	S	S	S	S	M	S	S	S	S
CO4	S	S	S	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	JOURNALISM AND MASS COMMUNICATION			L	T	P	C
Core/Elective/Supportive	ALLIED PAPER - I			6			3
Pre-requisite	The content of the course aims at making the students to understand the nature of mass communication and the responsibilities and functions of press.			Syllabus Version		2022-2023	
<b>Course Objectives:</b> The main objectives of this course are:							
1	Understand the characteristics of communication.						
2	Imparting knowledge about the qualities of a reporter and newspaper management.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To understand the importance of mass communication						K1
2	To assess the importance of the Indian press						K2
3	To examine the sources of news and the importance of correspondents						K3
4	To evaluate the purpose of Editors						K4
5	To analyse the importance of newspaper management						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Mass Communication</b>			<b>18-- hours</b>			
Nature Scope and process of mass communication - Theories of mass Communication - SMCR model of communication - Types of Communication - Characteristics of Communication - Barriers - Mass media of Communication - Merits and Demerits.							
<b>Unit:2</b>	<b>Journalism</b>			<b>18-- hours</b>			

Journalism - History of Journalism - History of Indian Press - Responsibilities and functions of the press - News agencies - freedom of the press - various professional organizations - press council - press laws.		
<b>Unit:3</b>	<b>Sources of news</b>	<b>18-- hours</b>
News - Definition of news - Sources of news - Reporting - Qualities of a reporter - Routine beats of a reporter - Inverted pyramid style of reporting - lead - Definition and types - Crime reporting , Correspondents - Special Correspondents - District correspondents - Investigative reporting - writing for Radio and TV - Free lance Journalism.		
<b>Unit:4</b>	<b>Edition</b>	<b>18-- hours</b>
Editing - Edition writing - purpose of editions' - Headlines - definition - Functions and types - what is a copy - Sources of a copy - Sub-edition - Functions of Sub-editor - proof reader - Functions and symbols.		
<b>Unit:5</b>	<b>Newspaper Management</b>	<b>18-- hours</b>
Newspaper Management - various departments of a newspaper and their functions - Advertisement - circulation and Administration.		
<b>Total Lecture hours</b>		<b>90-hours</b>
<b>Text Book(s)</b>		
1	Theory and practice of Journalism - B.N.Ahuja, subject publications, New Delhi.	
2	Professional Journalism - M.V. Kawath, Vikas Publishing House.	
<b>Reference Books</b>		
1	News Reporting and Editing - K.M. Srivastava Sterling	
2	News Writing and Reporting - James M Neal & Suzanne S. Brown, Surjeet Publication	
3	Modern Newspaper practice - F.W. Hodgson Heinemann, London.	
4	Journalism in Modern India - Roland E. Wolsey	
5	The Indian Press - Dr. S.P. Sen	
6	The Press - M. Chalapathi Rao	
7	Truth about Indian Press - J.N. Sahni	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	S	M	S	M	S	M	S
CO2	M	M	S	S	M	S	M	S
CO3	M	S	S	S	S	S	M	S
CO4	M	S	S	M	S	S	M	S
CO5	S	M	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

# **III SEMESTER**

FAITH IS THE SUN OF LIFE

<b>Course code</b>		<b>MACRO ECONOMICS-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>CORE PAPER - V</b>		<b>4</b>			<b>4</b>
<b>Pre-requisite</b>	National income, theory of employment and consumption, saving and investment concepts		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	It helps the students to know about the basic concepts of Macro Economics.					
2	It also helps the students to apply macro principles to solve Macro Economic problems					
3	To Provide a strong foundation for the students to clarify the ideas of macro economics					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	Understand the evolution of Macro Economics and also know the difference between micro and macro economics.					K1
2	Examine the various concepts of National income Accounting and issues related to measurement of National income, and also develop an environmental concern in economic activities					K2
3	Comprehend the classical theory of output, employment and income and consumption function.					K3
4	Apply the knowledge to understand the Consumption function and theories of consumption function.					K4
5	Gain the knowledge about various concepts of investment, determinants of investment, role of MEC.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						
<b>Unit:1</b>	<b>Macro Economics</b>				<b>12 -- hours</b>	
Nature and Scope of Macro Economics– Origin and growth of Macro Economics- Importance - Limitations – Difference between Micro Economics and Macro Economics - Circular Flow of Income in various sector.						
<b>Unit:2</b>	<b>National Income</b>				<b>12-- hours</b>	
National Income: Meaning -Definition-Concepts and their interrelationship-methods of measuring National Income- Difficulties in the computation of National Income-Importance of National Income. Social Accounting – Importance and difficulties of Social Accounting.						
<b>Unit:3</b>	<b>Employment Theory</b>				<b>12-- hours</b>	
Employment: Classical theory of employment-Keynesian Theory of Employment-Say's Law of market -Effective demand-Determinants of effective demand						
<b>Unit:4</b>	<b>Consumption Function</b>				<b>12-- hours</b>	
Consumption function: Meaning -Properties -Keynes Psychological law of Consumption- Determinants of the consumption function- Theories of the consumption function: The Absolute Income Hypothesis – Relative Income Hypothesis – The Permanent Income hypothesis – Life Cycle Hypothesis.						

<b>Unit:5</b>	<b>Capital and Investment</b>						<b>12-- hours</b>	
Meaning of Capital and Investment: Types-Determinants of the Investment-Marginal Efficiency of Capital –Marginal efficiency of investment- Meaning of saving function – Determinants of Savings -Average Propensity to Save and Marginal Propensity to Save.								
						<b>Total Lecture hours</b>	<b>60–hours</b>	
<b>Text Book(s)</b>								
1	M.L. Jhinghan - Macro Economic Theory, Virnda Publications(P),New Delhi							
2	Sankaran S. - Macro Economics(2000), Margham Publications, Chennai							
<b>Reference Books</b>								
1.	Ahuja H.L - Macro Economic Theory and Policy(2000),-Advanced Analysis, S. Chand & Company Ltd, New Delhi.							
2.	Vaish M.C –Macro Economic Theory (2000),Wiley Eastern Limited, New Delhi.							
3.	Gupta G.S. - Macro Economics”, 3 <sup>rd</sup> Edition, Tata McGraw-Hill Publishing Company Ltd., New Delhi.(2008)							
4.	Seth M.L – Macro Economics”, Lakshmi Narain Agarwal Publishers, Agra.1993							
5.	Edward Shapiro , Macro Economic Analysis, Galgotia Publications, 2013							
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	S	S	S	M	S	S	M	S
<b>CO2</b>	S	M	S	S	M	S	S	S
<b>CO3</b>	S	M	S	S	M	M	S	S
<b>CO4</b>	S	S	M	M	S	M	S	M
<b>CO5</b>	S	S	S	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>STATISTICAL METHODS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>CORE PAPER –VI</b>	<b>5</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Essential Concepts of Statistics</b>	<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b> The main objectives of this course are:						
1	To enable the students to acquire knowledge on basic concepts of statistical methods relevant to economic problems.					
2	To provide the students with the theoretical and practical knowledge to do applies statistical methods.					
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:						
1	To get knowledge of method of collecting data.					K1
2	To understand the skill of draw the various diagram and graphical representation.					K2
3	To improve the analytical skill of measures of Central Tendency.					K3
4	To analyse the Correlation and Regression.					K4
5	To acquire the knowledge on index numbers.					K5

<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 – Evaluate</b>		
<b>Unit:1</b>	<b>Introduction to statistics</b>	<b>15–hours</b>
Introduction - Nature and Scope of statistics - Uses and Limitations of Statistics – Sources of Primary data and Sources of Secondary Data - Collection of Data - Methods of collecting Primary Data - Methods of Sampling.		
<b>Unit:2</b>	<b>Frequency Distribution</b>	<b>15—hours</b>
Classification and Tabulation of data - Frequency Distribution - Diagrammatic and Graphic representation of data - Importance - types - Pie diagram - Line graph - Histogram- Frequency curve - Frequency Polygon.		
<b>Unit:3</b>	<b>Measures of Central Tendency</b>	<b>15—hours</b>
Measures of Central Tendency: Mean, Median and Mode - Measures of Dispersion - Range - Inter - Quartile Range - Mean Deviation - Standard Deviation - Co-efficient of variation - Lorenz Curve - Skewness - Kurtosis - Moments.		
<b>Unit:4</b>	<b>Correlation and Regression</b>	<b>15—hours</b>
Correlation: Meaning - Types - Methods : Scatter Diagram - Karl Pearson's Co-efficient of correlation - Rank correlation - Regression lines –Method of Least Square		
<b>Unit:5</b>	<b>Index Numbers</b>	<b>15—hours</b>
Index Numbers : Definition - Simple and Weighted Index Numbers - Consumer Price Index Number- Tests for ideal index number - limitations of index numbers - Time series Analysis - components – Measurement of Trend Methods- Measurement of seasonal variations - Methods.		
Expert Lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 –hours</b>
<b>Text Book(s)</b>		
1	S.P. Gupta - Statistical Methods, Sultan Chand & Sons., New Delhi 1991.	
2	R.S.N. Pillai & Mrs. Bagavathi - Statistics S. Chand & Company Ltd., New Delhi 1997.	
<b>Reference Books</b>		
1	Sivathanupillai - Economics and Business Statistics – Progressive Corporation Pvt. Ltd., Bombay 1982.	
2	Elhance – Statistics	
3	Taro Yasmeen – Statistics	
<b>NOTE :</b> Question Papers must contain problems to the extent of 50% of the marks allotted to the subject.		

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	M	M	S	M	S	S	S	S

CO2	S	S	S	S	S	S	M	S
CO3	M	S	S	M	M	M	S	M
CO4	S	S	S	M	M	S	M	M
CO5	M	M	M	S	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	Professional Accounting - I				L	T	P	C
Core/Elective/Supportive	ALLIED PAPER- III				4			4
Pre-requisite	Basic knowledge on Accounts				Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:								
1	To make the students to understand the basic concepts of accounting procedures.							
2	To encourage the students to learn modern techniques in the accounting field.							
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:								
CO 1	To get basic knowledge of Accounting							K1
CO 2	To get knowledge of double entry system, Journals, Ledger and trial balance.							K2
CO 3	To understand the ideas of Cash book							K3
CO 4	To get application knowledge of preparing final accounts.							K2
CO 5	To enhance the application knowledge of Bank Reconciliation statement, Receipts and Payments account , income and expenditure account and Balance sheet							K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5– Evaluate</b>								
<b>Unit:1</b>					<b>12 -- hours</b>			
Meaning and Scope of Accounting- Branches of accounting; Objectives of accounting- Accounting Concepts and Conventions – Terms of Accounts.								
<b>Unit:2</b>					<b>12-- hours</b>			
Book-keeping and Accounting - Accounting Cycle; Journal; Rules of debit and credit; Compound journal entry- Relationships between Journal and Ledger; Rules regarding posting; Trial balance								
<b>Unit:3</b>					<b>12-- hours</b>			
Subsidiary books –Cash book-Voucher preparation- Day book- Purchase register- Sales register								
<b>Unit:4</b>					<b>12-- hours</b>			
Final Accounts: Trading account; Profit and loss account; Balance Sheet; Adjustment entries								
<b>Unit:5</b>					<b>12-- hours</b>			
Bank Reconciliation statement – Receipts and Payments and income and expenditure account and Balance sheet								
					<b>Total Lecture hours</b>		<b>60—hours</b>	
<b>Text Book(s)</b>								
1	N.Vinayakam, P.L.Mani, K.L.Nagarajan – Principles of Accountancy – S.Chand & Company Ltd.,							
2	M.C.Shukla – Financial Accounting – Sultan Chand & sons							



Reference Books	
1	S.K. Maheswari, T.S. Reddy , Advanced Accountancy, Vikas Publishers
2	P.C. Tulsian , Financial Accounting, Tata McGraw Hill Companies
3	R.L. Gupta and M.Radhaswamy, Advanced Accountancy, Sultan Chand and Sons.

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	S	M	S	S	M
CO2	S	S	S	S	M	M	S	M
CO3	S	S	S	S	S	S	M	M
CO4	S	S	S	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	BUSINESS MANAGEMENT FOR ECONOMICS			L	T	P	C
Core/Elective/Supportive	ALLIED PAPER –III			4			4
Pre-requisite	Imparting Knowledge of Business Management.			Syllabus Version	2022-2023		
<b>Course Objectives:</b>							
The main objectives of this course are:							
1	To Understand the principles of management.						
2	To Develop the skills of decision making, organizing and management of a business organization						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To get the knowledge of nature and functions of management.						K1
2	To acquire skill of various management planning.						K2
3	To know the forecasting techniques and decision making.						K3
4	To acquire knowledge of manpower planning, motivation theory and communication barriers and importance.						K4
5	To understand the importance of leadership in business scenario						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 – Evaluate</b>							
<b>Unit:1</b>	<b>Functions of Management</b>			<b>12–hours</b>			
Management - Nature and Functions of Management - Management as an Art - Science and Profession - Management and administration.							
<b>Unit:2</b>	<b>Scientific Management</b>			<b>12–hours</b>			

Scientific Management - Concept - Contribution of F.W. Taylor - Techniques of Scientific Management - Planning - Meaning - Features - Importance - Steps in Planning - Types of Planning - Tools of Planning - Objectives of an Organisation - Concept - Features - Hierarchy of Objectives - Management by Objectives.		
<b>Unit:3</b>	<b>Forecasting and Decision Making</b>	<b>12—hours</b>
Forecasting - Concept - Techniques - Decision Making Need - Types - Factors involved in Decision Making – De-centralization - Delegation of Authority - Span of Control.		
<b>Unit:4</b>	<b>Motivation and Communication</b>	<b>12—hours</b>
Staffing - Fundamentals of Staffing - Manpower Planning - Objectives and Problems - Source of Manpower supply - Selection Process - Motivation - Meaning - Maslow's theory of Motivation - Communication : Meaning - Importance - Forms of Communication - Formal and Informal Communication - Barriers to communication.		
<b>Unit:5</b>	<b>Leadership</b>	<b>12—hours</b>
Leadership - Definitions - Characteristics - Distinction between leadership and management - Importance of Leadership - Formal and Informal Leaders - Functions and qualities of a Good Leader.		
<b>Total Lecture hours</b>		<b>60 –hours</b>
<b>Text Book(s)</b>		
1	P.N. Reddy, Tripathy & Others Essentials of Management, Himalaya Publishing House, New Delhi, 1995.	
2	K. Natarajan, K.P. Ganesan, Principles of Management, Himalaya Publishing House, New Delhi, 1998.	
<b>Reference Books</b>		
1	L.M. Prasad, Principles and Practice of Management, Sultan & Sons., New Delhi, 1987.	
2	Dinkar Pagare, Business Management, S. Chand & Company, New Delhi, 1991.	
3	Dr. C.B. Gupta, Business Management, S. Chand & Sons., New Delhi, 2000.	
4	Lallan Prasad, S.S. Gulshan, Management - Principles & Practice, S. Chand & Company, New Delhi, 1991.	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	S	S	S	M	S	S
CO2	S	S	M	S	S	S	S	S
CO3	M	S	S	M	M	S	S	M
CO4	S	S	S	M	M	S	M	S
CO5	M	M	M	M	S	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>Economics for Competitive Examination</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Skill Enhancement Course</b>	<b>5</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Basic knowledge on Indian Economy</b>	<b>Syllabus Version</b>		<b>2022-2023</b>	
<b>Course Objectives:</b> The main objectives of this course are:						
1	To provide knowledge to the students on basic economic concepts and policies, which are frequently asked in competitive examinations.					
2	To train the students with updated information					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
CO1	Develop ideas of the basic characteristics of Indian economy, factors leading to economic growth and development.					
CO2	Analyze the causes, impact of population growth and relate them with economic development.					
CO 3	Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government.					
C04	Understand agriculture as the foundation of economic growth, analyse the progress and changing nature of agricultural sector and its contribution to the economy as a whole.					
C05	Aiming to give students basic knowledge and skills in industrial development and its policies.					
<b>Unit - I</b>						
<b>Unit - I</b>		<b>Introduction to Indian Economy</b>			<b>9 Hours</b>	
		Nature and characteristics of Indian Economy- Concepts- Features- Growth and Development Distinction- Factors inhibiting Economic Development.				
<b>Unit - II</b>		<b>Human Resource Development</b>			<b>9 Hours</b>	
		Human Resource Development and Economic Development- Population Growth-- Effects- Recent Population Policy- Unemployment- Types- Causes- Five Year Plans- Objectives- Achievements- Failure.				
<b>Unit - III</b>		<b>Agricultural Growth in India</b>			<b>9 Hours</b>	
		Agricultural Growth in India- Contribution of Agriculture to Economic Growth- Role of Agriculture- Causes for Low Productivity- Measures to increase productivity.				
<b>Unit- IV</b>		<b>Industrial Development</b>			<b>9 Hours</b>	
		Industrial Development - Industrial Policy Resolutions of 1948 - Industrial Policy 1956 - New Industrial Policy - Public Sector - Private Sector - Joint Sector - Industrial Sickness.				
<b>Unit- V</b>		<b>Foreign Trade</b>			<b>9 Hours</b>	
		Foreign Trade in India - Contribution - Foreign Trade Growth and Economic Growth - Export Promotion -				

	Import Substitution - Balance of Payments - Deficit Measures - GATT - WTO.	
	<b>Total Hours</b>	<b>45 Hours</b>
<b>Reference Books</b>		
1	Indian Economy - V.K. Bhalla	
2	Indian Economy - Dutt and Sundaram	
<b><u>E-Resources : (Web resources &amp; E-books)</u></b>		
1. <a href="http://www.amazon.in/Quick-Indian-Economy-Competitive-Exam-ebook/dp/B079GXLMG">http://www.amazon.in/Quick-Indian Economy-Competitive-Exam- ebook/dp/B079GXLMG</a>		

### Mapping of Course Outcome with Pos

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	H	M	M	M	M	M	M	M
CO 2	M	M	H	M	M	M	S	S
CO 3	H	M	H	M	H	M	M	M
CO 4	M	H	M	M	H	M	S	S
CO 5	M	H	S	H	M	H	M	N

FAITH IS THE SUN OF LIFE



# **IV SEMESTER**

FAITH IS THE SUN OF LIFE

<b>Course code</b>		<b>MACRO ECONOMICS – II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>CORE PAPER –VII</b>	<b>4</b>			<b>4</b>
<b>Pre-requisite</b>		<b>Overview of Macro Economic Issues and Analysis Aggregate Measures</b>	<b>Syllabus Version</b>	<b>2022-</b>	<b>2023</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To help the students to know about the basic concepts of Macro Economics.					
2	To make the students to understand different dimensions of Macro Economics with applications.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To Explain the principle of Multiplier and Accelerator, Super Multiplier.					K1
2	To Attain the knowledge in classical and Keynesian theories of income and employment.					K2
3	To Analyze the various phases of trade cycle and the theories of trade cycles.					K3
4	To Understand the working conditions of product and money market, Shift in IS and LM curves.					K4
5	To Explain the Economic role of monetary and fiscal policies in developing Economy.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 – Evaluate</b>						
<b>Unit:1</b>	<b>Multiplier and Accelerator</b>					<b>12–hours</b>
Multiplier and Accelerator: Definition – importance – working – Assumptions – Types – Leakages of the multiplier. Accelerator: Meaning – Significance – Limitations – Interaction of Multiplier and Accelerator, Super multiplier.						
<b>Unit:2</b>	<b>Savings and Investment equality</b>					<b>12–hours</b>
Savings and Investment equality: The Classical view – the Keynesian view – Robertsonian Approach – Swedish Approach view. The Keynesian theory of Income, Output and Employment.						
<b>Unit:3</b>	<b>Trade cycle</b>					<b>12–hours</b>
Trade cycle: Meaning – nature – types and phases of a Trade cycle. Theories of trade cycle- Keynesian of trade cycle. Schumpeter’s innovation theory –Hwatrey’s monetary theory-Hicks theory of trade cycle .						
<b>Unit:4</b>	<b>IS and LM functions</b>					<b>12–hours</b>
IS and LM functions: the product and money market Equilibrium – General Equilibrium of product and money market. Inflation- meaning – inflationary gap – Phillips curve – the relationship between unemployment and inflation.						
<b>Unit:5</b>	<b>Macro Economic policy</b>					<b>12–hours</b>
Macro Economic policy: Meaning-Targets- instruments, objectives of macroeconomic policy. Monetary Policy –Fiscal policy: meaning –the role of monetary and fiscal policy in a developing economy.						

	<b>Total Lecture hours</b>	<b>60 –hours</b>
<b>Text Book(s)</b>		
1	M .L. Jhinghan: Macro Economic Theory, Virnda Publications (P), New Delhi.	
2	Sankaran. S. Macro Economics, Margham Publications, Chennai.	
3	Cauvery and SudhaNayak and others , Macro Economics, S Chand Publications, 2015	
<b>Reference Books</b>		
2	Vaish M.C, Macro Economic Theory, Wiley Eastern Limited, New Delhi.	
3	Gupta G.S, Macro Economics, 3 <sup>rd</sup> Edition, Tata McGraw-Hill Publishing Company Ltd., New Delhi.	
4	Seth M.L, Macro Economics, Lakshmi Narain Agarwal Publishers, Agra.	

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	S	M	M	S	S	S	S	S
<b>CO2</b>	S	S	S	M	S	S	M	M
<b>CO3</b>	S	M	S	S	M	M	S	S
<b>CO4</b>	S	S	M	M	M	S	M	M
<b>CO5</b>	M	M	M	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>MATHEMATICAL ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>CORE PAPER – VIII</b>	<b>5</b>			<b>4</b>
<b>Pre-requisite</b>	The main aim of this subject is to inculcate basic mathematical knowledge and its application to economic concepts.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To help the students to know about the basic mathematical knowledge					
2	Make the students to understand the importance of mathematic tools in economics					
3	Providing elementary analysis of economic concepts					
4	To equip the students to know the application of mathematical techniques in economic theories					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To create the fundamental knowledge in Mathematics.					<b>K1</b>

2	To encourage the students to understand the concepts.	K2
3	To train the students in the analysis of economics issues.	K3
4	To help the students to calculate the changes in basic economic variables	K4
5	To prepare students in decision making .	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		
<b>Unit:1</b>	<b>Basic Mathematical Functions</b>	<b>15 -- hours</b>
Definition and Importance of Mathematical Methods - Rules of Differentiation - Linear equations - Quadratic equations - Logarithmic function.		
<b>Unit:2</b>	<b>Basic Economic Concepts</b>	<b>15-- hours</b>
Total, average and Marginal Revenues - Elasticity of Demand - Conditions for Profit Maximization - Partial Differentiation - Total Differential		
<b>Unit:3</b>	<b>Set Theory</b>	<b>15-- hours</b>
Notations of Set - Types of Sets - Venn diagram - Laws of set operations - Applications in Economics.		
<b>Unit:4</b>	<b>Matrix</b>	<b>15-- hours</b>
Matrix Addition and Subtraction - Matrix Multiplication - Determinants - Properties - Solution of simultaneous equation using Cramer's Rules.		
<b>Unit:5</b>	<b>Input- Output Analysis</b>	<b>15-- hours</b>
Input - Output Analysis - Technological co-efficient Matrix - Linear Programming - Graphical method.		
<b>Total Lecture hours</b>		<b>75 –hours</b>
<b>Text books</b>		
1	Mehta and Madnani - Mathematics for Economists, Sultan Chand & Sons, New Delhi - 2000.	
<b>Reference Books</b>		
2	Allen, R.G.D.- Mathematical Analysis for Economists, Macmillan, New York.	
3	Chiang, - Fundamentals of Mathematical Economics, Macmillan, New York.	
4	Stafford - Elementary Mathematics for Economics. SrinathBaruah, Basic Mathematics and its application in Economics - Macmilan India Ltd., Chennai –2001	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	S	M	M	M	M	S	M
CO2	S	S	S	S	S	S	S	S
CO3	M	S	S	M	S	S	S	M
CO4	M	S	S	S	S	S	S	S
CO5	M	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	Professional Accounting - II			L	T	P	C
Core/Elective/Supportive	ALLIED PAPER- III			4			4
Pre-requisite	Basic knowledge on Accounts			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To make the students to understand the basic concepts of accounting procedures.						
2	To encourage the students to learn modern techniques in the accounting field.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
CO 1	To get basic knowledge of Accounting Depreciation and the methods of Depreciation						K1
CO 2	To get knowledge of Single Entry and double entry system.						K2
CO 3	To understand the concepts of Goods and service Tax and the application of Billing of GST.						K3
CO 4	To get the application knowledge of Bill of Exchange.						K2
CO 5	To enhance the application knowledge of Accounting for Consignments and Joint Ventures						K2
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5– Evaluate</b>							
<b>Unit:1</b>						<b>12 -- hours</b>	
Accounting for Depreciation –Need for and Significance of depreciation, Methods of providing Depreciation- Reserves and Provision.							
<b>Unit:2</b>						<b>12-- hours</b>	
Single Entry - Meaning, Features, Defects, Differences between Single Entry and Double Entry System - Statement of Affairs Method - Conversion Method							
<b>Unit:3</b>						<b>12-- hours</b>	
Goods and Services Tax in India - Introduction–Concept of GST-- CGST- SGST- UTGST-IGST.-Tax invoice-GST Billings.GST Reports.							
<b>Unit:4</b>						<b>12-- hours</b>	
Bill of exchange- Accommodation bills – Average due date – Account current							
<b>Unit:5</b>						<b>12-- hours</b>	
Accounting for Consignments and Joint Ventures							
					<b>Total Lecture hours</b>	<b>60—hours</b>	
<b>Text Book(s)</b>							
1	Advanced Accountancy - R.L.Gupta & M.Radhasamy						
2	Goods and Service Tax in India, CA Pritham Mahure, Sultan Chand Publications 2017						
<b>Reference Books</b>							
1	Jain and Narang, Advanced Accountancy						
2	Shukla M C and T.S. Grewal , Advanced Accounts						
3	Mukherjee and Hanif , Modern Accountancy						

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	S	M	S	S	M

CO2	S	S	S	S	M	M	S	M
CO3	S	S	S	S	S	S	M	M
CO4	S	S	S	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>	<b>ORGANISATIONAL BEHAVIOUR</b>				L	T	P	C
<b>CORE/ALLIED/ELECTIVE</b>	<b>ALLIED-IV</b>				<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Understanding about the organizational behaviour and the process of management				<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>								
1. Make the students to understand basic concepts of Organizational behaviour. 2. To Provide the Knowledge to the students are prepared to deal with groups and for conflict identification and resolution.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
<b>CO 1</b>	Understand the individual and group behavior and the implications of Organizational behavior on the process of management						K2	
<b>CO 2</b>	Identify various theories of motivation from the past and to evaluate motivational strategies used in a variety of organizational settings						K1	
<b>CO 3</b>	Enhance productivity of the organization by ensuring required job satisfaction and employee attitude.						K3	
<b>CO 4</b>	Understand the supervisory effects on performance and to train supervisors by understanding different supervision styles.						K2	
<b>CO 5</b>	Evaluate the appropriateness of various leadership styles and counseling methods						K5	
K1-Remember;K2-Understand;K3-Apply;K4-Analyze;K5-Evaluate;K6–Create								
<b>Unit:1</b>	Organisational Psychology					12--hours		
Importance and scope of organizational Psychology – Individual differences- Intelligence tests Measurement of intelligence – Personality tests-nature, types and uses.								
<b>Unit:2</b>	Perception					12--hours		
Perception-Factors affecting perception-Motivation-theories-financial and non-financial motivation-techniques of motivation-Transactional Analysis-Brainstorming.								
<b>Unit:3</b>	Jobsatisfaction					12--hours		
Job satisfaction-meaning–Factors, Morale-importance-Employee attitude and behavior and their significance to employee productivity – Job enrichment- job enlargement.								

<b>Unit:4</b>	<b>Group Dynamics</b>	12--hours
Hawthorne Experiment- importance – Group Dynamics – Cohesiveness. Conflict- Types of Conflict – Resolution of conflict - Sociometry - Group norms – supervision - style –Training for supervisors.		
<b>Unit:5</b>	<b>Leadership and Counseling</b>	12--hours
Leadership – types - theories–Trait, Managerial Grid, Fiedler’s contingency. Counseling – meaning-Importance of counselor- types of counseling-merits of counseling		
Total Hours 60 Hours		
<b>Text Book(s)</b>		
1	L.M.Prasad – Organizational Behaviour. Latest edition	
<b>Reference books</b>		
1	Keith Davis-Human Behavioural Work	
2	Ghos – Industrial Psychology	
3	Fred Luthans–Organisational Behaviour	
	Online Content	
	NOC : Organizational Behaviour - NPTEL	

COs	PO 1	PO2	PO 3	PO 4	PO5	PO 6	PO 7	PO8
CO1	S	S	S	M	S	S	S	S
CO2	S	S	S	S	S	S	S	S
CO3	S	M	M	S	S	S	M	M
CO4	M	S	M	S	S	M	S	M
CO5	S	S	S	S	S	S	S	S

Course code	SOFT SKILLS FOR EFFECTIVE BUSINESS COMMUNICATION				L	T	P	C
Core/Elective/Supportive	SKILL ENHANCEMENT COURSE- III				3			3
Pre-requisite	BASIC ENGLISH				Syllabus Version			
Course Objectives : The main objectives of this course are								
1	Enable the students to clearly communicate with others and understand the nuances of communication.							
2	Improve the vocabulary so as to make an effective communication.							
Expected Course Outcomes:								
On the successful completion of the course, student will be able:								
CO 1	To know about Fundamentals of Communicative English and Communication Skills in general.							K1
CO 2	To train to identify the nuances of phonetics, into nation and enhance pronunciation skills for better communication skills.							K2

CO 3	To impart basic English grammar and essentials of important language skills.	K3
CO 4	To enhance English vocabulary and language proficiency for better communication skills.	K2
CO 5	To learn about Techniques of Information Transfer through presentation	K2
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 – Evaluate		
Unit:1	INTRODUCTION TO COMMUNICATIVE ENGLISH:	9 -- hours
Introduction, Language as a Tool, Fundamentals of Communicative English, Process of Communication, Barriers to Effective Communicative English, Different styles and levels in Communicative English (Communication Channels). Interpersonal and Intrapersonal Communication Skills, how to improve and Develop Interpersonal and Intrapersonal Communication Skills.		
Unit:2	INTRODUCTION TO PHONETICS	9-- hours
Introduction, Phonetic Transcription, English Pronunciation, Pronunciation Guidelines Related to consonants and vowels, Sounds Mispronounced, Silent and Non-silent Letters, Syllables and Structure, Word Accent and Stress Shift,– Rules for Word Accent, Intonation–purposes of intonation, Spelling Rules and Words often Misspelt – Exercises on it. Common Errors in Pronunciation.		
Unit:3	BASIC ENGLISH COMMUNICATIVE GRAMMAR AND VOCABULARY	9-- hours
Question Tags, Question Tags for Assertive Sentences (Statements)–Some Exceptions in Question Tags and Exercises, One Word Substitutes and Exercises. Strong and Weak forms of words, Words formation-Prefixes and Suffixes (Vocabulary), Contractions and Abbreviations. Word Pairs (Minimal Pairs)–Exercises, Tense and Types of tenses, The Sequence of Tenses (Rules in use of Tenses) and Exercises on it.		
Unit:4	LISTENING AND SPEAKING COMPETENCE	9-- hours
To make the students aware of the different communicative functions of English Information Transfer: Oral Presentation–Examples and Practice. Extempore/Public Speaking, Difference between Extempore/ Public Speaking, Communication Guidelines for Practice. Mother Tongue Influence (MTI)–South Indian Speakers, Various Techniques for Neutralization of Mother Tongue Influence–Exercises. Reading and Listening Comprehensions– Exercises.		
Unit:5	COMMUNICATION SKILLS FOR EMPLOYMENT AND BUSINESS ENGLISH COMMUNICATION	9-- hours
Information Transfer: Oral Presentation–Examples and Practice. Extempore/ Public Speaking, Difference between Extempore /Public Speaking, Communication Guidelines for Practice. Mother Tongue Influence(MTI)–South Indian Speakers, Various Techniques for Neutralization of Mother Tongue Influence–Exercises. Reading and Listening Comprehensions– Exercises. Communication in Business, Role of communication in the business world, Patterns of business communication Business Correspondence, Business letters, writing memos, writing minutes, writing agenda, writing circulars, writing notices, Writing CV, E-communication – Oral Communication, Placement interview, Presentation skills		
<b>Total Lecture hours</b>		<b>45 --hours</b>
<b>Text Book(s)</b>		
1	Communication Skills by Sanjay Kumar and Pushp Lata, Oxford University Press-2019...	
2	English for Engineers by N.P.Sudharshana and C.Savitha, Cambridge University Press–2018	
3	A Textbook of English Language Communication Skills, Infinite Learning Solutions– (RevisedEdition) 2021.	
4	A Course in Technical English–D Praveen Sam, KN Shoba, Cambridge UniversityPress– 2020.5) Technical Communication by Gajendra Singh Chauhan and Etal,Cengage learning India Pvt Limited [Latest Revised Edition]-2019.	

5	English Language Communication Skills–Lab Manualcum Work book,Cengage learning India Pvt Limited [Latest Revised Edition]– 2019
6	PracticalEnglishUsagebyMichaelSwan,OxfordUniversityPress–2016.
7	Technical Communication–Principles and Practice, Third Edition by Meenakshi Ramanand Sangeetha Sharma,Oxford University Press 2017.
<b>Reference Books</b>	
1	Bhatia, R.C., Business Communication, New Delhi: Ane Books Pvt Ltd
2	Scot, O., Contemporary Business Communication, New Delhi: Biztnatra
3	Parikh,J.P.etal,BusinessCommunication:BasicConceptsandSkills,Hyderabad:OrientBlackswn
4	The Four Skills for Communication–Josh Sreedharan –Foundation Books
5	Communicative English–E.Suresh kumar and P.Sreehari–Orient Blackswan
6	Study Listening-Tony Lynch-Cambridge University Press
7	Communicate2-KeithMarrowandKeithJohnson
8	Speaking Effectively-Jeremy Comfort-Cambridge University Press
9	Resource Books for Teachers-Listening- Goodith White-OUP
10	Resource Books for Teachers-Conversation- RobNolasco-OUP
11	.Resource Books for Teachers-Role Play-Gillian Porter-Ladousse-OUP
12	Improve Your Communication Skills–Alan Barker– Kogan Page, London

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	M	S	S	S	S
CO2	S	S	S	S	S	S	S	S
CO3	S	M	M	S	S	S	M	M
CO4	M	S	M	S	S	M	S	M
CO5	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

FAITH IS THE SUN OF LIFE



**V SEMESTER**

FAITH IS THE SUN OF LIFE

Course code	<b>MONETARY ECONOMICS</b>			L	T	P	C
Core/Elective/Supportive	<b>Core paper IX</b>			6			4
Pre-requisite	This course deals with the theories of money, capital market and the banking sector			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	Understand the role of money and theories of money.						
2	Analysing the monetary forces, their developmental role and limitations in shaping and influencing the monetary policies						
3	To know about the importance of Banking system						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To help the students to know about the importance of money in the economy.						K1
2	Make to learn about theories of money.						K2
3	To acquaint the students with the working of money and financial markets						K3
4	To encourage the students to learn about the role of money in different business situations.						K4
5	Help the students to know about the importance of banking system in the economy						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>							
<b>Unit:1</b>	<b>Definition of Money</b>					<b>18-- hours</b>	
Evolution, scope and functions of money, Barter and its difficulties - Definitions of money - Importance of money in a modern economy - Monetary standard –Mono metallism and Bimetallism - causes for the breakdown of gold standard - Paper standard - Principles and methods of note issue-merits and demerits.							
<b>Unit:2</b>	<b>Theories of Money</b>					<b>18-- hours</b>	
Value of money - demand for money - supply of money - theories of money - Fisher's quantity theory of money - Cambridge Equation - Keynes's Income Theory - Milton Friedman's restatement of the Quantity Theory of Money.							
<b>Unit:3</b>	<b>Money, Financial and Capital Market</b>					<b>19-- hours</b>	
Financial Market - Kinds of Financial Market - Money Market - Meaning, Functions, Constituents of Money Market - Financial Institutions in the Money Market - Characteristics of a Developed Money Market - Capital Market.							
<b>Unit:4</b>	<b>Inflation and Business Cycle</b>					<b>19-- hours</b>	
. Inflation - Types -causes - consequences and control - Inflationary gap - deflation - causes - consequences and control - Trade Cycles - Types - various phases of trade cycle.							
<b>Unit:5</b>	<b>Banking sector</b>					<b>16-- hours</b>	
Functions of commercial banks - Role of commercial banks in economic development - credit creation - Balance Sheet - Functions of Central Bank - RBI and monetary Policy – Role of RBI in demonetization – merits and demerits - Recent trends in Banking - Innovative Banking - ATM - Credit Cards, Factoring Services, E-Banking and mutual funds.							

		Total Lecture hours	90-hours					
<b>Text books</b>								
1.	K.P.M. Sundaram - Money Banking and Trade							
2.	D.M. Mithani - Monetary Theory							
<b>Reference Books</b>								
3.	Saravanavel - Banking Law and Practice							
4.	Dr. S. Sankaran - Monetary Economics, Himalaya Publishing House, Bombay, 1989.							
5.	B.N. Ghosh and Rama Ghosh - Fundamentals of Monetary Economics, Himalaya Publishing House, Bombay, 1989.							
6.	M.L. Jhingan - Monetary Economics, Konark Publishers Pvt. Ltd., New Delhi, 1997							
7.	T.T.Sethi - Monetary Economics, S.Chand& Company Ltd, new Delhi, 1996							
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	M	S	M	M	S	S	S	S
<b>CO2</b>	M	M	S	S	M	S	S	M
<b>CO3</b>	S	M	S	S	M	M	S	M
<b>CO4</b>	S	S	S	M	S	M	S	M
<b>CO5</b>	S	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	INDIAN ECONOMIC DEVELOPMENT AND POLICIES				L	T	P	C
Core/Elective/Supportive	CORE X				6			4
Pre-requisite	This course deals with the basic knowledge on the nature and important features of Indian economy.				Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:								
1	To expose the students of the various issues of the Indian economy.							
2	To familiarize the students on sector-wise development issues and critically appraise the current Indian economic problems.							
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:								
1	Understand the new economic reforms and the schemes of central and state Government						K1	
2	Assessing the role and growth of agriculture and its impact on rural development						K2	
3	Examining the population growth in India and its impact on the economy						K3	



4	To measure the infrastructural facilities and its role in economic development	K4
5	To analyze the problems of the regional economy	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		
<b>Unit:1</b>	<b>New economic reforms</b>	<b>18-- hours</b>
New economic reform and it's impact – primary, secondary and service sectors. New schemes of present central and state Government.		
<b>Unit:2</b>	<b>Indian Agriculture</b>	<b>18-- hours</b>
Indian Agriculture - Role and growth of Agricultural Sector in Indian Economy - Green Revolution - National Agriculture Policy - Infrastructure and Rural Development – WTO – subsidies - PDS.		
<b>Unit:3</b>	<b>Population in India</b>	<b>18-- hours</b>
Size and growth of population in India - Demographic Indicators - Population Policy in India - Occupational Structure - Work Participation rate - Literacy - Higher Education - Health Infrastructure - HDI - India's Rank and Position.		
<b>Unit:4</b>	<b>Infrastructure</b>	<b>18-- hours</b>
Infrastructure and Economic Development - Energy - Power - Transport - Science and Technology - Large Scale Industries - Iron and Steel - Sugar and Cement - Role of Public Sector undertakings - Short comings.		
<b>Unit:5</b>	<b>Regional Economy</b>	<b>18-- hours</b>
Regional economy – Agriculture – Industry – Service Sectors in Kongu Nadu – problems and prospects.		
<b>Total Lecture hours</b>		<b>90–hours</b>
<b>Text Book(s)</b>		
1	M.L. Jhingan - Economics of Development and Planning, Vrindha Publications, New Delhi, 2007.	
2	RuddarDutt and K.P.M. Sundaram - Indian Economy, S. Chand & Company Ltd.,New Delhi, 2007.	
<b>Reference Books</b>		
1	Dhingra IC The Indian Economy, Environment and Policy, Sultan Chand, New Delhi.	
2	Misra S.K. and V.R. Puri - Indian Economy - Its development experience -Himalaya Publishing House, Mumbai, 2004.	
3	Dr. S. Sankaran - Indian Economy, Margham Publications, Chennai, 2004.	
4	Alak Ghosh - Indian Economy, The World Press Pvt. Ltd., Calcutta, 1997.	
5	Statistical Hand Book ( <a href="http://www.coimbatore.tn.nic/handbook.html">www.coimbatore.tn.nic/handbook.html</a> )	

<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>

CO2	S	S	M	S	S	L	M	S
CO3	S	S	S	M	S	M	M	S
CO4	S	S	S	M	S	M	M	S
CO5	S	S	M	S	M	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	INTERNATIONAL ECONOMICS				L	T	P	C
Core/Elective/Supportive	Core XI				5			4
Pre-requisite	The course deals with the theories and policies of International Economics.				Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:								
1	To impart the knowledge with the theory, policy as well as the working of the international trade and payment system.							
2	To familiarize the students about the present world economic order.							
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:								
1	To understand the basic concepts of International Trade							K1
2	To evaluate and apply the comparative cost theory							K2
3	To examine the balance of payments and the terms of trade in an economy							K3
4	To analyse the exchange rate of the economy							K4
5	To assess the functioning of the international financial institutions							K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>								
<b>Unit:1</b>	<b>International Trade</b>				<b>15-- hours</b>			
Importance of International Economics - Scope - Basis of International Trade - Features of International Trade - Distinguishing Features of Inter - Regional and International Trade - Free Trade and Protection.								
<b>Unit:2</b>	<b>Theories of International Trade</b>				<b>15-- hours</b>			
Theories of International Trade - Theory of Comparative Cost - Classical Theory - Heckscher - Ohlin Theory.								
<b>Unit:3</b>	<b>Balance of payments</b>				<b>15-- hours</b>			
Balance of Payments - Meaning - Importance - Balance of trade and Balance of Payments - Disequilibrium of Balance of Payments - Measures to set-right disequilibrium - Terms of Trade - Types of terms of trade - Factors influencing terms of trade								
<b>Unit:4</b>	<b>Exchange Rate</b>				<b>15-- hours</b>			
Exchange rates - Flexible and Fixed Exchange Rates -Equilibrium rate of Exchange - purchasing power parity theory - Devaluation - Exchange control.								
<b>Unit:5</b>	<b>International financial Institutions</b>				<b>15-- hours</b>			

International Financial Institutions - Working of IMF, IBRD, IDA, International Liquidity, UNCTAD, New International Economic Order - WTO.		
		<b>Total Lecture hours</b>
		<b>75-hours</b>
<b>Text Book(s)</b>		
1	M.L. Jhingan - International Economics, Konark Publishers, New Delhi, 2007.	
2	D.M. Mithani - International Economics, Himalaya Publishing House, Mumbai, 2003.	
<b>Reference Books</b>		
1	G. Haberler - Theory of International Trade	
2	Francis Cherunilam - International Economics	
3	K.R. Gupta - International Economics	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	M	M	M	M
CO2	S	S	M	M	S	M	M	S
CO3	S	S	M	S	S	M	M	S
CO4	S	S	M	M	M	M	M	M
CO5	S	S	M	S	S	S	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ENTREPRENEURSHIP DEVELOPMENT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core XII</b>	<b>5</b>			<b>4</b>
<b>Pre-requisite</b>	This paper deals with Basic concepts of entrepreneurship, women entrepreneurs, project classification, training objectives and Business correspondence.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To understand the role of entrepreneurship in economic development					
2	To familiarize with the opportunities available to become an entrepreneur					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To acquire the knowledge regarding characteristics of an entrepreneur					K1
2	To develop an interest in entrepreneurial activity					K2
3	To equip them with entrepreneurial skills for self-employment					K3
4	To assess the training and financial facilities available for entrepreneurs					K4

5	To understand the business correspondence and communication	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		
<b>Unit:1</b>	<b>Basic concepts of Entrepreneurship</b>	<b>15-- hours</b>
Entrepreneurship – meaning and definition – importance – factors affecting entrepreneurial growth – social, economic and environmental factors. Types of functions of an entrepreneur – Qualities of a successful entrepreneur.		
<b>Unit:2</b>	<b>Women entrepreneurs</b>	<b>15-- hours</b>
Women entrepreneurs: concepts, functions and role of women entrepreneurs. Growth and women entrepreneurs, problems of women entrepreneurs – role of women entrepreneurs associations – selection of industry by women entrepreneurs. Types of industries/business suitable for women entrepreneurs – Rural entrepreneurs.		
<b>Unit:3</b>	<b>Project classification and identification</b>	<b>15-- hours</b>
Search for a business idea – sources – processing and selection – selection of types of organization – project classification and identification – project objectives – internal and external constraints – format for a report.		
<b>Unit:4</b>	<b>Training objectives and institutional finance</b>	<b>15-- hours</b>
Training and finance objectives of training – phases of EDP – special agencies for training – institutional finance with special emphasis of commercial banks. IDBL IFCI, ICICI, IRBI, SFCS,. SIPCOT, Khadi and Village Industries Commission – Micro Finance –Incentives and Subsidies( a Brief Study)		
<b>Unit:5</b>	<b>Business correspondence</b>	<b>15-- hours</b>
Business correspondence and communication – Drafting the notices of company meetings – Drafting of resolutions, minutes, structure of business letters – Sales and trade computer based systems – Management information system – merits and demerits.		
<b>Total Lecture hours</b>		<b>75–hours</b>
<b>Text Book(s)</b>		
1	C.B.Gupta& N.P. Srinivasan : Entrepreneurial Development,	
2	R.Saravanakumar, R. Parameswaran - A Text Book of Information &T.Jayalakshmi (V Unit) : Technology, Chand& Co Ltd., Delhi, 2003	
<b>Reference Books</b>		
1	S.Mohan&R.Elangovan : Current Trends in Entrepreneurship, Deep & Deep Publications Pvt,Ltd., Delhi,2006	
2	Gordon & K. Natarajan - Entrepreneurship Development, Himalaya Publishing House, Delhi,2005	
3	P.Saravanavel - Entrepreneurial Development, Principles, Policies &ProgrammeEss Pee Key Publishing House, Madras, 1997	
4	R.S.N.Pillai&Bagavathi - Commercial Correspondence & Office Management, S.Chand	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	S	M	S	M	M
CO2	S	S	S	S	M	M	M	S
CO3	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S
CO5	S	S	S	S	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	URBAN ECONOMICS				L	T	P	C
Core/Elective/Supportive	ELECTIVE I- GROUP –A				5			4
Pre-requisite	Understanding of the process of urbanization and its policies				Syllabus Version	2022-2023		
<b>Course Objectives:</b>								
The main objectives of this course are:								
1	To create an awareness on the role of urbanization on economic growth.							
2	To understand the process of urbanization.							
3	To study the issues of urbanization and its settlement.							
4	To review the urban policies and programmes							
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able:								
1	Acquire sound knowledge of fundamental concepts and theories of Urban Economics.							K1
2	Explain the various concepts of urbanization and components of urban growth							K2
3	Describe the trends, causes and consequences of urbanization.							K3
4	Assess the economic issues and problems of urbanization							K4
5	Review and analyze different urban policies, programmes and Planning in India							K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 – Evaluate</b>								
<b>Unit:1</b>	<b>Introduction to Urban Economics</b>				<b>15 -- hours</b>			
Urban Economics: Meaning. Definitions relevant to urban economics: Urban Population - Metropolitan and Micro politan Statistical Areas - Principal City. What is a City? The Axioms of Urban Economics. Why Do Cities Exist? Key factors behind the development of cities: A Trading City - A Factory City - Resources-Oriented Firms and Processing Cities - Innovation Cities								
<b>Unit:2</b>	<b>Urbanisation: Meaning</b>				<b>15-- hours</b>			
Urbanisation: Meaning – Definition - Methods of measuring the size of urban population – Features –Trends - Determinants – Causes – Effects – Benefits - Components of Urban Growth								
<b>Unit:3</b>	<b>Importance of the Study of Urbanisation</b>				<b>15-- hours</b>			
Importance of the Study of Urbanisation - Concepts of Urbanisation in India: Urban Sprawl – Degree of Urbanisation – Pace of Urbanisation – Tempo of Urbanisation – Million Plus Urban Agglomeration – Pseudo-Urbanization - Urban Morphology. Central Place Theory								
<b>Unit:4</b>	<b>Human Settlements</b>				<b>15-- hours</b>			

Human Settlements – Classification of Settlements - Types and Patterns of Settlements - Problems of Rural Settlements - Urban Settlements: Classification – Types - Problems of Urban Settlements. Issues and Challenges of Urbanization in India – Solution to Urban Problems		
<b>Unit:5</b>	<b>Urbanisation Policy: Basic Issues</b>	<b>15-- hours</b>
Urbanisation Policy: Basic Issues – Decentralisation and Centralisation Policies – National and State Policies. Urban Planning in India: Features and Principles - Urban Programmes and Planning in Five Year Plans – Recent Polices -Swachh Bharat Mission for Urban Areas - Smart Cities Mission.		
<b>Total Lecture hours</b>		<b>75 –hours</b>
<b>Text Book(s)</b>		
1	Urban Economics- Arthur O’ Sullivan- McGraw-Hill/ Irwin, New York, 2012	
2	Urbanisation in India Volume I, II, Ashok Purohit, RBSA Publishers, Jaipur 2012	
<b>Reference Books</b>		
1	Urbanisation in India, PullaRao, ABD Publishers, Delhi, 2012	
2	Urbanisation and Urban systems in India, R. Ramachandran, Oxford University Press, 2014	
3	<a href="https://www.amazon.com/Lectures-Urban-Economics-Brueckner/dp/8120347528">https://www.amazon.com/Lectures-Urban-Economics-Brueckner/dp/8120347528</a>	
4	<a href="http://vikaspedia.in/health/sanitation-and-hygiene/swachh-bharat-mission">http://vikaspedia.in/health/sanitation-and-hygiene/swachh-bharat-mission</a>	
5	<a href="https://www.india.gov.in/spotlight/smart-cities-mission-step-towards-smart-india">https://www.india.gov.in/spotlight/smart-cities-mission-step-towards-smart-india</a>	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	M	M	S	S	S	S
CO2	S	S	M	M	S	S	S	S
CO3	S	S	S	M	S	S	S	S
CO4	S	S	S	S	S	S	M	M
CO5	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>BASIC ECONOMETRICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>ELECTIVE PAPER I - GROUP- A</b>	<b>5</b>			<b>4</b>
<b>Pre-requisite</b>	This course is mainly educating the students on the Econometrics research tools, how it can be used to estimate and test economic Relationships.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b> The main objectives of this course are:						

1	To make the students to understand the tools of econometrics and applying them in practice.	
2	The methods thoughts in the course can be employee in the business discipline and in social science discipline.	
<b>Expected Course Outcomes:</b>		
On the successful completion of the course, student will be able:		
1	Ability to perform analysis of economic data based on a broad knowledge of the simple linear regression model.	K1
2	Provide basic knowledge of the statistical foundations of regression analysis with OLS.	K3
3	Provide basic knowledge of hypothesis testing for statistical inference.	K4
4	Basic knowledge of how to detect and treat violations of OLS assumption, such as omitted variables, Heterocedasticity and Multicollinearity, and Autocorrelation.	K3
5	Ability to perform analysis of variance and co variance to determine the variability, between samples and within samples.	K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>		
<b>Unit:1</b>	<b>Introduction</b>	<b>15 -- hours</b>
Definition, Scope and Divisions of Econometrics – Objectives and uses of Econometrics – Methodology of Econometrics: Specification, and Estimation and Evaluation of estimates – Basic concepts of Population and Simple regression functions – Meaning and Significance of the error term (u).		
<b>Unit:2</b>	<b>Estimation and Testing</b>	<b>15-- hours</b>
Classical Linear Regression Model and its assumptions – Method of Ordinary Least-Square (OLS) to estimate OLS estimators – Statistical tests ('t' and 'F') of OLS estimates (Simple regression only) – Properties of OLS estimates.		
<b>Unit:3</b>	<b>Types of Estimation and Errors</b>	<b>15-- hours</b>
Point and Interval estimation – Confidence interval approach – Statistical properties of point estimate – Types of errors and their implications in the hypothesis testing for statistical inference.		
<b>Unit:4</b>	<b>Violation of OLSM Assumptions</b>	<b>15-- hours</b>
Nature, sources, consequences and methods of detection and solutions to problems (Heterocedasticity, Multicollinearity, and Autocorrelation) of single equation regression model (any one method of detection and solution).		
<b>Unit:5</b>	<b>Functional Forms and Dummy Variables</b>	<b>15-- hours</b>
Concepts of functional forms and Measurement of growth rate (log-lin function) and elasticity (log-log function) – ANOVA and ANCOVA models on dummy variables.		
<b>Total Lecture hours</b>		<b>75–hours</b>
<b>Text Book(s)</b>		
1	DamodarN.Gujarathi:	Basic Econometrics, McGraw-Hill, Inc.
2	DamodarN.Gujarathi:	Essential of Econometrics, McGraw-Hill, Inc.
3	Madalla G.S:	Econometrics McGraw-Hill, Inc.
<b>Reference Books</b>		
1	DamodarN.Gujarathi: Econometrics by Example, Palgrave Publications.	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	S	S	S	M	M	S	S
CO2	S	M	M	S	S	M	M	M
CO3	S	S	S	S	S	S	S	M
CO4	M	M	S	M	M	M	M	S
CO5	S	M	M	S	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code		<b>APTITUDE AND LOGICAL REASONING</b>	L	T	P	C
Core/Elective/Supportive		<b>SKILL ENHANCEMENT COURSE – I</b>	3			3
Pre-requisite	Basic knowledge on logical reasoning		Syllabus Version	2022-2023		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	Educate about the logical reasoning skills					
2	Inculcate the knowledge about the Quantity ability and logical reasoning ability					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	Understand the basic concepts of quantitative ability					K1
2	Understand the basic concepts of logical reasoning Skills					K2
3	Acquire satisfactory competency in use of reasoning					K3
4	Solve campus placements aptitude papers covering Quantitative Ability, Logical Reasoning Ability					K4
5	Compete in various competitive exams like CAT, CMAT, GATE, GRE, GATE, UPSC,GPSC etc.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						
<b>Unit:1</b>	<b>Quantitative Ability (Basic Mathematics)</b>				<b>9 -- hours</b>	
Number Systems, LCM and HCF, Decimal Fractions, Simplification, Square Roots and Cube Roots, Average, Problems on Ages, Surds & Indices, Percentages						
<b>Unit:2</b>	<b>Quantitative Ability (Applied &amp; Engineering Mathematics)</b>				<b>9-- hours</b>	
Logarithm, Permutation and Combinations, Probability, Profit and Loss, Simple and Compound Interest, Time, Speed and Distance, Time & Work, Ratio and Proportion, Area						
<b>Unit:3</b>	<b>Data Interpretation</b>				<b>9-- hours</b>	
Data Interpretation, Tables, Column Graphs, Bar Graphs, Line Charts, Pie Chart, Venn Diagrams						
<b>Unit:4</b>	<b>Logical Reasoning (Deductive Reasoning)</b>				<b>9-- hours</b>	
Analogy, Blood Relation, Directional Sense, Number and Letter Series, Venn Diagrams, Seating Arrangement, Syllogism, Mathematical Operations						



<b>Unit:5</b>	<b>Problems</b>	<b>9-- hours</b>
Problems on Numbers, Mixtures and Allegation, Coding – Decoding, Calendars, Clocks		
	<b>Total Lecture hours</b>	<b>45–hours</b>
<b>Text Book(s)</b>		
1.	A Modern Approach To Verbal & Non Verbal Reasoning By R S Agarwal	
2.	Analytical and Logical reasoning By Sijwali B S	
<b>Reference Books</b>		
1.	Quantitative aptitude for Competitive examination By R S Agarwal	
2.	Analytical and Logical reasoning for CAT and other management entrance test By Sijwali B S	
3.	Quantitative Aptitude by Competitive Examinations by AbhijitGuha 4 th edition	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
<a href="https://prepinsta.com">https://prepinsta.com</a>		
<a href="https://www.indiabix.com">https://www.indiabix.com</a>		
<a href="https://www.javatpoint.com">https://www.javatpoint.com</a>		

<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	S	S	M	M	M
<b>CO2</b>	S	S	S	S	S	M	S	S	M
<b>CO3</b>	S	S	M	S	S	M	S	S	M
<b>CO4</b>	S	M	M	S	S	M	S	S	M

**\*S-Strong; M-Medium; L-Low**

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**VI SEMESTER**

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Course code		<b>FISCAL ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core/Elective/Supportive		<b>CORE PAPER XIII</b>	<b>6</b>			<b>4</b>
Pre-requisite	The course deals with the revenue and expenditure of the government.		Syllabus Version	2022-2023		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To enable the students understand the fundamentals of public finance.					
2	Understanding and analyzing the role and functions of the government and the impact of financial operations on economic activities.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To create knowledge on the scope of fiscal economics					K1
2	To analyze public revenue and the impact of taxation					K2
3	To assess the impact of public expenditure					K3
4	To understand public debt and the budgetary procedure					K4
5	Application of fiscal instruments on the economy					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>Scope of Fiscal Economics</b>				<b>18 -- hours</b>	
Nature, scope and importance of Fiscal Economics - Public Vs. Private finance - public finance &UDCS - Principle of maximum social advantage.						
<b>Unit:2</b>	<b>Public Revenue</b>				<b>18-- hours</b>	
Public revenue - sources - Tax and non-Tax - Taxation - classification - Principles - effects - theories of taxation - impact and incidence of taxation – GST – Features – merits and demerits.						
<b>Unit:3</b>	<b>Public expenditure</b>				<b>18-- hours</b>	
Public Expenditure - principles - classification - effects - growth of public expenditure with special reference to India - control of public expenditure.						
<b>Unit:4</b>	<b>Public Debt</b>				<b>18-- hours</b>	
Public Debt - meaning - sources - classification - principles - Budget - meaning - features - principles - budgetary procedure.						
<b>Unit:5</b>	<b>Fiscal Instruments</b>				<b>18-- hours</b>	
Fiscal policy - instruments - federal finance- principles - problems - reports of 14th & 15th Finance Commission - Local Finance.						
<b>Total Lecture hours</b>					<b>90–hours</b>	
<b>Text Book(s)</b>						
1	B.P. Tyagi - Public Finance, Jai Prakash Nath & Co., Meerut.					
2	K.P.M. Sundaram - Fiscal Economics					
<b>Reference Books</b>						
1	Andley & Sundaram - Public Finance & Policy					

2	Tripathy -Public Finance & Economic Development							
3	Cauvery, SudhaNayak, Girija, Kriparani&Meenakshi - Public Finance, S. Chand & Company Ltd., New Delhi.							
4	R.C. Saxena& P.C. Mathur - Public Finance, K. Nath& Co., Meerut.							
5	Dr. S. Sankaran – Fiscal Economics, Martha Publications, Chennai.							
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INDUSTRIAL ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>CORE PAPER – XIV</b>	<b>6</b>			<b>4</b>
<b>Pre-requisite</b>	The course is designed to make the students to understand the location and localization of an industry and to learn the industrial financial sources and the recent industrial policies and its impact on productivity of industries.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	Make the students to understand the theory of location.					
2	To equip the students with the knowledge regarding the relationship between industrial growth and economic development.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To understand the factors determining the size of the firm				K1	
2	To examine the factors affecting the location of an industry				K2	
3	To understand the impact of industrial finance				K3	
4	To evaluate the Industrial policies				K4	
5	To assess the Industrial Productivity				K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>Size of the Firm</b>				<b>18 -- hours</b>	
Factors determining the size of the firm - Concept of the optimum firm - Representative firm.						
<b>Unit:2</b>	<b>Industrial Location</b>				<b>18-- hours</b>	
Location of Industry - Factors determining Industrial Location - Theories of Industrial Location - Weber - Sargant Florence Theory.						

<b>Unit:3</b>	<b>Industrial Finance</b>	<b>18-- hours</b>
Industrial Finance - Term Finance: Short Term, Long Term - Specialized Financial Institutions - IFCI - IDBI - ICICI.		
<b>Unit:4</b>	<b>Industrial Policies</b>	<b>18-- hours</b>
Industrial Policies - 1948, 1956, 1971, 1977, 1990, 1991 - Role of State - New Industrial Policy and Economic Reforms.		
<b>Unit:5</b>	<b>Industrial Productivity</b>	<b>18-- hours</b>
Industrial Productivity - Factors Influencing Productivity - Rationalization - Aspects of Rationalization - Scientific Management - Automation - Benefits - Rationalization in India.		
<b>Total Lecture hours</b>		<b>90 –hours</b>
<b>Text Book(s)</b>		
1	Barthwal, R.R. "Industrial Economics as Introductory" Text Book, Wiley Eastern Ltd., New Delhi, 2000.	
2	Sivayya, K.V. and Das, V.B.M. "Indian Industrial Economy" S. Chand & Co., New Delhi, 2004.	
<b>Reference Books</b>		
1	Devine, P.J. "An Introduction to Industrial Economics" George Allen and Unwin, London, 1978.	
2	SSM Desai, Industrial Economics	
3	Sadhu, A.N., and Singh, A. "Industrial Economics" Himalaya Publishing House, Mumbai, 1998.	
4	Dutt and Sundaram, K.P.M. "Indian Economy" S. Chand & Co., New Delhi (2007).	
5	Dhingra, I.C., "Indian Industrial Economy" Sultan Chand & Co., New Delhi (1972).	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	M	M	M	M	M	M	M
CO2	S	S	S	S	S	S	M	S
CO3	S	S	S	S	M	S	S	S
CO4	S	S	S	S	S	S	S	S
CO5	S	S	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low



Course code	ENVIRONMENTAL ECONOMICS			L	T	P	C
Core/Elective/Supportive	CORE PAPER XV			5			4
Pre-requisite	This course relates to the fundamentals environmental Economic Theories and the Concepts of Economics and Ecology.			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To know the basic Concepts in Ecology and Economic development.						
2	To Aware the Environmental policy and its Management						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To familiarize with the theories of environmental economics.						K1
2	To examine the practical environmental problems and offer solutions.						K2
3	To analyze the regulations and prohibition measure to protect the environment						K3
4	To assess India's environmental policies.						K4
5	To measure the government activity against environmental problem						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>Economics and Environment</b>			<b>15-- hours</b>			
Introduction - Economics and Environment – Definition – Scope – Role - Significance of Environmental Economics - Economic Growth and Development - Ecology and Economic Development - Relationship between Environment and the Economy - Environment and Economic System							
<b>Unit:2</b>	<b>Environment Quality</b>			<b>15-- hours</b>			
Environmental Quality - Common Property Resource - Characteristic Tragedy of Commons – Air - Land – Water – Energy – Forest Resources - Wild Life - Man-Made Causes - Environmental Crisis – Pollution - Economic Consequences							
<b>Unit:3</b>	<b>Urbanization</b>			<b>15-- hours</b>			
Urbanization - Important Trends – Problems - Malthusian predicts - Theory of Demographic Transition - Effects and Remedies.							
<b>Unit:4</b>	<b>Environmental Policy</b>			<b>15-- hours</b>			
Environmental Policy - Constitutional Protection - Planning and Management - Role of Government - Public Awareness - Law and Environment							
<b>Unit:5</b>	<b>Global Warming</b>			<b>15-- hours</b>			
Meaning of Global Warming - Green House Effect - Contribution to Global Warming - Response to Green House Effect - Ozone Depletion - Climate Change - Contribution of Nation and State							
				<b>Total Lecture hours</b>		<b>75 --hours</b>	
<b>Text Book(s)</b>							

1	Eugine T., Environmental Economics
2	Sankaran.S., Environmental Economics
<b>Reference Books</b>	
1	Varadarajan.S and Elangovan.S, Environmental Economics
2	Richardson H.W, Urban Economics
3	Karpagam.M, Environmental Economics
4	Pearce D.W. Environmental Economics, Longman Group Ltd.

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	S	M	S	M	S
CO2	S	S	S	S	M	S	M	S
CO3	M	S	S	M	M	M	M	M
CO4	S	S	M	M	M	M	M	S
CO5	S	M	M	M	M	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	RURAL ECONOMICS			L	T	P	C
Core/Elective/Supportive	ELECTIVE II- GROUP –B			5			4
Pre-requisite	The course aims at equipping the students with the growth and development of tourism and effect on employment generation.			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	The objective of the course is to provide the students with a thorough knowledge and understanding of the foundations of rural economics,						
2	Impart knowledge on concepts of the dimensions of rural development						
3	Understand the challenges in rural development strategies for rural upliftment.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	Understand the concepts and problems of rural economy.						K1
2	Analyze the structure of rural unemployment and the technology used for rural growth.						K2
3	Examine the extent of rural indebtedness, and the measures to remove rural unemployment.						K3
4	Evaluate the causes and consequences of Rural Poverty, and describe the Poverty Alleviation Programmes						K4
5	Improve the knowledge about the tribal economy and analyze the tribal agricultural activities						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							

<b>Unit:1</b>	<b>Rural Economy</b>	<b>15-- hours</b>
Rural economy: Characteristics – Need for the study of Rural economy – Comparison of Rural Economy and Urban Economy. Concepts: Barter System, Non Monetized Sector – Agricultural Marketing –Farm and Non-Farm Income - Problems of Rural Economy.		
<b>Unit:2</b>	<b>Rural Unemployment</b>	<b>15-- hours</b>
Rural Unemployment: Types, Structure, Causes of Unemployment and Remedial measures. Rural Employment Generation Programmes: NRLM, MGNREGA. Technology for rural growth: ICT, mobile, successful programmes.		
<b>Unit:3</b>	<b>Rural Credit</b>	<b>15-- hours</b>
Rural credit: Rural indebtedness: Causes and effects of rural indebtedness, Remedies. Rural Credit - Need for Credit – Sources of Rural Credit. Unorganized credit: Money lenders. Organized: Indigenous Bankers - Co-operatives, Commercial banks - Regional Rural banks - Micro-Finance Institutions (MFIs) – NABARD		
<b>Unit:4</b>	<b>Rural Poverty</b>	<b>15-- hours</b>
Rural Poverty: Causes and Consequences - Rural Poverty Line – Estimates of poverty –Factors influencing Rural Poverty – Removal of Poverty - Rural Development in India.		
<b>Unit:5</b>	<b>Tribal Economy</b>	<b>15-- hours</b>
Tribal Economy: Characteristics of Tribal economy – Distribution of Tribal population in India - Tribal Agriculture and allied activities: Horticulture, Floriculture, Animal husbandry, Forest and forest collection. Problems in Tribal areas - Role of NGOs.		
<b>Total Lecture hours</b>		<b>75 --hours</b>
<b>Text Book(s)</b>		
1	Sankaran S. Rural Economics , Margham Publications	
2	RuddarDutt and K.P.M Sundaram, 2014, Indian Economy, S. Chand & Co Ltd, New Delhi.	
<b>Reference Books</b>		
1	Mohapatro, P.C. (1987) Economic Development of Tribal India, Ashish Publishing House, New Delhi.	
2	Sahu, N.C. (1986): Economics of Forest Resources: Problems and Policies in a regional, B.R.Publishing Corporation, New Delhi.	
3	Reddy, K. V. (2012). Agriculture and Rural Development, Himalaya Publishing house	
4	Choudrey, C.M. Rural Economics. . Sunshine Publications, Jaipur 2009	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	S	S	S	S	S	S	M	S
CO2	S	S	S	M	S	M	M	S
CO3	S	S	S	S	S	M	M	S
CO4	S	S	S	M	S	S	M	S
CO5	M	M	M	M	S	M	M	S

\*S-Strong; M-Medium; L-Low



Course code	BEHAVIOURAL ECONOMICS			L	T	P	C
C Core/Elective/Supportive	Elective II – Group - B			5	-	-	4
Pre-requisite	Basic knowledge of Psychology and Economics			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To acquire sufficient knowledge about economic decision-making						
2	To acquaint economic concepts with the role of psychology						
3	To equip with the theoretical predictions in the framework of behavioural economics.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To understand the concepts of behavioural economics.						K1
2	To understand about the emotions and rationality Judgment.						K2
3	To analyze the theories of behavioural economics.						K3
4	To gain knowledge on theories of choice and preferences.						K4
5	To construct the knowledge of theories of social preferences.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							
<b>Unit:1</b>	<b>Introduction to Behavioural Economics</b>			<b>15 -- hours</b>			
Introduction to Behavioral Economics: Origins of Behavioural Economics, Decision-making under Neo-classical economic framework- rationality, optimization.							
<b>Unit:2</b>	<b>Role of Emotions and Rationality Judgment</b>			<b>15-- hours</b>			
Role of Intuition, Emotions, and Beliefs in decision making. Bounded Rationality Judgment under Risk & Uncertainty: Heuristics & Biases Heuristics:-Representativeness, Substitution, Availability, Affect, Anchoring. Framing Biases: Cognitive and emotional biases.							
<b>Unit:3</b>	<b>Theories of Behavioural Economics</b>			<b>15-- hours</b>			
Choice Under Risk & Uncertainty Expected Utility Prospect Theory – Reference Points – Risk Concept and Understanding – Loss Aversion – Shape of Utility Function – Decision Weighting – Probabilistic Judgment. Mental Accounting, Framing Mental Accounts Fungibility & Labels Hedonic Editing.							
<b>Unit:4</b>	<b>Theories of Choice and Preferences</b>			<b>15-- hours</b>			
Inter temporal Choice, Temporal Choice, Construal Level Theory, Valuation of Delayed Consumption Preferences for Sequences of Outcomes, Hyperbolic Discounting, Preference Reversal.							
<b>Unit:5</b>	<b>Theories of Social preferences</b>			<b>15-- hours</b>			
Behavioural Game Theory Social Preferences: Fairness, trust, cooperation, reciprocity, Norms Limited Strategic Thinking Choice architecture: Nudge, Nudge vs. boost, Behavioural public policy.							

		<b>Total Lecture hours</b>	<b>75 –hours</b>
<b>Text Book(s)</b>			
1	Erik Angner, “A Course in Behavioral Economics”, Palgrave Macmillan		
2	M. Altman, Handbook of Contemporary Behavioural Economics: Foundation and Developments (2007), Prentice Hall India		
<b>Reference Books</b>			
1	E. Cartwright, Behavioural Economics (2011), Routledge		
2	D. Kahneman, Thinking Fast and Slow (2011), Allen Lane, Penguin Books		
3	G.Loewenstein, Exotic Preferences: Behavioural Economics and Human Motivation (2007), Oxford University Press		
4	SanjitDhami, "The Foundations of Behavioral Economic Analysis", Oxford University Press (2016)		
5	Behavioral Economics: Toward a New Economics by Integration with Traditional Economics by Ogaki, Masao, Tanaka, Saori C. Published by Springer, ISBN 978-981-10-6439-5		
6	Nick Wilkinson; Matthias Klaes (2012), An Introduction to Behavioral Economics, 2nd Edition, Palgrave Macmillan.		
7	World Development Report 2015: Mind, Society, and Behavior		
Course Designed By: Dr.Hemasrikumar, Email ID: <a href="mailto:hemsrikumar12@gmail.com">hemsrikumar12@gmail.com</a>			

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	M	M	S	S	S	M
CO2	S	S	S	S	S	M	S	M	S
CO3	M	S	S	S	S	M	M	M	M
CO4	M	M	M	M	M	M	M	S	M
CO5	S	S	S	S	M	S	M	M	S

\*S-Strong; M-Medium; L-Low

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Course code	TRANSPORT ECONOMICS			L	T	P	C
Core/Elective/Supportive	ELECTIVE III- GROUP –C			5			4
Pre-requisite	An understanding of the basic concepts of transportation.			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To understand the modes of Transport.						
2	To basic knowledge of transportation economics and their applications to transportation						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	Comprehend the concepts, principles and procedures of transport economics for effective decision making.						K1
2	xplain the various modes of transport.						K2
3	xamine the modernization in transport system.						K3
4	Relate the benefits of privatization of transport sector for domestic and international trade.						K4
5	Develop the knowledge of air transportation services for international trade.						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> – Evaluate							
<b>Unit:1</b>	<b>Meaning and Significance of Transport</b>					<b>15 -- hours</b>	
Meaning and Significance of Transport - Classification of Transport – Road, Railway, Water and Air – Effects - Economic, Political and Social.							
<b>Unit:2</b>	<b>Railways</b>					<b>15-- hours</b>	
Railways – Features – Advantages – Disadvantages; Growth of Network, Modernization of Railways – Privatization of Railways – Metro Rails - Problems of railways.							
<b>Unit:3</b>	<b>Road Transport</b>					<b>15-- hours</b>	
Road Transport- Nature – Characteristics – Significance; Road Development in India – Existing Deficiencies in Road System –Problems of Road transport – Suggestions - Privatization of Road Transport.							
<b>Unit:4</b>	<b>Water Transport</b>					<b>15-- hours</b>	
Water Transport – Nature and Significance – Limitations – Classification - Problems of Development – Shipping: Progress – Problems of Indian Shipping – Major Ports in India							
<b>Unit:5</b>	<b>Air Transportation</b>					<b>15-- hours</b>	
Air Transportation – Features - Significance – Limitations - Progress – Problems and Recommendations. Transport Policy- Objectives. Transport Co-ordination							
					<b>Total Lecture hours</b>	<b>75 –hours</b>	
<b>Text Book(s)</b>							
1	Economics of Transport ,S. Sankaran, Margham Publications, Chennai. 2004						
2	Indian Economy, S. Sankaran, Margham Publications, Chennai. 2004						
<b>Reference Books</b>							

1	The Indian Economy – Environment and Policy, Ishwar C. Dhingra, Sultan Chand and Sons, New Delhi, 2014.
2	India Transport Report, India National Transport Development Policy Committee Routledge Publishers, 2014
3	E-Resources: (Web resources & E-books)- <a href="http://www.lincoste.com/ebooks/english/pdf/economics/Transportation_Economics.pdf">http://www.lincoste.com/ebooks/english/pdf/economics/Transportation_Economics.pdf</a>
4	2. <a href="https://cdn.theatlantic.com/assets/media/files/FOT_ebook.pdf">https://cdn.theatlantic.com/assets/media/files/FOT_ebook.pdf</a>

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	S	M	S	S	M	S	S	S
CO 2	S	S	S	M	M	S	S	S
CO 3	S	S	S	S	S	S	M	M
CO 4	S	M	S	S	M	M	S	S
CO 5	S	S	S	S	M	S	M	S

Course code	FINANCIAL ECONOMICS			L	T	P	C
Core/Elective/Supportive	ELECTIVE PAPER III : GROUP- C			5			4
Pre-requisite	This course exposes students to the theory and functioning of the financial sectors of the economy in various Financial segments.			Syllabus Version	2022-2023		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To familiarize the students with the basic concepts in financial economics and develop comprehensive knowledge on the role of finance in the operation of an economy.						
2	To enables them to know the operation of the Indian Financial System and activities in the financial markets.						
3	To make the students to aware of the derivative and futures market operations and its functions.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	It provides the knowledge on the financial market and instruments money market.						K1
2	To understand the Capital Market segment and role of participants.						K2
3	It provides the application skills to secondary market functions and trading settlement methods.						K3
4	It creates the better knowledge on the derivative market functions and derivative instruments.						K4
5	To gain the knowledge and evaluate the Mutual funds and varies fund schemes.						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>Introduction to Financial system and Financial Markets</b>			<b>15 -- hours</b>			
Financial system: Structure – Functions- Role - Financial system and Economic development. Financial markets - Financial Instruments –classification - Industrial Security Market-Government							

securities market. Money market-Meaning-Functions-Importance -Instruments of money market.		
<b>Unit:2</b>	<b>Capital market</b>	<b>15-- hours</b>
Capital market: Meaning – Functions-Structure-Primary and Secondary markets. New issue market (NIM): Functions and intermediaries of NIM-merchant bankers, underwriters, registrar, and share transfer agents, bankers to an issue, stock broker- Instruments of Capital market.		
<b>Unit:3</b>	<b>Secondary Market &amp; Trading Cycle</b>	<b>15-- hours</b>
Secondary market: Introduction-Recognition of stock exchanges –NSE-BSE-service of stock exchanges-listing of securities-Registration of Stock brokers-Sub Brokers-code of conduct and functions of stock brokers. NEAT System-on line trading-Depository-Functioning of depository. Settlement and trading in stock exchange- Players in stock exchanges-Types of Speculators.		
<b>Unit:4</b>	<b>Derivative Market</b>	<b>15-- hours</b>
Derivative market: Meaning –Definition-Importance -Derivatives in India –Kinds of Derivatives-Forward-Futures-options- Advantages of Future and Options –Call option –Put option. Market Contracts: share option-Index option –Currency options. Swap-kinds of Swap-Advantages and Disadvantages-Recent Developments.		
<b>Unit:5</b>	<b>Mutual Funds</b>	<b>15-- hours</b>
Mutual funds: Introduction –Meaning –Classification - Importance - Risks-Legal Structure of Mutual Funds in India-Types of fund/scheme –Entry-Exit- Net Asset value. Fund manager –role of fund manager. Investor rights, General Guidelines.		
<b>Total Lecture hours</b>		<b>75–hours</b>
<b>Text Book(s)</b>		
1	Financial Market and Services –Gordon, Natarajan -Himalaya Publishing House.	
2	Financial Institutions and Markets, Gupta- TATA McGraw Hill Co Ltd, New Delhi.	
3	Indian Financial system, Bharathi V Pathak -TATA McGraw Hill Co Ltd, New Delhi.	
<b>Reference Books</b>		
1	Monetary Economics Institutions Theory and Policy, Smith- Chand and Co Ltd.	
2	Indian Financial system, Preethi Singh -Pierson Education, New Delhi.	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	M	S	S	S	M	M	S	S
CO2	S	M	M	S	S	M	M	M
CO3	S	S	S	S	S	S	S	M
CO4	M	M	S	M	M	M	M	S
CO5	S	M	M	S	M	S	M	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>FUNDAMENTALS OF COMPUTERS - I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Skill</b>		<b>Skill Enhancement Course</b>	<b>4</b>			<b>3</b>
<b>Pre-requisite</b>	The course deals with the basic knowledge on different concepts of computer applications.		<b>Syllabus Version</b>	<b>2022-2023</b>		
<b>Course Objectives:</b>						

The main objectives of this course are:		
1	To provide knowledge on different concepts of computer applications	
2	To enable the students to understand the importance of computer system.	
Expected Course Outcomes:		
On the successful completion of the course, student will be able:		
1	To understand the basic concepts of computer	K1
2	To analyse the input devices of the computer	K2
3	To examine the output devices of a computer	K3
4	To work practically with tally ERP	K4
5	To enable students to work on different kinds types of vouchers	K5
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create		
Unit:1	<b>MS Word</b>	8 - hours
Creating document - entering text -selecting text - giving instructions - using tool bars - menu commands - key board - shortcut - saving files Word Basics - Using Auto text - using Auto correction - word editing techniques - finding and replacing text - checking spelling using templates - formatting - formatting with styles - creating tables.		
Unit:2	<b>MS Excel</b>	8 - hours
Excel Basics - entering data - selecting ranges - editing entries - formatting entries - simple calculation - naming cells and ranges - data display - printing work sheets - copying entries between work books - moving sheets between work books - deleting sheets - creating graphs.		
Unit:3	<b>MS Power Point</b>	8 - hours
Power Point Basics - editing text - adding subordinate points - deleting slides - working outline view - a design template merging presentation in slider sorter view applying templates - adding graphs - adding organization charts - running an electronic slide - show adding special effects.		
Unit:4	<b>Tally ERP</b>	8 - hours
Tally ERP 9 - Create New Company with tally vault password, Accounting Master: Groups-create ledger accounts –check trial balance–Inventory Master: create stock group-units-godown-stock items .check stock summary.		
Unit:5	<b>Types of vouchers</b>	6 - hours
Accounting Vouchers-Make Different types of vouchers-prepare Sales invoice-purchase invoice Preparation financial reports : Day book-Trial balance - Books of Accounts – Profit and loss accounts-Balance sheet Inventory Reports : Stock summary-Inventory Books.		
	Total Lecture hours	40 –hours
Text Book(s)		
1	Parameswaran - Computer Applications in Business.	
2	Tally education Pvt Ltd-Tally pro vol-1	
Reference Books		
1	S. Palanivel - Tally Accounting Software - Margham Publications	



FAITH IS THE SUN OF LIFE

# M. A. Economics

## Syllabus

Program Code:  
4AB

2022– 2023  
onwards

FAITH IS THE SUN OF LIFE



<b>Program Educational Objectives (PEOs)</b>	
The <b>M.A Economics</b> program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	To teach the latest developments in the principles of economic theory.
PEO2	To equip students with tools of econometrics for applied economic research.
PEO3	To teach applications of theories in analyzing current economic problems.
PEO4	To develop skills to evaluate the opportunities available in the field of Economics.
PEO5	To continuously enhance academic rigor and research outcomes.
PEO6	To analyze global economic issues from different perspectives and apply them across globe in the field of Economics.
PEO7	To understand the importance of inclusion, development and sustainability in order to resolve related local, national and global issues
PEO8	To create continuous learning environment for engaging themselves to update with new knowledge in Economics.
PEO9	To nurture global human capital, future leaders and problem-solvers to become employable and sensitized world citizens.
PEO10	To demonstrate digital literacy by developing skills and ability to adopt online tools and other interfaces to develop resources that adapt to industry 4.0

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of <b>M.A Economics</b> program, the students are expected to	
PSO1	To apply economic theories and to expand the problem-solving acumen.
PSO2	They will be taught the applications of theories in analyzing current economic Problems
PSO3	Conscious about the socio-economic environment, both domestic and international and its implications on business.
PSO4	The students of Economics can easily crack the competitive examinations and can become successful in getting employment opportunities.
PSO5	Open up research opportunities in the national level premier educational institutes.
PSO6	The character building of students and makes them responsible citizens.
PSO7	The students are exposed to national and international problems and hence they will have a thorough understanding of national and international economic events.
PSO8	To understand the importance of inclusion, development and sustainability in order to resolve related local, national and global issues.
PSO9	To foster a spirit of scientific inquiry and creativity.
PSO10	To geared up for advanced level of studies.

<b>Program Outcomes (POs)</b>	
On successful completion of the <b>M.A Economics</b> program	
PO1	Identify the standard level of growth and development of the economy of the country and to determine and frame planning policies.
PO2	Identify and formulate the research design, analyze data and be able to unite the research report and provide valid inferences.
PO3	Understand the concepts of national income, macroeconomic variables such as multiplier, consumption, investment and general equilibrium.
PO4	To gain mathematical knowledge for better understanding of economic concepts and theory and ability to apply the knowledge in the formulation and validation of economic theories.
PO5	Understand and apply the knowledge of the industrial economics on location, efficiency, productivity and industrial policies
PO6	Frame monetary policies, understand and analyze the value of money, cashbalance, capital markets and banking system and hence improve the ability to compare central bank function with that of the othercountries.
PO7	To understand how the individuals and firms allocate their scarce resources and to provide training andemployment.
PO8	Improve the ability to formulate theories and economic models to test and validate the concepts with practical knowledge.
PO9	Used to estimate the specific figures which enable them to predict future economically oriented events.
PO10	Engage effectively with computer knowledge especially Windows, LINUX and other software and to analyze and interpret the data.

**PROVIDENCE COLLEGE FOR WOMEN (AUTONOMOUS)**

**COONOOR**

**M.A., Economics (CBCS PATTERN)**

*(For the students admitted from the academic year 2022 – 23 onwards)*

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
Core I	Advanced Micro Economics I	4	6	-	50	50	100
Core II	Economic Development and Policies	4	6	-	50	50	100
Core III	Economics of Marketing Management	4	6	-	50	50	100
Core IV	Quantitative Techniques for Managerial Decision	4	6	-	50	50	100
Elective I / Group A	Tamil Nadu Economy /	4	6	-	50	50	100
Elective I / Group B	Principles of Management /	4	6	-	50	50	100
Elective I / Group C	Behavioural Economics	4	6	-	50	50	100
		<b>20</b>	30	-	250	250	<b>500</b>
<b>SECOND SEMESTER</b>							
Core V	Advanced Micro Economics II	4	5	-	50	50	100
Core VI	Macro Economics	4	5	-	50	50	100
Core VII	Agricultural Economics	4	5	-	50	50	100
Core VIII	Research Methodology	4	5	-	50	50	100
Core IX	Industrial Economics	4	5	-	50	50	100
Elective II / Group A	Elective II: Entrepreneurial Development	4	5	-	50	50	100
Elective II / Group B	Investment Management	4	5	-	50	50	100
Elective II / Group C	Financial Services	4	5	-	50	50	100
	<b>Total</b>	<b>24</b>	30	-	<b>300</b>	<b>300</b>	<b>600</b>
<b>THIRD SEMESTER</b>							
Core X	Monetary Theory and Policies	4	5	-	50	50	100
Core XI	Econometrics	4	5	-	50	50	100
Core XII	Introduction to SPSS in Economics	4	5	-	50	50	100
Core XIII	Environmental Economics	4	5	-	50	50	100
Core X IV	Labour Economics	4	5	-	50	50	100
Elective III / Group A	Financial Markets	4	5	-	50	50	100
Elective III / Group B	Services Marketing	4	5	-	50	50	100
Elective III / Group C	Introduction to Industry 4.0	4	5	-	50	50	100
	<b>Total</b>	<b>24</b>	30	-	<b>300</b>	<b>300</b>	<b>600</b>

<b>FOURTH SEMESTER</b>							
Core XV	Public Economics	4	6	-	50	50	100
Core XVI	International Economics	4	6	-	50	50	100
Core XVII	Human Resource Management	4	6	-	50	50	100
ElectiveIV/ Group A	International Trade Procedures and Documentation	4	6	-	50	50	100
Elective IV / Group B	International Business	4	6	-	50	50	100
Elective IV / Group C	Health Economics	4	6	-	50	50	100
	Project Report / Dissertation (100 marks project & 50 marks viva – voce).	6	6	-	50	100	150
<b>Total</b>		<b>22</b>	<b>30</b>	-	<b>250</b>	<b>300</b>	<b>550</b>
<b>Grand Total</b>		<b>90</b>		-			<b>2250</b>

<b>Course code</b>		<b>ADVANCED MICRO ECONOMICS-I</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>CORE PAPER – I</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		Microeconomics and Basic Mathematics	<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To impart knowledge on the behavior of the individuals and firms in making decision on the allocation of scarce resources.					
2	To equip the students with the basic tools and methods of economic analysis.					
3	To understand the fundamental concepts and theories of Microeconomics.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To understand the economic theories and concepts.					K1
2	To understand about the demand potentials.					K2
3	To analyze the production and cost.					K3
4	To gain knowledge and to evaluate the price and the output for various markets.					K4
5	To construct the knowledge of policy decision.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Theories of Demand</b>					<b>18 –hours</b>
Theories of demand – utility; Indifference curve - income and substitution effects, Slutsky theorem, compensated demand curve – Revealed preference theory; Revision of demand theory by Hicks.						
<b>Unit:2</b>	<b>Production Function</b>					<b>18—hours</b>
Production function – Multi Product firm; Elasticity of substitution; Euler's theorem; Technical progress and production function; Cobb-Douglas and CES. Traditional and modern theories of costs – Derivation of cost functions from production functions.						
<b>Unit:3</b>	<b>Marginal Analysis</b>					<b>18—hours</b>
Marginal analysis - price and output determination; perfect competition – short run and long run equilibrium of the firm and industry, price and output determination, supply curve; Monopoly – short run and long run equilibrium, price discrimination, monopoly control and regulation; Monopolistic competition – general and Chamberlin approaches to equilibrium, equilibrium of the firm and the group with product differentiation and selling costs, excess capacity under monopolistic and imperfect competition, criticism of monopolistic competition						
<b>Unit:4</b>	<b>Oligopoly Models</b>					<b>18—hours</b>
Oligopoly – Non-collusive models – Cournot, Bertrand, Edgeworth, Chamberlin, kinked demand curve and Stackelberg's solution) and collusive models - Cartels and mergers, price leadership – price and output determination under monopsony and bilateral monopoly;						
<b>Unit:5</b>	<b>Behavioral Models</b>					<b>18—hours</b>
Baumol's Sales revenue maximization model; Williamson's model of managerial discretion; Marris model of managerial enterprise; Full cost pricing rule; Behavioral model of						

the firm (Cyert and March Model).		<b>Total Lecture hours</b>	<b>90 –hours</b>
<b>Book(s) for study</b>			
1	Koutsoyiannis.A (1979) Modern Microeconomics, Macmillan Press, London.		
2	HL AHUJA (2009) Advanced Economic Theory S.Chand& Co		
<b>Book (s) for Reference</b>			
1	Baumol. W.J. (1982) Economic Theory and Operations Analysis. Prentice Hall of India		
2	Hirshleifer J and A. Glazer (1997) Price Theory and Applications, Prentice Hall of India, New Delhi.		
3	Henderson J.M. and R.E. Quandt (1980) Microeconomic Theory; A Mathematical Approach, McGraw Hill, New Delhi		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	S	S	M	S	S	M	S	M	M
<b>CO2</b>	M	S	S	S	S	S	M	S	M	M
<b>CO3</b>	M	S	S	M	M	S	M	M	S	M
<b>CO4</b>	M	S	S	M	M	S	M	M	S	M
<b>CO5</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ECONOMIC DEVELOPMENT AND POLICIES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>CORE PAPER – II</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	An understanding of Economic Growth and Development		<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	Create the knowledge about the economic theories and growth models.					
2	To understand the alternative theories of growth.					
3	To know the theories of underdevelopment and growth in developing countries.					
4	To equip with the current development issues.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To equip with strong economic fundamental governance and the process of economic development					K1
2	Provide an illustration of Indian economy.					K2
3	Construct the knowledge of economic planning and growth.					K3
4	To critically evaluate the current economic issues.					K4
5	To construct a critical study on the development of the economic scenario.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Measurement of Economic Development</b>				<b>18 – hours</b>	
Economic Development: Measurement of Economic Development- Schumpeter’s theory of Development-Keynes-Rostow’s stages of Economic Growth-Big Bush theory.						
<b>Unit:2</b>	<b>Doctrine of balanced growth</b>				<b>18—hours</b>	
Doctrine of balanced growth-Concept of unbalanced growth-Growth Models-Harrod-Domar – Joan Robinson’s model of capital accumulation-Meade’s Neo-classical model-Solow Model of Long Run Growth-Kaldor’s model of growth.						
<b>Unit:3</b>	<b>Human Resource Development</b>				<b>18—hours</b>	
Size and Growth rate of population in India-Human Resource Development-Measurement of Poverty-Poverty Eradication Programmes.						
<b>Unit:4</b>	<b>Economic planning</b>				<b>18—hours</b>	
Economic planning-Planning process in a mixed economy - Need for Foreign Capital-Forms of Foreign Capital-Multinational Corporations and foreign collaborations – India’s Balance of Payments-Export Promotion Policies.						
<b>Unit:5</b>	<b>Current Economic Issues</b>				<b>18--hours</b>	
Current Economic Issues- New Economic Policies since 1980-Privatisation: Policies and practices-Deregulations and Delicensing – Globalization – Public Sector Disinvestments- Liberal foreign trade regime–New EXIM Policies-Structural adjustments in the Indian Economy– Budgetary policies and control.						
					<b>Total Lecture hours</b>	<b>90 -- hours</b>
<b>Book(s) for study</b>						
1	S.M.Meier: “Leading Issues in Economic Development” Oxford University Press, New York.					
2	Kindleberger: Economic Development McGraw Hill, New York.					
<b>Book(s) for Reference</b>						
1	Indian Economic Survey for Different Years					

2	Human Development Report for Different Years: Published for the United Nations Development Programme (UNDP), Oxford University Press.
3	Survey of the Environment for different years: Published by The Hindu.
4	Indian Development Report for different years: Indira Gandhi Institute of Development Research, Oxford University Press.
5	Economic Development in India-Achievements and Challenges: A World Bank Study.

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>C01</b>	M	S	S	M	S	S	M	S	M	M
<b>C02</b>	M	S	S	S	S	S	M	S	M	M
<b>C03</b>	M	S	S	M	M	S	M	M	S	M
<b>C04</b>	M	S	S	M	M	S	M	M	S	M
<b>C05</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low



Course code	ECONOMICS OF MARKETING MANAGEMENT		L	T	P	C
Core	CORE PAPER – III		4	-	-	4
Pre-requisite	Basic concepts of Marketing		Syllabus Version		2022-23	
<b>Course Objectives:</b> The main objectives of this course are:						
1	To impart basic theoretical skills in several functional areas to understand market behaviour.					
2	To find and generate information/data needed to inform problem solving in marketing using appropriate methodology.					
3	To know contemporary marketing nature and management practice.					
4	To understand complex marketing issues by using relevant theories with regard to ethical conduct.					
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:						
1	To understand about market planning and market environment.					K1
2	To know about consumer behaviour in the context of market segmentation.					K2
3	To expose with product promotion branding and pricing techniques					K3
4	To express the various channels of distribution.					K4
5	To gain knowledge on marketing strategies and consumer rights.					K6
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>Marketing Management &amp; Consumer Behaviour</b>				<b>18 –hours</b>	
Marketing: Definition of marketing classifications of Markets-functions of marketing - objectives –importance of Marketing–Marketing and Economic Development- Marketing Environment- Marketing Management- ConsumerBehaviour.						
<b>Unit:2</b>	<b>Marketing Mix</b>				<b>18--hours</b>	
Marketing Mix: Concepts, components: Product mix, price mix, promotion mix and place mix. Product: Meaning, product planning, product positioning, New product development - productlifecycle-Branding-Packaging-Labeling-Pricing:pricingobjectives-Factors-Methods and procedures.						
<b>Unit:3</b>	<b>Promotion</b>				<b>18--hours</b>	
Promotion: Meaning of promotion mix-Components of promotion mix- Advertising: Message, advertisement budgeting-Sales promotion, personal selling and publicity.						
<b>Unit:4</b>	<b>Distribution</b>				<b>18--hours</b>	
Distribution: Channels of Distribution-Need, functions, types, evaluating the channel alternatives- Physical Distribution: Objectives, order processing, transport, storages and warehousing, inventory control.						
<b>Unit:5</b>	<b>Competitive marketing Strategies</b>				<b>18--hours</b>	
Competitive marketing Strategies: Leaders – Challengers – Followers – Nichers – Marketing control: Meaning, types, steps essentials of effective marketing control – Consumer protection: Needs – Methods of consumer protection - Consumer protection in India.						

	<b>Total Lecture hours</b>	<b>90 -- hours</b>
<b>Book(s) for study</b>		
1	Philip Kotler : Principles of Marketing-Prentice of India Private Limited. New Delhi	
2	S.M.Jha & : Marketing Management in Indian.	
<b>Book(s) for Reference</b>		
1	S.P.Singh : Perspective - Himalaya Publishing House, Delhi.	
2	R.S.Davar : Modern Marketing Management –Progressive Corporation, Bombay.	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	M	S	S	M	S	M	M
CO2	M	S	S	S	S	S	M	S	M	M
CO3	M	S	S	M	M	S	M	M	S	M
CO4	M	S	S	M	M	S	M	M	S	M
CO5	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	QUANTITATIVE TECHNIQUES FOR MANAGERIAL DECISIONS				L	T	P	C
Core	CORE PAPER – VIII				4	-	-	4
Pre-requisite	Application of quantitative techniques and their application in management decisions.				Syllabus Version		2022-23	
<b>Course Objectives:</b> The main objectives of this course are:								
1	To enable students to acquire knowledge on basic concepts of mathematics relevant to economic analysis.							
2	To provide the students with the theoretical and practical necessary to do applied quantitative techniques.							
3	To provide the students with the theoretical necessary to do applied quantitative techniques.							
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:								
1	To understand the various quantitative techniques in managerial practices.							K1
2	To apply the mathematical tools to test and formulate the economic theories.							K2
3	To analyze the various techniques of derivatives and their applications.							K4
4	To analyze the quantitative tools for managerial decision.							K5
5	To understand the practical knowledge of decision making.							K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>SET THEORY</b>						<b>15 –hours</b>	
Set Theory: Operations on sets and Law of set operations –solutions of simple equations – solutions of Quadratic equations – Solution of Linear simultaneous Equations in two and three variables.								

<b>Unit:2</b>	<b>RELATIONS AND FUNCTIONS</b>	<b>15—hours</b>
Relations and Functions: Functions of one variable— straight line, parabola, rectangular hyperbola Exponential and logarithmic functions. Concave and Convex functions – Applications in business Economics.		
<b>Unit:3</b>	<b>DERIVATIVES AND ITS APPLICATION</b>	<b>15--hours</b>
Derivatives and their interpretation and techniques of derivatives- Higher order derivatives- Relationships among Total, Average, and Marginal of Revenue and Cost and Elasticity of Function. Functions of two variables – Partial derivatives and their applications in economics.		
<b>Unit:4</b>	<b>OPTIMISATION</b>	<b>15--hours</b>
Optimisation problems involving one or two variables -- Applications in Economics – Homogeneous function and their properties, Euler’s Theorem, Cobb-Douglas and CES Production Function and their properties.		
<b>Unit:5</b>	<b>Title of the Unit (MATRIX ALGEBRA)</b>	<b>15--hours</b>
Matrix Algebra – Determinants and properties, Types of Determinants – Matrix, Null Matrix, Unit Matrix, Multiplication and Scalar Matrix, Operations – Addition and Subtraction of Matrix, Multiplication – Transpose of a Matrix and Inverse of Matrix. Solutions for simultaneous equations – Crammer’s Rule.		

	<b>Total Lecture hours</b>   <b>75 --hours</b>
<b>Book(s) for study</b>	
1	Mabbett A.J. "Workout Mathematics for Economists", ELBS, Macmillan.
2	Mehta and Madnani, "Mathematics for Economics", Sultan Chand, New Delhi.
<b>Reference Books</b>	
1. S.P. Gupta., "Quantitative Techniques"	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>C01</b>	S	M	S	S	M	M	M	M	M	M
<b>C02</b>	S	M	S	S	M	M	M	M	S	M
<b>C03</b>	S	S	S	S	M	M	M	M	M	M
<b>C04</b>	S	M	S	S	M	M	M	M	S	S
<b>C05</b>	S	M	S	S	M	M	M	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	TAMIL NADU ECONOMY			L	T	P	C
Core/Elective	Elective I / Group A			4	-	-	4
Pre-requisite	Knowledge on the performance of agriculture, industrial development and infrastructural facilities in Tamil Nadu.			Syllabus Version		2022-23	
<b>Course Objectives:</b>							
The main objectives of this course are:							
1	To understand the socio, economic and cultural conditions of Tamil Nadu.						
2	To impart knowledge on sector wise performance and its allocations.						
3	To enhance the knowledge about Tamil Nadu's administrative and political aspects.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To understand the process of growth of Tamil Nadu economy						K1
2	To comprehend the specific economic issues pertaining to the region.						K2
3	To get the knowledge of policy analysis regard to Tamil Nadu economy.						K3
4	To enhance the ability of critical thinking on Tamil Nadu economy and its various aspects.						K4
5	To develop the knowledge towards competitive examination skills.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>Nature and Scope of Tamil Nadu Economy.</b>						<b>18—hours</b>
Growth and development- Ingredients of economic growth- Sectoral growth in perspective- Inter-state Growth profiles- Economic development and structural Transformation-SDP trends- Planning. Nature and Scope of Tamil Nadu Economy.							
<b>Unit:2</b>	<b>Theory of Demographic Transition</b>						<b>18-hours</b>
Theory of Demographic Transition – Trends in Growth of Population- Sex ratio, Density, Literacy, Birth and Death rate- Urbanisation – Population Policy 2001.Composition of workforce – Unemployment and Poverty.							
<b>Unit:3</b>	<b>Agriculture Development in Tamil Nadu</b>						<b>18--hours</b>
Agriculture – Cropping Pattern – Irrigation – Agricultural Development in Tamil Nadu- Green Revolution – Agricultural marketing: regulated markets and Co- operative marketing – Non-Farm activities in Tamil Nadu- Food Security and Public distribution system.							
<b>Unit:4</b>	<b>Industrial Development in Tamil Nadu</b>						<b>18-hours</b>
Trends in Industrial Development in Tamil Nadu – Factors contributing to Industrial Development in Tamil Nadu- Small Scale Industries: Role, Problems, Promotional Measures for SSI - TIDCO, TANSI, SIPCOT, DIC – Economic Liberalisation Vis- a - Vis Industrial Growth.							
<b>Unit:5</b>	<b>Behavioral Models</b>						<b>18-hours</b>
Transport and Economic development- Nationalisation of Roadways-performance of public sector transports- Power development in Tamil Nadu-Rural Electrification. Social inputs and its development effects: Health, Education, Nutrition, water supply and environment.							

		<b>Total Lecture hours</b>		<b>90 -hours</b>						
<b>Book(s) for study</b>										
1	Government of Tamil Nadu, Various Issues of Tamil Nadu Economic Appraisal, Department of Statistics, Govt. of Tamil Nadu									
2	Leonard A C (2006) , Tamil Nadu Economy, Macmillan India Ltd, New Delhi									
3	Dr.Rajalakshmi , Tamil Nadu Economy									
4	Manickam.S(2006), Economic development of Tamil Nadu in perspective, Uyirmmmai, Chennai.78									
<b>Book(s) for Reference</b>										
1	MIDS (1988) , Tamil Nadu Economy : Performance and Issues, Oxford and IBN Publishing Co. Pvt. Ltd., New Delhi									
2	Naganathan M (2002), Tamil Nadu Economy: Trends and prospects, University Of Madras.									
<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	M	M	S	M	M	M
<b>CO2</b>	S	S	S	M	S	S	M	M	S	M
<b>CO3</b>	S	S	S	M	S	S	M	M	S	M
<b>CO4</b>	S	M	S	S	M	M	S	M	M	M
<b>CO5</b>	S	M	M	M	S	S	M	S	M	M

\*S-Strong; M-Medium; L-Low

Course code	PRINCIPLES OF MANAGEMENT		L	T	P	C
Elective	Elective I / Group B		4	-	-	4
Pre-requisite	Managerial analysis and decision-making.	Syllabus Version	2022-23			
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To learn the basic functions, principles and concepts of management.					
2	To understand the application of the principles in an organization.					
3	To enable the effective and barriers of communication in the organization.					
4	To study the system and process of effective controlling in the organization.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To summarize the nature and scope of management.					K1
2	To understand the importance of planning and decision making.					K2
3	To review the classification of organization and understanding its structure.					K3
4	To analysis the need for delegation, centralization and staffing.					K4
5	To outline the importance of controlling in an organization.					K6
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>Nature and Scope of Management</b>				<b>18 --hours</b>	
Nature and Scope of Management process – Management Science, Art, Development Management - Scientific Management.						
<b>Unit:2</b>	<b>Planning</b>				<b>18—hours</b>	
Planning: Meaning and purpose of planning - steps in planning - Types of planning. Decision making: process of Decision making - type of decisions – problems involved in decision making.						
<b>Unit:3</b>	<b>Organizing</b>				<b>18—hours</b>	
Organizing: Types of organization - Organizational structure - span of control -use of Staff units and committees.						
<b>Unit:4</b>	<b>Delegation</b>				<b>18—hours</b>	
Delegation: Delegation and centralization - Line and Staff relationship. Staffing: Sources of recruitment - Selection process - Training.						
<b>Unit:5</b>	<b>Directing</b>				<b>18—hours</b>	
Directing: Nature and purpose of Directing Controlling: Need for co-ordination - meaning and importance of controls - control process.						
					<b>Total Lecture hours</b>	<b>90 –hours</b>

<b>Book(s) for study</b>	
1	L.M. Prasad - Principles & Practices of Management, Sultan Chand & Sons, New Delhi.
2	VSP Rao, V.Hari Krishna –Management, Excel Books.
<b>Book(s) Reference</b>	
1	Dale, Ernest - Management theory and Practice.

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	M	S	M	M	M
CO2	S	M	S	S	M	M	S	M	M	M
CO3	S	S	S	S	M	M	S	M	M	M
CO4	S	M	S	S	M	M	S	M	M	M
CO5	S	M	S	S	M	M	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	BEHAVIOURAL ECONOMICS			L	T	P	C
<b>Core/Elective/Supportive</b>	<b>Elective I - Group C</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge of Psychology and Economics</b>			<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To acquire sufficient knowledge about economic decision-making						
2	To acquaint economic concepts with the role of psychology						
3	To equip with the theoretical predictions in the framework of behavioural economics.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To understand the concepts of behavioural economics.						K1
2	To understand about the emotions and rationality Judgment.						K2
3	To analyze the theories of behavioural economics.						K3
4	To gain knowledge on theories of choice and preferences.						K4
5	To construct the knowledge of theories of social preferences.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>							
<b>Unit:1</b>	<b>Introduction to Behavioural Economics</b>				<b>18 -- hours</b>		
Introduction to Behavioral Economics: Origins of Behavioural Economics, Decision-making under Neo-classical economic framework- rationality, optimization.							
<b>Unit:2</b>	<b>Role of Emotions and Rationality Judgment</b>				<b>18-- hours</b>		
Role of Intuition, Emotions, and Beliefs in decision making. Bounded Rationality Judgment under Risk & Uncertainty: Heuristics & Biases Heuristics:-Representativeness, Substitution, Availability, Affect, Anchoring. Framing Biases: Cognitive and emotional biases.							



<b>Unit:3</b>	<b>Theories of Behavioural Economics</b>	<b>18-- hours</b>
Choice Under Risk & Uncertainty Expected Utility Prospect Theory – Reference Points – Risk Concept and Understanding – Loss Aversion – Shape of Utility Function – Decision Weighting – Probabilistic Judgment. Mental Accounting, Framing Mental Accounts Fungibility& Labels Hedonic Editing.		
<b>Unit:4</b>	<b>Theories of Choice and Preferences</b>	<b>18-- hours</b>
Intertemporal Choice, Temporal Choice, Construal Level Theory, Valuation of Delayed Consumption Preferences for Sequences of Outcomes, Hyperbolic Discounting, Preference Reversal.		
<b>Unit:5</b>	<b>Theories of Social preferences</b>	<b>18-- hours</b>
Behavioural Game Theory Social Preferences: Fairness, trust, cooperation, reciprocity, Norms Limited Strategic Thinking Choice architecture: Nudge, Nudge vs. boost, Behavioural public policy.		
<b>Total Lecture hours</b>		<b>90 –hours</b>
<b>Text Book(s)</b>		
1	Erik Angner, “A Course in Behavioral Economics”, Palgrave Macmillan	
2	M. Altman, Handbook of Contemporary Behavioural Economics: Foundation and Developments (2007), Prentice Hall India	
<b>Reference Books</b>		
1	E. Cartwright, Behavioural Economics (2011), Routledge	
2	D. Kahneman, Thinking Fast and Slow (2011), Allen Lane, Penguin Books	
3	G.Loewenstein, Exotic Preferences: Behavioural Economics and Human Motivation (2007), Oxford University Press	
4	SanjitDhami, "The Foundations of Behavioral Economic Analysis", Oxford University Press (2016)	
5	Behavioral Economics: Toward a New Economics by Integration with Traditional Economics by Ogaki, Masao, Tanaka, Saori C. Published by Springer, ISBN 978-981-10-6439-5	
6	Nick Wilkinson; Matthias Klaes (2012), An Introduction to Behavioral Economics, 2nd Edition, Palgrave Macmillan.	
7	World Development Report 2015: Mind, Society, and Behavior	



**Second  
Semester**

<b>Course code</b>		<b>ADVANCED MICRO ECONOMICS-II</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>CORE PAPER – V</b>	4	-	-	4
<b>Pre-requisite</b>	Application of micro economic behaviour and models.		<b>Syllabus Version</b>	2022-23		
<b>Course Objectives:</b> The main objectives of this course are:						
1	To inculcate the knowledge of theories of distribution and economic behavior under Uncertainty					
2	To understand the microeconomic concepts and its applications in real-life situations.					
3	To know about the partial and general equilibrium conditions.					
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:						
1	To understand basic concepts of micro economics and acquire analytical skills to analyse problems of economic policy.					K1
2	To understand the theoretical arguments.					K2
3	To analyse various theories of distribution.					K3
4	To gain knowledge of the optimal conditions and principles.					K4
5	To construct the economic models as an approach.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						
<b>Unit:1</b>	<b>THEORY OF DISTRIBUTION</b>				<b>15--hours</b>	
Neo- classical approach – Marginal productivity theory; Product exhaustion theorem; Elasticity of technical substitution, technical progress and factor shares; Theory of distribution in imperfect product and factor markets; Macro theories of distribution – Ricardian, Marxian, Kalecki and Kaldor's.						
<b>Unit:2</b>	<b>WELFARE ECONOMICS</b>				<b>15--hours</b>	
Pigovian welfare economics; Pareto optimal conditions; Value judgement; Social welfare function; Compensation principle; Theory of Second Best – Arrow's impossibility theorem.						
<b>Unit:3</b>	<b>PARTIAL AND GENERAL EQUILIBRIUM</b>				<b>15--hours</b>	
Partial and general equilibrium, Walrasian excess demand and input – output approaches to general equilibrium, monopolies; two sector models, relationship between relative commodity and factor prices.						
<b>Unit:4</b>	<b>INDIVIDUAL BEHAVIOUR</b>				<b>15--hours</b>	
Individual behaviour towards risk, expected utility and certainty equivalence approaches, risk and risk aversion – cost and risk, risk pooling and risk spreading, mean-variance analysis and portfolio selection.						
<b>Unit:5</b>	<b>DECISION MAKING</b>				<b>15--hours</b>	
Decision Making under uncertainty - Optimal consumption under uncertainty - competitive firms under uncertainty - factor demand under uncertainty - criteria for decision under uncertainty - stochastic models in inventory demand.						

		<b>Total Lecture hours</b>		<b>75 –hours</b>						
<b>Book(s) for study</b>										
1	Stigler, G. (1996) Theory of Price, Prentice Hall of India, New Delhi.									
2	Sen, A (1999) Microeconomics: Theory and Applications. Oxford University Press, New Delhi.									
<b>Book(s) for Reference</b>										
1	Baumol. W.J. (1982) Economic Theory and Operations Analysis. Prentice Hall of India, New Delhi.									
2	Baumol. W.J. (1982) Economic Theory and Operations Analysis. Prentice Hall of India, New Delhi.									
<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>C01</b>	M	S	S	M	S	S	M	S	M	M
<b>C02</b>	M	S	S	S	S	S	M	S	M	M
<b>C03</b>	M	S	S	M	M	S	M	M	S	M
<b>C04</b>	M	S	S	M	M	S	M	M	S	M
<b>C05</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>MACRO ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>		<b>CORE PAPER – VI</b>	4	-	-	4
<b>Pre-requisite</b>	Macroeconomic models, theories and techniques.		<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To develop knowledge on theories, models and policies this governed the functioning of the different domains of the macroeconomic system.					
2	To know of the major issues in the field of macroeconomics.					
3	To provide knowledge on the macroeconomic techniques.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To understand the sectoral flow of national income in the economy.					K1
2	To evaluate a critical insight on classical and Keynesian macro economics models.					K2
3	To evaluate critically on consumption function and investment function.					K3
4	To know the contributions of Friedman, Phelps and Phelps in uncertainty.					K4
5	To construct the sound knowledge of macro economics policy.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						
<b>Unit:1</b>	<b>NATIONAL ECONOMIC ACCOUNTING</b>					<b>15 – hours</b>
Flow of Funds in National Economy – National Products and Related Concepts – Sectoral Accounts – Measurements and Problems in National Income Accounting – Use of Current and Constant Price indices – Basic Concepts.						
<b>Unit:2</b>	<b>GENERAL EQUILIBRIUM</b>					<b>15--hours</b>
Basic Equilibrium in Classical Model – Basic Keynesian Model – Equilibrium in the Product and Money Markets – Multiplier – Full Employment Budget Surplus – The Liquidity Trap – Employment and Wage Rigidity – General Equilibrium in Goods and Bond Markets.						
<b>Unit:3</b>	<b>CONSUMPTION FUNCTION</b>					<b>15--hours</b>
Consumption Function – Keynes Absolute Income Hypothesis – The Relative Income Hypothesis – Permanent Income Hypothesis – The Life Cycle Hypothesis.						
<b>Unit:4</b>	<b>INVESTMENT FUNCTION</b>					<b>15--hours</b>
Investment Demand – Keynesian Approach – Accelerator – Multiplier – The Post-Keynesian Approach - The Neo- Keynesian Approach – Lags in Investment Demand – Stability and Slope of the IS Curve and PolicyConsequences.						
<b>Unit:5</b>	<b>GENERAL ECONOMICS POLICY</b>					<b>15--hours</b>
Role of Expectation – Uncertainty and Economics and Policy – The Phillips Curve – Expectation in Short-run Phillips Curves – The Friedman and Phelps Argument – The shifting of Short-run Phillips Curve – The Long-run Phillips Curve.						

	<b>Total Lecture hours</b>	<b>75 – hours</b>
<b>(s) for study</b>		
1	Gupta S.B. (1983), “Monetary Economics”, S.Chand Co., Delhi.	
2	McConnell C.R.& Gupta H.C. (1987) ”Introduction to Macro Economics”, Tata McGraw Hill Delhi.	
<b>Book(s) for Reference</b>		
1	Boland D. (1982), “The foundations of Economic Method”, George Allen and Unwin, London.	
2	Branson W.H. (1972),”Macro Economic Theory & Policy”, Harper & Row, New York.	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	S	S	M	S	S	M	S	M	M
<b>CO2</b>	M	S	S	S	S	S	M	S	M	M
<b>CO3</b>	M	S	S	M	M	S	M	M	S	M
<b>CO4</b>	M	S	S	M	M	S	M	M	S	M
<b>CO5</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	AGRICULTURAL ECONOMICS		L	T	P	C
Core	CORE PAPER –VII		4	-	-	4
Pre-requisite	Agricultural economics policies and issues.		Syllabus Version		2022-23	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To provide a detailed treatment of issues in agricultural economics to those intending to specialize in this area.					
2	To understand the policy issues relevant to Indian agricultural economics.					
3	To know about agriculture marketing functions and costs.					
4	To understand the role of capital and rural credit for agriculture.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To understand the nature and scope of agricultural economics.					K1
2	To understand the various land reforms and the importance of land policies.					K2
3	To familiarize with production functions in agriculture and productivity.					K3
4	To analyse agriculture marketing functions.					K4
5	To construct the role of capital and rural credit.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>						
<b>Unit:1</b>	<b>NATURE OF AGRICULTURE ECONOMICS</b>				<b>15—hours</b>	
Nature and scope of agricultural economics; Traditional agriculture and its modernization; Role of agriculture in economic development; Interdependence between agriculture and industry. Models of interaction between agriculture and the rest of the economy; Agricultural development, poverty and environment.						
<b>Unit:2</b>	<b>LAND REFORMS</b>				<b>15—hours</b>	
Principles of land utilization – Land distribution – Structure and trends – Land values and rent – Land tenures and farming systems – Peasant, capitalist, collective and state farming Tenancy and crop Sharing – Forms, incidence and effects – Land reform measures and performance.						
<b>Unit:3</b>	<b>RESOURCE USE AND EFFICIENCY</b>				<b>15—hours</b>	
Resource use and efficiency; Production function analyses in agriculture - Factor combination and resource substitution - Cost and supply curves - Size of farm and laws of returns - Farm budgeting and cost concepts – Supply response of individual crops and aggregate supply.						
<b>Unit:4</b>	<b>AGRICULTURAL MARKETING</b>				<b>15—hours</b>	
Agricultural markets and marketing efficiency – Marketing functions and costs – Market structure and imperfections – Regulated markets – Marketed and marketable surplus – Behaviour Of agricultural prices – Cobweb model; Price and income stability; State policy with respect to agricultural marketing – Warehousing Prices – Taxation and crop insurance – Terms of trade between agricultural and non- agricultural prices – Need for state intervention – Objectives of agricultural price policy – Instruments and evaluation – Food security in India and public distributionsystem.						
<b>Unit:5</b>	<b>AGRICULTURAL CREDIT</b>				<b>15—hours</b>	
Role of capital and rural credit – Organized and unorganized capital market - Rural savings and capital formation – Characteristics and sources of rural credit – Institutional andnon-institutional						

– Reorganization of rural credit – cooperatives, commercial banks, regional rural banks – Role of NABARD.	
<b>Total Lecture hours</b>	
<b>75 – hours</b>	
<b>Book(s) for study</b>	
1	Kaur. R. (1975) Agricultural Price Policy in Economic Development, Kalyani Publishers, Delhi.
2	Raj. K.N. et.al. (1988), Essays in the Commercialization of Indian Agriculture. Oxford University Press, New Delhi.
<b>Book(s) for Reference</b>	
1	Bardhan.P. (1984) Land, Labour and Rural Poverty, Oxford University Press, New Delhi
2	Chadha, G.K. and A.N. Sharma (1997) Growth, Employment and Poverty : Change and Continuity in Rural India, Vikas Publishing, New Delhi.

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	M	S	S	M	S	M	M
CO2	M	S	S	S	S	S	M	S	M	M
CO3	M	S	S	M	M	S	M	M	S	M
CO4	M	S	S	M	M	S	M	M	S	M
CO5	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	RESEARCH METHODOLOGY			L	T	P	C
Core/Elective	CORE PAPER – XI			4	-	-	4
Pre-requisite	The fundamental methods and techniques of academic research in social sciences and business management.			Syllabus Version		2022-23	
<b>Course Objectives:</b> The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>To develop the understanding of the basic framework of research process.</li> <li>To learn various research designs and techniques</li> <li>To develop an understanding of the ethical dimensions of conducting applied research.</li> <li>To appreciate the components of scholarly writing and evaluate its quality.</li> </ol>							
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able to:							
1	To identify and formulate the research problem.						K1
2	To compose the objectives of research and framing hypothesis.						K2
3	To develop the skills in the collection of data and its analysis						K3
4	To acquire the knowledge on the interpretation of results.						K4
5	To compile the research report.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							



<b>Unit:1</b>	<b>Meaning of Research</b>	<b>15hours</b>
Meaning of Research – objective of Research – formulating of Research problem – formulation of hypothesis – Research Design: Pure, Applied, Action and Evaluation Research..		
<b>Unit:2</b>	<b>Sources of Data</b>	<b>15hours</b>
Sources of data: Primary and Secondary sources-methods of Data collection: census and sample survey – Data collection instruments: observation, Interview, schedules and Questionnaires – Sampling Design: Probability and non-probability sampling methods. Secondary data sources in India.		
<b>Unit:3</b>	<b>Analysis of Data</b>	<b>15hours</b>
Analysis of Data: Measures of central tendency: Mean Median and Mode – Measures of Dispersion: Range, mean deviation, standard deviation variance, coefficient of variation - Economics Applications.		
<b>Unit:4</b>	<b>Testing of Hypothesis</b>	<b>15 hours</b>
Testing of hypothesis: Parametric and non-parametric tests –Standard test of hypothesis: Z” test, t- test, F-test and ANOVA, Chi square test - Association of Attributes.		
<b>Unit:5</b>	<b>Presenting Results</b>	<b>15 hours</b>
Presenting results: written and oral reports –stages in drafting – written researches report – Layout of research report – Footnotes and Bibliography.		
	<b>Total Lecture hours</b>	<b>75hours</b>

<b>Book(s) for study</b>	
1	C.R.Kothari- Research Methodology, Methods and Techniques – Willey EasternLtd., 1988
2	A.N.Sadhu Research Methodology and Social sciences – Himalaya Amarjit Singh PublishingHouse.1996.
<b>Book(s) for Reference</b>	
1	W.J.Goode and P.K.Hatt, ” Methods in Social Research”, McGraw Hill International Edition
2	B.N.Gosh – Scientific Method and Social Research – Sterling Publishers (P) Ltd.,1992.

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	S	M	S	M	M	M	S	M	M
<b>CO2</b>	M	S	M	S	S	M	M	S	M	S
<b>CO3</b>	M	S	M	S	S	M	M	S	M	S
<b>CO4</b>	M	S	M	S	S	M	M	S	M	S
<b>CO5</b>	M	S	M	S	M	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	INDUSTRIAL ECONOMICS			L	T	P	C
Core	CORE PAPER-IX			4	-	-	4
Pre-requisite	Understanding of industrial policies and development.			Syllabus Version		2022-23	
<b>Course Objectives:</b> The main objectives of this course are:							
1	To know about the industrial efficiency and business motives.						
2	To understand the broad range of the methods and models applied by economists in the analysis of firms and industries.						
3	To provide adequate knowledge on the determinants of industrial productivity and labour productivity.						
4	It motivates the student to become an entrepreneur.						
<b>Expected Course Outcomes:</b> On the successful completion of the course, student will be able:							
1	To understand the scope of industrial economics and motives of the organizational firm.					K1	
2	To evaluate economic theories of location and their importance.					K2	
3	To investigate the scope and significance of industrial productivity.					K3	
4	To examine the concentration of economic power and the application of industrial policies.					K4	
5	To evaluate the industrial backwardness and regional disparities.					K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>							
<b>Unit:1</b>	<b>INDUSTRIAL EFFICENCY</b>					<b>15 –hours</b>	
The scope of Industrial economics - Industrial efficiency- the determinants of economic efficiency-measurement of efficiency levels- Types of organizational Firm and alternative motivesof the Firm- Business motives- The efficiency and the size of the Firm.							
<b>Unit:2</b>	<b>INDUSTRIAL LOCATION</b>					<b>15—hours</b>	
Industrial location- The Geographical contribution - The economic theories of Location- Weber’s theory of location- Split location- Sargent Florence theory -Losch theory- Industrial location trends in India.							
<b>Unit:3</b>	<b>INDUSTRIAL PRODUCTIVITY</b>					<b>15—hours</b>	
Industrial productivity- Measurement of Productivity- Scope and significance-Tools of productivity- Factors influencing industrial productivity- Labour productivity-determinants of productivity.							
<b>Unit:4</b>	<b>INDUSTRIAL POLICIES</b>					<b>15—hours</b>	
Industrial policies- 1948 to till date- Concentration of Economic Power-Measurement of concentration- LPG Policies-Industrial combination-Types-Growth-Forms-Combination in India.							
<b>Unit:5</b>	<b>REGIONAL DEVELOPMENT</b>					<b>15—hours</b>	
Balancedregionaldevelopment-Indicatorsofregionalimbalance-DistributionofIndustries-Causesofeconomicbackwardness-Criteriaforindustrialbackwardness-IdentificationofIndustrial							

backward areas Policy measures to remove regional disparities.

	<b>Total Lecture hours</b>	<b>75 –hours</b>
<b>Book(s) for study</b>		
1	Cherunilam F (1994) Industrial Economics: Indian perspective Himalaya Publishing House, Mumbai.	
2	Hay, D, and D.J.Morris(1979) Industrial Economics: Theory and Evidence. Oxford University Press, New Delhi.	
<b>Book(s) for Reference</b>		
1	Ahluwalia, I.J (1985), Industrial Growth in India, Oxford University press, New Delhi.	
2	Barthwal.R.R (2006) Industrial Economics, New Age International Publishers, New Delhi.	

**Mapping with Programme Outcomes**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C01	S	M	S	S	M	M	S	M	M	M
C02	S	M	S	S	M	M	S	M	M	M
C03	S	S	S	S	M	M	S	M	M	M
C04	S	M	S	S	M	M	S	M	M	M
C05	S	M	S	S	M	M	S	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ENTREPRENEURIAL DEVELOPMENT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective</b>		<b>Elective II /Group A</b>	4	-	-	4
<b>Pre-requisite</b>	Entrepreneurship and women entrepreneurs in business.		<b>Syllabus Version</b>		<b>2022-23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To understand the role and importance of entrepreneurship for economic development.					
2	To develop personal creativity and entrepreneurial initiative with business ideas.					
3	To know about the resources needed for the successful development of entrepreneurial ventures.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To understand the importance and characteristics of entrepreneurs.					K1
2	To analyse knowledge of the sources of business ideas.					K2
3	To motivate the women entrepreneurs in the present scenario of the economy.					K3
4	To be familiar with the objectives of training and finance.					K4
5	To be analysed with the objectives of training and finance.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>ENTREPRENEURSHIP</b>					<b>15 – hours</b>
Entrepreneurship – Definition, importance and characteristics of Entrepreneurship - Functions, types, and motives of Entrepreneurship - Growth of Entrepreneurs in India.						
<b>Unit:2</b>	<b>BUSINESS AND ITS SOURCES</b>					<b>15—hours</b>
Search for a business idea – sources - processing and selection – selection of types of organization – project classification and identification – project objectives – internal and external constraints – format for a report.						
<b>Unit:3</b>	<b>WOMEN ENTREPRENEURSHIP</b>					<b>15hours</b>
Functions and role of women Entrepreneurs and rural Entrepreneurs- their problems – selection of industry by women Entrepreneurs – types of industries / business for women Entrepreneurs and rural Entrepreneurs.						
<b>Unit:4</b>	<b>TRAINING AND FINANCE</b>					<b>15—hours</b>
Training and Finance : objectives of training – phase of EDP – special agencies for training – institutional finance with special emphasis of commercial banks, IDBI, IFCI, ICICI, IRBI, SFC, SIDFI, SIPCOT, Khadi and Village Industries Commission – Micro Finance.						
<b>Unit:5</b>	<b>ROLE OF GOVERNMENT IN ENTREPRENEURSHIP</b>					<b>15—hours</b>
Role of Central and State Government in promoting Entrepreneurship – Introduction of variousincentives,subsidiesandgrants–FiscalandTaxconcessionsavailable–Roleof Entrepreneurship.						

		<b>Total Lecture hours</b>	<b>75 –hours</b>
<b>Note: The Question Paper shall cover 100% Theory.</b>			
<b>Book(s) for study</b>			
1	E.Gordon&K.Natarajan - Entrepreneurial Development, Himalaya Publishing House New Delhi, 2005.		
2	C.B.Gupta& NP Srinivasan - Entrepreneurial Development, Sultan Chand & Sons New Delhi, 2003.		
<b>Book(s) for Reference</b>			
1	P.Saravanavel - Entrepreneurial Development, Principles, Policies & Programmes, Eee Pee Key, Publishing House, Chennai 1997.		
2	Renu Arora & S.K.Sood- Entrepreneurial Development.		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	M	M	S	M	M	M
<b>CO2</b>	S	S	M	M	S	M	S	S	M	M
<b>CO3</b>	S	S	S	S	S	S	M	M	M	M
<b>CO4</b>	S	S	M	M	S	M	S	M	S	M
<b>CO5</b>	S	M	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	INVESTMENT MANAGEMENT			L	T	P	C
Elective	Elective II /Group B			4	-	-	4
Pre-requisite	Investment concepts, techniques and financial institutions.			Syllabus Version		2022-23	
<b>Course Objectives:</b>							
The main objectives of this course are:							
1	To understand about the investment strategies designed to meet the financial goals.						
2	To provide an overview of trading processes and various financial instruments.						
3	To assess the current and long-term savings and investment alternatives.						
4	To know about the performance of portfolio management.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To understand the scope and importance of investment.						K1
2	To analyse the role of capital market and classification of trading activity.						K2
3	To analyze investment management.						K3
4	To evaluate the various alternatives in investment.						K4
5	To understand the scope and elements of portfolio management.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							
<b>Unit:1</b>	<b>INVESTMENT</b>					<b>15 – hours</b>	
Nature, Meaning and scope of Investment – Importance of Investment – Factors influencing Investment – Investment media – Features of investment Programme – Investment Process – Development of Financial system in India.							
<b>Unit:2</b>	<b>CAPITAL MARKET</b>					<b>15-- hours</b>	
Capital Market – New issue Market and stock exchange in India – B.S.E – N.S.E – OTCEI – Kinds of Trading activity – Listing of Securities – SEBI and its Role and guidelines.							
<b>Unit:3</b>	<b>INVESTMENT ANALYSIS</b>					<b>15--hours</b>	
Fundamental and Technical Analysis – Security evaluation – Economic Analysis – Industry Analysis – Company Analysis – Technical Analysis – Portfolio Analysis.							
<b>Unit:4</b>	<b>INVESTMENT ALTERNATIVES</b>					<b>15—hours</b>	
Investment Alternatives – Investment in Bonds, Equity Shares, Preference shares, Government Securities – Mutual Funds – Real Estate – Gold – Silver – Provident fund – Unit Trust – National Savings Scheme – LIC.							
<b>Unit:5</b>	<b>PORTFOLIO MANAGEMENT</b>					<b>15--hours</b>	
Portfolio Management – Nature, Scope – SEBI Guidelines to Portfolio Management – Portfolio Investment Process – Elements of Portfolio Management – Portfolio Revision – Needs and Problems.							
					<b>Total Lecture hours</b>		<b>75hours</b>
<b>Note: The Question Paper shall cover 100% Theory.</b>							

<b>Book(s) for study</b>	
1	Investment Management - Francis Cherunilam.
2	Investment Management - Khan and Jain.
<b>Book(s) for Reference</b>	
1	Investment Management - Preeti Singh.
2	Investment Management - V.K.Bhalla.

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	M	M	S	M	M	M
<b>CO2</b>	S	S	M	M	S	M	S	S	M	M
<b>CO3</b>	S	S	S	S	S	S	M	M	M	M
<b>CO4</b>	S	S	M	M	S	M	S	M	S	M
<b>CO5</b>	S	M	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low



Course code	FINANCIAL SERVICES			L	T	P	C
Elective	Elective II /Group C			4	-	-	4
Pre-requisite	Financial services and activities			Syllabus Version	2022-23		
<b>Course Objectives:</b>							
The main objectives of this course are:							
1	To introduce fee-based financial services provided by financial companies,						
2	To know the salient features and importance of financial services.						
3	To understand the present position in the Indian financial sector.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To understand with the services offered by various financial services companies.						K1
2	To analyze the profitability of stock broking and depository services.						K2
3	To analyze the profitability of stock broking and depository services.						K3
4	To understand the different ventures to invest money and the concept of mutual funds and select profitable funds.						K4
5	To examine contemporary issues including the level of personal saving						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6– Create</b>							
<b>Unit:1</b>	<b>MERCHANT BANKING</b>					<b>15 - hours</b>	
Merchant Banking – Meaning, nature and functions; merchant banking in India, role in issue management; classification and regulation of merchant bankers by SEBI. NBFC- Types of NBFC- NBFC in India..							
<b>Unit:2</b>	<b>Stock Broking &amp; Depository Services</b>					<b>15-- hours</b>	
Stock Broking – meaning- types of stockbrokers-sub-brokers- stock broking in India- e-broking (meaning). Indian experience Depository Services: meaning- role of depositories and their services- Functioning of depository system- Depositories in India – NSDL & CDSL- Depository participants (DPs) and their role.							
<b>Unit:3</b>	<b>Credit Rating &amp; Securitization</b>					<b>15-hours</b>	
Credit Rating: meaning- rating methodology- importance of credit rating- credit rating agencies in India including Small & Medium Enterprises Rating Agency (SMERA). Securitization of debt – Meaning- Features-Types- Benefits of Securitization- Issues in Securitization.							
<b>Unit:4</b>	<b>MUTUAL FUNDS</b>					<b>15 - hours</b>	
Meaning of Mutual Funds – Type of Mutual Funds – Advantages of mutual Funds – Mutual Funds in India- SEBI Guidelines on Mutual Funds.							
<b>Unit:5</b>	<b>Leasing, Hire Purchase and Venture Capital</b>					<b>15-hours</b>	
Lease Financing: Meaning- definition and types of lease agreements- advantages and disadvantages from the point of view of lesser and lessee. Hire Purchase Finance: meaning, concepts of hire purchase finance. Venture Capital Financing: meaning, importance/need, scope of venture capital finance.							

		<b>Total Lecture hours</b>	<b>75hours</b>
<b>Note: The Question Paper shall cover 100% Theory.</b>			
<b>Book(s) for study</b>			
1	Agarwal O. P. (2005): Environment and Management of Financial Services, Mumbai, Himalaya.		
2	Batra G. S. (1999): Financial Services: New Innovations, New Delhi, Deep& Deep.		
3	Gurusamy: Management of Financial Services		
<b>Book(s) for Reference</b>			
1	Bhole L. M. &Mahakud J. (2009): Financial Institutions and Markets: Structure, Growth & Innovations, New Delhi, Tata-McGraw Hill, 5e.		
2	Khan M. Y. (2004): Financial Services, New Delhi, Tata McGraw-Hill.		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	M	M	M	S	M	M	M
<b>CO2</b>	S	S	M	M	S	M	S	S	M	M
<b>CO3</b>	S	S	S	S	S	S	M	M	M	M
<b>CO4</b>	S	S	M	M	S	M	S	M	S	M
<b>CO5</b>	S	M	S	M	M	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

A purple scroll graphic with a white outline and a white scroll effect at the top and bottom. The text "Third Semester" is centered in white.

**Third Semester**

<b>Course code</b>	<b>MONETARY THEORY AND POLICES</b>		<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core</b>	<b>CORE PAPER – X</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Theories on monetary and policies		<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To understand basic concepts and theories						
2. To know about the role of central banks and monetary policies for economic development						
3. To provide insight about the relationship of the risk and return of the investors						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To gain sound knowledge in monetary theories and banking practices.					K2
2	To evaluate India's monetary problems					K5
3	To examine role and functions of commercial and central banks					K4
4	To gain the knowledge about the Monetary system of LDCs.					K2
5	To analyse the recent development in the monetary economics.					K1
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Concepts of Money</b>				<b>15hours</b>	
Concepts–The Role of Money in an Economy–Fisher's Quantity Theory- Cambridge Cash Balance Approach- Keynesian Theory- Modern Quantity Theory; Friedman's Approach– Don Patinkin's Theory–Tobin's Portfolio Analysis – Inventory Theory of Money (Baumol)						
<b>Unit:2</b>	<b>Supply of Money</b>				<b>15hours</b>	
High Power Money – Money Multiplier Process – Determinants of Money Multiplier - Factors Affecting– Credit Creation by Commercial Banks – NBFI.						
<b>Unit:3</b>	<b>Central Banks</b>				<b>15 hours</b>	
Role of Central Banks - Development and Promotional – Functions – Credit control Methods – RBI: Role and Functions Central Banks in UK and USA.						
<b>Unit:4</b>	<b>Money Markets</b>				<b>15-hours</b>	
Characteristics of Developed and Underdeveloped Money market-The Indian Money market- Capital Market; Primary and Secondary Market – Stock Exchange: role and its Functions, Capital issue control and its aim -SEBI.						
<b>Unit:5</b>	<b>Monetary Policy</b>				<b>15-hours</b>	
Role of Monetary Policy in Economic Development -Goals, Targets and Indicators of Monetary Policy-Lags in monetary Policy-Inflation-Phillips Curve–Narasimham Committee report.						
<b>Total Lecture hours</b>					<b>75hours</b>	

<b>Book(s) for study</b>	
1	Gurley and Shaw: Money in a Theory of Finance
2	Suraj B Gupta, Monetary Economics.
<b>Book(s) for Reference</b>	
1	Chandler, L. V., Economics of Money and banking (UBS) Revised Edition.
2	Laidler, David. The Demand for Money (Allied Publisher
3	Harry G Johnson, Further Essay in Monetary Economics (Allen & Unwin).
4	Milton Friedman, Studies in the Quantity Theory of Money.
5	Milton Friedman: Inflation – Causes and Consequences
6	Gail E. Makinen: Money, Interest and the Price Level, (Prentice Hall, 1978).

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	S	S	M	M	M	M
CO2	M	M	S	M	S	S	S	M	M	M
CO3	M	M	M	M	S	M	M	M	M	M
CO4	M	S	M	S	M	S	S	S	M	M
CO5	M	M	M	M	S	S	M	M	M	M

\*S-Strong; M-Medium; L-Low.

Course code	ECONOMETRICS				L	T	P	C
Core	CORE PAPER – IV				4	-	-	4
Pre-requisite	Econometric models and methodology of econometric research.				Syllabus Version		2022-23	
<b>Course Objectives:</b>								
The main objectives of this course are:								
1	To understand the methodology of econometrics with the help of statistical and mathematical techniques.							
2	To test the priority relationship among economic variables.							
3	To approach economic theory quantitatively.							
4	To enable hypothesis testing and model selection							
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able:								
1	To demonstrate the econometrics models.							K1
2	Understand the nature and scope of econometrics as a social science							K2
3	Use appropriate tests to detect autocorrelation							K4
4	Evaluating the simultaneous equation model							K5
5	To develop the skills of selecting appropriate data and estimate an econometric model.							K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>Scope of Econometrics</b>						<b>18 –hours</b>	
Definition, scope and division of econometrics- methodology of econometric research- correlation theory- simple linear regression model- justification for the inclusion of U- ordinary least Squares Method (OLS)								

<b>Unit:2</b>	<b>Test of Significance and the Estimates</b>	<b>18—hours</b>
Statistical test of significance of the estimates- properties of the least squares estimates- multiple regression and other extensions of the simple linear regression model- regression and analysis of variance.		
<b>Unit:3</b>	<b>OLS Models</b>	<b>18—hours</b>
OLS assumptions –violation of OLS assumptions - Autocorrelation, hetroskedasticity, multicollinearity- error in variables, dummy variables, lagged variables and distributed lag models.		
<b>Unit:4</b>	<b>Models of Simultaneous Relationships</b>	<b>18—hours</b>
Models of simultaneous relationships: simultaneous equation models-problem of identification- conditions of identification – methods of estimations –Ordinary Least Squares (OLS), Two-Stage Least Squares(2SLS), Three- Stage Least Squares(3SLS).		
<b>Unit:5</b>	<b>Estimation of compound rate of growth</b>	<b>18—hours</b>
Estimation of compound rate of growth - consumption function, estimation of elasticity of demand- Estimation of production function- Measurement of technical change.		

		<b>Total Lecture hours</b>	<b>90 –hours</b>
<b>Book(s) for study</b>			
1	Koutsoyiannis.A.	: Theory of econometrics: an introductory exposition of the econometric methods”, educational low-priced booksscheme, Macmilan education Ltd., (1992)	
2	Damodar Gujarati	: Basic Econometrics, Printice Hall.(2004)	
<b>Note: problems may be asked only from the following areas</b>			
(a) correlation			
(b) simple and multipleregression			
(c) compound rate ofgrowth			

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	M	M	M	M	M	M
<b>CO2</b>	S	M	S	S	M	M	M	M	S	M
<b>CO3</b>	S	S	S	S	M	M	M	M	M	M
<b>CO4</b>	S	M	S	S	M	M	M	M	S	S
<b>CO5</b>	S	M	S	S	M	M	M	M	S	S

\*S-Strong; M-Medium; L-Low

Course code		Introduction to SPSS	L	T	P	C
Core /Elective		Core Paper XII	4	-	-	4
<b>Pre-requisite</b>		Basic components of SPSS and its applications	<b>Syllabus Version</b>		<b>2022-23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To enable the students to learn the basic features of SPSS						
2. To understand the different Tools of SPSS and its application in economics.						
3. To process the available data for making meaningful analysis.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
CO1	To become familiar with basic knowledge on SPSS languages and operating packages					K1
CO 2	Understand the Coding and Decoding of Data					K2
CO 3	Train the students in Descriptive Statistics.					K3
CO 4	Make the students to understand the Basic Tools in SPSS					K4
CO 5	Provide the basic knowledge in Applications in SPSS					K1
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>Introduction to SPSS</b>				<b>15- hours</b>	
SPSS Environment: data editor, output viewer, syntax editor – Data view window – SPSS Syntax – Data creation – Importing data – Variable types in SPSS and Defining variables – Creating a Codebook in SPSS.						
<b>Unit:2</b>	<b>Working with Data</b>				<b>15- hours</b>	
Computing Variables - Recoding (Transforming) Variables: Recoding Categorical String Variables using Automatic Recode - Rank Cases - Sorting Data - Grouping or Splitting Data.						
<b>Unit:3</b>	<b>Exploring Data</b>				<b>15- hours</b>	
Descriptive Statistics for Continuous Variables - The Explore procedure - Frequencies Procedure – Descriptives - Compare Means - Frequencies for Categorical Data.						
<b>Unit:4</b>	<b>Analysing Data</b>				<b>15- hours</b>	
Inferential Statistics for Association: Pearson Correlation, Chi-square Test of Independence						
<b>Unit:5</b>	<b>Analysing Data</b>				<b>15-hours</b>	
Inferential Statistics for Comparing Means: One Sample t Test, Paired-Samples T Test, Independent Samples T Test, One-Way ANOVA.						



	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Book(s) for study</b>		
1	Kothari – Research Methodology	
2	Rajathi– SPSS	
<b>Book(s) for Reference</b>		
1	IBM Statistics software	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	M	S	M	M	M	M	S
<b>CO2</b>	M	M	M	M	M	M	M	M	M	S
<b>CO3</b>	M	M	M	M	M	M	M	M	M	S
<b>CO4</b>	M	M	M	M	M	M	M	M	M	S
<b>CO5</b>	M	M	M	M	M	M	M	M	M	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>ENVIRONMENTAL ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective</b>		<b>Core Paper XIII</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Knowledge on the interaction between economics, ecology and environment.		<b>Syllabus Version</b>		<b>2022-23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To understand the fundamentals of ecology, environment and their relationship with economics.						
2. To know the market inefficiencies and externalities like pollution and find the solutions to market failures.						
3. To study the economics behind environmental issues and policies.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To familiarize with the theories of environmental economics.					K1
2	To examine the practical environmental problems and offer solutions.					K4
3	To analyze the regulations and prohibition measure to protect the Environment					K5
4	To assess India's environmental policies.					K4
5	To measurement the government activity against environmental problem					K2
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create						
<b>Unit:1</b>	<b>Basic Concepts of Environment Economics</b>				<b>15-hours</b>	
The basic concepts of Environment Economics - Basic theory of Environmental Economics - Efficiency in a private market economy - Imperfect market problems - Kaldor - Hicks compensation Principle - Tragedy of commons.						
<b>Unit:2</b>	<b>Environmental Pollution</b>				<b>15-hours</b>	
Environmental pollution: Air, Water, Deforestation, Noise, Industrial Pollution - Waste disposal and recycling of water .Environmental pollution in India - Policies of pollution control and conservation - Protection of environment – Legal system.						
<b>Unit:3</b>	<b>Cost - Benefit Analysis</b>				<b>15-hours</b>	
Cost - Benefit Analysis: Optimum Pollution - Efficient level of environmental quality - Evaluation of environmental benefit - Direct and indirect methods.						
<b>Unit:4</b>	<b>Demographic Effects of Environment</b>				<b>15- hours</b>	
Population, economic growth and environmental quality. Urbanization and environmental problems –Second stage of Demographic Transition-Effects of over population-Problems and its impact.						
<b>Unit:5</b>	<b>Environmental Actions</b>				<b>15- hours</b>	
The collective environmental action: Regulation and prohibition Taxes, subsidies and effluent charges, Government protection of environmental services.-Environmental education- Awareness- Movements in India.						

		<b>Total Lecture hours</b>	<b>75hours</b>
<b>Book(s) for study</b>			
1	Karpagam, M. (2005) "Environmental Economics". Sterling Publishes Pvt. Ltd		
2	S.Sankaran: Environmental E economics (2005) Margham Publications, Chennai		
<b>Book(s) for Reference</b>			
1	Baumol, Willam J. Oates, and Wallace E "Economics, Environmental Policy and the Quality of Life". 1977, Prentice Hall Inc		
2	Eugine, T. (2006) "Environmental Economics, Vrindha Publications (P) Ltd		
3	Handley, Nick, J. Shogren, "Environmental Economics" and Ben White (1999) Macmillan,		
4	Abhijit Dutta, Sunita Dutta and P N Pandey, Environmental Economics A.P.H.Publishing Corporation, New Delhi.		
5	Maddu Raj Environmental Economics (2001) IVY Publishing House , New Delhi		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	M	S	M	S	M	S	M
<b>CO2</b>	M	M	M	M	S	M	S	M	M	M
<b>CO3</b>	M	M	M	M	S	M	S	M	M	M
<b>CO4</b>	S	M	M	M	S	M	S	M	S	M
<b>CO5</b>	S	M	M	M	S	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	LABOUR ECONOMICS			L	T	P	C
Core/Elective	Core Paper XIV			3	-	-	3
Pre-requisite	Knowledge on labour problems and performance of trade unions.			Syllabus Revision		2022-23	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. To understand the role of the state and trade unions in the labourmarket.							
2. To know about the labour regulations and collective bargaining and its influence on employment.							
3. Demonstrate a sound understanding of the core concepts and tools of labour economics and Policy.							
4. To apply economic principles of labour market and contemporary academic Literature.							
5. To evaluate the nature jobs in social and economic environments.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	To analyse an individual's labour supply as the result of the optimum division of time between work and leisure.						K2
2	To understand the investment on human capital, and its influence on the current and future labour supply.						K1
3	To develop the ability to analyse a company's demand for work as the result of a resource optimization.						K4
4	Critically evaluate government policies affecting work and jobs.						K5
5	To identify and utilise the labour welfare legislation in India.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>							
<b>Concept of Labour</b>				<b>15hours</b>			
Concept of Labour and Labour Economics-Labour Problems- Labour Market – Demand and Supply of Labour – Characteristics of labour market in India- Recruitment Procedure and Employment Exchange.							
<b>Unit:2</b>							
<b>Role and functions of Trade Unions</b>				<b>15hours</b>			
Role and functions of Trade Union- Theories of Trade Unionism (i) Webbs (ii) KarlMarx (iii) Gandhi- Trade Union Movement in India-Recent Trends-Justifications of Strikes and Lockouts							
<b>Unit:3</b>							
<b>Industrial Disputes</b>				<b>15hours</b>			
Industrial Disputes: Causes and Consequences- Industrial Disputes in India- ILO Purposes- Constitution-Functions-ILO and India.							
<b>Unit:4</b>							
<b>Industrial Relations</b>				<b>15-hours</b>			
Need for Industrial Relation Machinery-Preventive and Curative methods-Collective Bargaining, Arbitration and Adjudications- Industrial Democracy, concept of Workers participation in management- Role of State in Industrial Relations.							
<b>Unit:5</b>							
<b>Labour Welfare Concepts</b>				<b>15-hours</b>			
Labour Welfare concept, significance, classification, Principles and programmes- Concept of Labour in India; Factory Act ,Labour Welfare Legislation in India.							

		<b>Total Lecture hours</b>	<b>75hours</b>
<b>Text Book(s) for study</b>			
1	Tyagi P.B.(1995),Labour Economics and SocialWelfare,(JaiprakashNath&Co.Meerut),		
2	Saxena R.C. (1979), Labour Problems and SocialWelfare,(K.Nath&Co,Meerut)		
<b>Book(s) for Reference</b>			
1	Pant C.(1978),Indian Labour Problems,(Allahabad,ChaitanyaPublishingHouse).		
2	Singh S.S., and Metha S.(1989),Labour Economics,(Ajanta Prakasham, NewDelhi).		
3	Singh V.N.(1980), Industrial Labour in India (Asia PublishingHouse,Bombay).		
4	Mehrotra S.M.(1976),Labour Problems in India (NewDelhi,S.Chand&Co,Ltd).		
5	Baholiwal T.N.(1981), Economics of Labour and Industrial Relations,(SahityaBhawan,Agra).		
6	Giri V.V.(1985),Labour Problems in Indian Industry (Asia PublishingHouse,Bombay).		
7	Loster R.K.(1989), Economics of Labour and Industrial Relations (Macmillan &Co,New York).		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	S	M	M	S	M	M	M
<b>CO2</b>	M	M	S	S	M	M	S	M	M	M
<b>CO3</b>	M	M	S	S	M	M	S	M	M	M
<b>CO4</b>	M	M	S	S	M	M	S	M	M	M
<b>CO5</b>	M	M	S	S	M	M	S	M	M	M

**\*S-Strong; M-Medium; L-Low**

Course code	FINANCIAL MARKETS			L	T	P	C	
Elective	Elective III GROUP –A			4	-	-	4	
Pre-requisite	Students must have basic knowledge of financial and capital markets.			Syllabus Revision		2022-23		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>To providing knowledge on the development and functioning of Indian financial markets and its components</li> <li>To understand the features and benefits money market and capital market</li> <li>To impart knowledge on the categories of derivatives markets</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	To be conversant with the theory and practice of different financial institutions and markets.						K1	
2	To understand and analyse the interconnection between the monetary forces and real forces.						K2	
3	To familiar with the role and limitations of money market and capital market						K4	
4	To understand the Indian markets						K3	
5	To shape and influence the monetary and related policies both at the national and international levels						K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>Financial Market</b>					<b>15hours</b>		
Financial market - An overview - Definition –Role-functions – constituents of financial market - Indian money and capital markets. Global financial markets								
<b>Unit:2</b>	<b>Money Markets</b>					<b>15hours</b>		
Money Markets-Definition-General Characteristics-Objectives-Importance-General Functions-Segments and sub markets-Money Market instruments - Money market and capital market-Indian money market- Global money market								
<b>Unit:3</b>	<b>Features of Call Money Market</b>					<b>15hours</b>		
Call money market-Features-Benefits-Indian call money market-nature of dealings. participants- Modusoperandi-callmoneyrates-treasurybillmarket-features-CD's-CommercialPaper-Bankers Acceptances – Euro Dollar -Repos- LIBOR - MIBOR-CBLO								
<b>Unit:4</b>	<b>Capital Markets</b>					<b>15-hours</b>		
Capital market- Characteristics- functions-recent initiatives in Indian capital market-Stock exchanges-meaning –definition-functions –Stock market Indices -Calculation of Indices-Regulation of Stock Exchanges - Role of SEBI-Security Listing- Brokers- Cash market operations - margin- Settlement								
<b>Unit:5</b>	<b>Derivative Markets</b>					<b>15-hours</b>		
Derivative Market-meaning -Growth -Functions - categories of derivatives market-Forward contract VS Future Market-Option based derivatives market								
					<b>Total Lecture hours</b>			
					<b>75hours</b>			
<b>Book(s) for study</b>								
1	Dr. S Gurusamy [2004] Financial services and markets Vijay Nicole imprints Chennai							

2	Khan .M.Y.(1996) Indian Financial System ,Tata McGraw Hill New Delhi 7
<b>Book(s) for Reference</b>	
1	Bhole L.M (1999), Financial institutions and Markets, Tata McGraw Hill Company Ltd: New Delhi
2	Edminster R.O.( 1986), Financial Institutions, Markets and Management McGraw Hill, London
3	Bhole, L.M (2000) Indian Financial System Chugh Publications Allahabad
4	Hanson.JA.and S. Kathuria (eds.) (1999) India; Financial Sector for the Twenty –first Century Oxford University press, NewDelhi

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	M	M	S	S	M	M	M
<b>CO2</b>	M	M	M	M	M	S	S	M	M	M
<b>CO3</b>	M	M	M	M	M	S	M	M	M	M
<b>CO4</b>	M	M	M	M	S	S	M	M	M	M
<b>CO5</b>	M	M	M	M	M	S	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	SERVICES MARKETING		L	T	P	C
Elective	Elective III GROUP –B		4	-	-	4
Pre-requisite	The basic concepts of services marketing and different types of services.		Syllabus Version		2022-23	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To know about the special characteristics of services as compared to goods.</li> <li>2. To understand the marketing practices ideal for services.</li> <li>3. To inculcate knowledge about portfolio and financial intermediary services.</li> <li>4. To understand the nature of marketing of non-profit organizations.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To know the basic components of marketing					K1
2	To demonstrate and explain the characteristics of services products differ from tangible goods.					K4
3	To distinguish the service types and draw implications for setting the marketing strategy.					K2
4	To apply marketing mix to develop a positioning strategy for any service organization.					K3
5	Critically analyse service marketing problems and recommend solutions					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Services Marketing</b>				<b>18-hours</b>	
Services Marketing: Meaning – nature of services – Types and importance – Relationship marketing – Mission, strategy, elements of designs, marketing plan market segmentation.						
<b>Unit:2</b>	<b>Marketing mix Decisions</b>				<b>18-hours</b>	
Marketing mix decisions: Unique features of developing, pricing, promoting and distributing services – Positioning and differentiations strategies, quality of service industries – Achievement and maintenance, customer support service.						
<b>Unit:3</b>	<b>Marketing of Hospitality</b>				<b>18-hours</b>	
Marketing of Hospitality: Perspective of Tourism, Hotel and Travel Services– Airlines, Railway, Passenger and Goods Transport – Leisure services.						
<b>Unit:4</b>	<b>Marketing of Financial Services</b>				<b>18- hours</b>	
Marketing of Financial Services: - Concepts – Features of Banking, Insurance, Lease, Mutual Fund, Factoring, Portfolio and financial intermediary services.						
<b>Unit:5</b>	<b>Marketing Organizations</b>				<b>18- hours</b>	
Marketing of Non-Profit Organizations: Services offered by charities – Educational service – miscellaneous services – Power and Telecommunications.						



	<b>Total Lecture hours</b>	<b>90hours</b>
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<b>Book(s) for study</b>	
1	S.M. Jha – Services Marketing – Himalaya Publishing Company
2	Ravishankar –Services Marketing – Indian experiences – South Asia Publication
<b>Book(s) for Reference</b>	
1	Ziethaml&Bitner – Services Marketing: Integrating Customer Focus across the Firm TMH
2	P.K. Sinha & S.C. Sahoo – Services Marketing – Text & Readings – Himalaya
3	Adrian Pyne – Essence of Services Marketing – Prentice Hall of India
4	Lovelock – Services Marketing – Prentice Hall
5	Gonsalves – Services Marketing – Prentice Hall
6	Palmer – Services Marketing : Principles & Practice – Prentice Hall.
7	Woodruffe – Services Marketing – Macmillan

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	M	S	M	M	M	M	M
<b>CO2</b>	M	M	M	M	S	M	M	M	M	M
<b>CO3</b>	M	M	M	S	S	M	M	M	M	M
<b>CO4</b>	M	M	M	S	S	M	M	M	M	M
<b>CO5</b>	M	M	M	S	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>INTRODUCTION TO INDUSTRY 4.0</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Elective</b>		<b>Elective III GROUP – C</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Basic computer knowledge and local industrial Knowledge.		<b>Syllabus Version</b>		<b>2022-23</b>	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>1. To understand the various stages of industrial revolutions</li> <li>2. To know the drivers, enablers and compelling forces for Industry 4.0's advancement</li> <li>3. To understand Internet of Things (IoT)</li> <li>4. To study the predictive analysis, big data leading to data-driven decisions and automation.</li> <li>5. To find the challenges in cyber security and measures to reduce them.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To Understand the drivers and enablers of Industry 4.0					K1
2	To know the artificial intelligence and its environment					K2
3	To analyse the societal influences of AI and its application domains					K4
4	To demonstrate the power of big data terminologies in the networked economy.					K3
5	To understand the opportunities, challenges brought about by Industry 4.0.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>Industry 4.0</b>				<b>15- hours</b>	
Need – Reason for Adopting Industry 4.0 - Definition – Goals and Design Principles - Technologies of Industry 4.0 – Big Data – Artificial Intelligence (AI) – Industrial Internet of Things - Cyber Security – Cloud – Augmented Reality						
<b>Unit:2</b>	<b>Artificial Intelligence</b>				<b>15- hours</b>	
Artificial Intelligence: Artificial Intelligence (AI) – What & Why? - History of AI - Foundations of AI - The AI - environment - Societal Influences of AI – Application Domains and Tools - Associated Technologies of AI – Future Prospects of AI – Challenges of AI.						
<b>Unit:3</b>	<b>Big Data and IoT</b>				<b>15- hours</b>	
Big Data : Evolution - Data Evolution - Data : Terminologies - Big Data Definitions - Essential of Big Data in Industry 4.0 - Big Data Merits and Advantages - Big Data Components : Big Data Characteristics - Big Data Processing Frameworks - Big Data Applications - Big Data Tools - Big Data Domain Stack : Big Data in Data Science – Big Data in IoT - Big Data in Machine Learning - Big Data in Databases - Big Data Usecases : Big Data in Social Causes - Big Data for Industry - Big Data Roles and Skills - Big Data Roles - Learning Platforms; Internet of Things (IoT) : Introduction to IoT – Architecture of IoT - Technologies for IoT - Developing IoT Applications - Applications of IoT - Security in IoT.						
<b>Unit:4</b>	<b>Applications and Tools of Industry 4.0</b>				<b>15-hours</b>	
Applications of IoT – Manufacturing – Healthcare – Education – Aerospace and Defense – Agriculture – Transportation and Logistics – Impact of Industry 4.0 on Society: Impact on Business, Government, People. Tools for Artificial Intelligence, Big Data and Data Analytics, Virtual Reality, Augmented Reality, IoT, Robotics						
<b>Unit 5 Jobs 2030</b>			<b>15- Hours</b>			
Industry 4.0 – Education 4.0 – Curriculum 4.0 – Faculty 4.0 – Skills required for Future - Tools for Education – Artificial Intelligence Jobs in 2030 – Jobs 2030 - Framework for aligning Education with Industry 4.0.						

<b>Total Lecture hours</b>		<b>75 Hours</b>
Reference:		
1. P. Kaliraj, T. Devi, Higher Education for Industry 4.0 and Transformation to Education 5.0, 2020.		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	M	S	M	S	S	M	M
<b>CO2</b>	M	M	M	M	S	M	S	S	M	M
<b>CO3</b>	M	M	M	M	S	M	S	S	M	S
<b>CO4</b>	M	M	M	M	M	M	S	S	M	M
<b>CO5</b>	M	M	M	M	M	M	S	M	M	M

\*S-Strong; M-Medium; L-Low

A purple scroll graphic with a white outline and rounded corners. The top and bottom edges are rolled up. The text "Fourth Semester" is centered in white. There are faint blue decorative elements on the left and right sides.

**Fourth  
Semester**



<b>Book(s) for study</b>	
1	Rosh pendrajha : Modern Public Economics
2	Rosen Harways : Public Finance, Irwin
3	S.K.Singh :Public Finance
4	Thyagi: Public Finance
5	Mankar&Sarma: Public Finance Theory and Practices
<b>Book(s) for Reference</b>	
1	Musgrave, R.A and P.B.Musgrave[1976] Public finance theory and practice,Mcgraw-hill Kogakusha,Tokyo.
2	Stiglitz.J.k [1986] Economics of the public sector, Norton New York.
3	Atkinson.A.B and J.E stiglitz [1980] Lecture in Public Economics, McgrawHill,New York
4	Musgrave R.A and C.Sharp [Ed] 1970 Readings in Economics of Taxation ,George Allen and unwin London.
5	Muller D.C [1979] Economics of Public choice,Cambridge University.
6	Seigman.E.R.A [1960] Eassys in Taxation, George Allen and Unwin London.
7	Brown.C.V and Jackson-Public sector Economics.
8	Hyman,David-The Economics of Government activity.

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	S	M	M	S	M	S	M	S
<b>CO2</b>	S	S	M	S	S	M	S	S	M	M
<b>CO3</b>	S	M	S	M	M	M	M	M	S	M
<b>CO4</b>	M	S	S	S	M	M	M	M	S	S
<b>CO5</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	INTERNATIONAL ECONOMICS		L	T	P	C
Core	CORE PAPER – XVI		4	-	-	4
Pre-requisite	Basic knowledge on theories of international trade, exchange rate regimes, terms of trade and functions of international financial institutions.		Syllabus Version		2022-23	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To understand the theories governing international trade.					
2	To aware about the policies pursued by various economic bodies in international economics.					
3	To study the current and capital account convertibility of Indian rupee.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	To develop a systematic knowledge on composition, direction and consequences of international trade.					K1
2	To understand the processes of international economic relations as the part of global market economy.					K2
3	To acquire skills on the various aspects of exchange rate.					K3
4	To aware about international financial markets, balance of payments and the trade balance, and the capital flow.					K4
5	To evaluate the role of international institutions on trade practices.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>The Basis of Trade</b>					<b>18 – hours</b>
The basis of trade – Hecksher – Ohlin theorem – Leontiff Paradox – Factor price equalization – StolperSamuleson theorem – Rybcznski theorem.						
<b>Unit:2</b>	<b>Importance and Theories of Trade</b>					<b>18—hours</b>
Importance of terms of Prebish – Singer thesis international trade. Trade – concepts of terms of trade – factors affecting terms of trade – - doctrine of reciprocal demand and offer curve analysis-gains from International Trade.						
<b>Unit:3</b>	<b>Exchange Rate</b>					<b>18—hours</b>
Exchange rate – Determination of equilibrium exchange rate – mint par parity – PPP – BOP Theories – Fixed and Flexible exchange rate – spot and forward exchange rate - adjustable peg - crawling peg and managed Floating systems.						
<b>Unit:4</b>	<b>Balance of Payments</b>					<b>18—hours</b>
Balance of payments – Balance of trade and balance of payments – BOP disequilibrium – Method of correcting disequilibrium - Devaluation – Elasticity and Absorption approach – Exchange control – Current and Capital Account convertibility of Indian rupee.						
<b>Unit:5</b>	<b>International Institutions</b>					<b>18—hours</b>
International institutions – IMF and IBRD – WTO – Trade Blocs and Monetary units – Impact of liberalisation on the pattern of trade.						
					<b>Total Lecture hours</b>	<b>90 – hours</b>

<b>Book(s) for study</b>										
1	Heffernam and Singlair : Modern International Economics									
2	Krasuse (Wlater) : International Economics									
3	Sodersten, Bo : International Economics									
4	Soresten,Bo : International Trade - Essays in Theory, North – Holland Ansterdam 1986.									
5	Kindeleberger, Charles : International Economics.									
6	CherumilumFrancis:„International Business“, NewDelhi, Wheeler Publication, 1998.									
<b>Book(s) for Reference</b>										
1	Sodersten, Bo. and Geoffery Reed ; International Economics, HongkongMarmilan ltd.									
2	W.Charles Sawyer, Richard.D.Sprinkle : International Economics , Prentice Hall of India.									
3	Salvatore, :Schaums Outline of Theory and Problems of International Economics.									
<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C01	S	M	M	M	S	M	M	M	M	M
C02	M	S	S	S	M	S	S	S	S	M
C03	S	M	M	S	M	M	M	S	S	S
C04	M	S	S	M	S	S	M	M	M	M
C05	S	M	M	M	S	S	S	M	M	S

\*S-Strong; M-Medium; L-Low



Course code	HUMAN RESOURCE MANAGEMENT			L	T	P	C
Core	CORE PAPER – XVII			3	-	-	3
Pre-requisite	Basic knowledge about performance appraisal, training and development, collective bargaining and employee welfare.			Syllabus Version	2022-23		
<b>Course Objectives:</b> The main objectives of this course are:							
1	To understand the implications of human resource management and the behavioral sciences, and government regulations.						
2	To know the elements of the human resource functions, key concepts and terminology.						
3	To understand the principles and techniques of human resource management.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able:							
1	To analyze human resource planning and forecasting techniques.						K4
2	To investigate and interpret the key procedures in recruitment and selection.						K2
3	To describe and analyze about the training and development.						K3
4	To illustrate the essential features of human resource information system.						K1
5	To evaluate employee's self analysis and reflect upon personal improvement.						K5
	To evaluate significant contemporary issues in human resource management.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>Basics of Human Resource Management</b>					<b>18 –hours</b>	
Evolution of Human Resource Management – The Importance of the Human Factor – Objectives of Human Resource Management – Role of Human Resource Manager – Human Resource Policies – Understanding business process in the context of Human Resource Management.							
<b>Unit:2</b>	<b>Planning</b>					<b>18 –hours</b>	
Importance of Human Resource Planning – Forecasting Human Resource requirements – Internal and External sources. Selection Process – Screening – Tests – Validation – Interview – Medical Examination – Recruitment. Induction – Importance – Practices – Socialization benefits.							
<b>Unit:3</b>	<b>Orientation and Training</b>					<b>18 –hours</b>	
Orientation & Training: Orienting the employees, the training process, need analysis, training techniques special purpose training, Training via the internet. Management Development - The responsive managers - Key factor for success. Performance appraisal: Methods - Problem and solutions - MBO approach - The appraisal interviews - Performance appraisal in practice. Managing careers: Career planning and development - Managing promotions and transfers.							
<b>Unit:4</b>	<b>Establishing Pay Plans</b>					<b>18 –hours</b>	
Establishing Pay plans: Basics of compensation - factors determining pay rate – Current Trends in compensation - Computerized job evaluation. Pay for performance and Financial incentives: Money and motivation - incentives for operations employees and executives - Organization wide incentive plans - Practices in Indian Organizations. Statutory benefits - non-statutory (voluntary) benefits – Insurance Benefits - retirement benefits and other welfare measures to build employee commitment.							
<b>Unit:5</b>	<b>Industrial Relations and Collective Bargaining</b>					<b>18 –hours</b>	
Industrial relations and collective bargaining: Trade unions - Collective bargaining. Discipline administration - grievances handling - managing dismissals and Separation .Labour Welfare: Importance & Implications of labour legislations - Employee health- Auditing functions, Future of HRM function.							

	<b>Total Lecture hours</b>	<b>90 – hours</b>
<b>Book(s) for study</b>		
1	Gary Dessler, "Human Resource Management", Seventh edition, Prentice-Hall of India P.Ltd., Pearson.	
2	V.S.P Roa, Human Resource Management: Text and cases, First edition, Excel Books, New Delhi - 2000.	
3	Decenzo and Robbins, Human Resource Management, Wiley, 6th Edition, 2001.	
4	Dessler, Human Resource Management, Pearson Education Limited, 2002.	
<b>Book(s) for Reference</b>		
1	H.JohnBernardin&JoyeeE.A.Russel, Human Resource Management - An experiential approach, 4th Edition, McGraw-Hill International Edition., 2007	
2	David A. De Cenzo& Stephen P.Robbins, Personnel/Human Resource Management, Third edition, PHI/Pearson.	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	S	S	S	M
<b>CO2</b>	M	M	M	M	S	M	M	M	M	M
<b>CO3</b>	S	S	S	S	S	S	M	M	S	S
<b>CO4</b>	S	M	M	M	M	M	M	S	M	M
<b>CO5</b>	M	S	M	M	M	S	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code		<b>INTERNATIONAL TRADE PROCEDURES AND DOCUMENTATION</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core/Elective/Supportive		<b>ELECTIVE IV - Group A</b>	<b>4</b>			<b>4</b>
Pre-requisite		Export and import procedures and documentation	<b>Syllabus Version</b>		2022-23	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To grasp the knowledge on international marketing environment.					
2	To familiar with the concepts of export and import procedures and documentation.					
3	To provide knowledge on the export and import trade regulations.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To create basic knowledge of access to exports and imports.					K1
2	To understand the export and import documentation system.					K2
3	To construct the knowledge of export and import procedure.					K3
4	To analyse the conceptual framework of export and import policy.					K4
5	To understand the export and import regulations in India.					K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>International Marketing Environment</b>				<b>18 -- hours</b>	
Meaning and Definition of Export -Import-Classifications -International Marketing environment – Global trade and developing countries – Highlights of India’s trade performances-Determinants of Export and Import – Major problems of India’s export sector – Impact of recent changes in foreign trade policy. Entry to foreign markets – Trade Fairs – Pre -shipment finance – Post- shipment finance-EXIM bank of India.						
<b>Unit:2</b>	<b>Registration and CENVAT</b>				<b>18-- hours</b>	
Registration – ICE, Central Excise, category of Exports – Physical – Direct and indirect – Deemed export – Manufacturing exporter – Merchant exporter. Duty Drawbacks – Advance licensing – CENVAT – Sales Tax Exemption – IPRS-Excise Clearance Benefit – Rebate – Income Tax benefit.						
<b>Unit:3</b>	<b>Export-Import Procedure</b>				<b>18-- hours</b>	
Steps in Export Procedure-Export Contract –Forward Cover-Export Finance-Institutional framework for Export Finance-Excise Clearance-Pre-shipment Inspection – Role of Clearing and Forwarding Agents-Shipping and Customs Formalities-Customs EDI System-Negotiation of Documents Realisation of Exports Proceeds. Pre-Import Procedure-Steps in Import Procedures-Legal Dimensions of Import Procedure-Customs formalities for Imports- Warehousing of Imported Goods-Exchange Control Provisions for Imports-Retirement of Export Documents.						
<b>Unit:4</b>	<b>Policy and Institutional Framework for Exports and Imports</b>				<b>18-- hours</b>	
Foreign Trade Policy-Highlights-Special Focus Initiatives-Duty Framework - Deemed Exports-ASIDE-MAI&MDA –Star Export Houses –Town of Export Excellence-EPCG. Scheme-Incentive for Exporters. Export Promotion Councils-Commodity Boards-FIEO-IIFT- EOUs-SEZs-ITPO- EXIM Policy: EXIM policy 2002-2007 – Features- Foreign Trade Policy 2004-2009 - Salient features.						
<b>Unit:5</b>	<b>Export and Import Trade Control</b>				<b>18-- hours</b>	
Export Trade Control: Different categories of Exporters – Export Licensing procedures and formalities – Role of ECGC in export promotion –Project exports and consultancy exports. Import Trade Control: License –Duty Entitlement Passbook Scheme-Harmonized IECcode number adopted for classification of import control items-Import of Capital goods under EPCG scheme –Import of raw materials and components under OGL actual user condition-Import for stock and sale-Restricted and Banned items for imports Canalization of imports and various canalizing agencies.						

		<b>Total Lecture hours</b>	<b>90 --hours</b>
<b>Text Book(s)</b>			
1	Export Marketing ,TASBalagopal,Himalaya publishing house.		
2	A guide on export policy,procedures and documentation – M.I.Mahajan.		
<b>Reference Books</b>			
1	Handbook of Import-Export Procedures-Ministry of Commerce,Government of India,New Delhi.		
2	Exports-Do it yourself, M.IMahaja, Snow white publishing House.		
3	Imports-Do it yourself, M.IMahaja, Snow white publishing House.		
4	Export Documentation and procedures, Nabhipublications,New Delhi.		

<b>MappingwithProgrammeOutcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	M	S	S	M	S	M	M
<b>CO2</b>	S	S	S	S	S	S	M	S	M	M
<b>CO3</b>	S	S	S	M	M	S	M	M	S	M
<b>CO4</b>	M	S	S	M	M	S	M	M	S	M
<b>CO5</b>	M	M	S	M	S	M	M	M	M	M

\*S-Strong;M-Medium;L-Low

Course code	INTERNATIONAL BUSINESS			L	T	P	C
Elective	Elective IV GROUP –B			4	-	-	4
Pre-requisite	This course explores global economies and markets, such as business customs, multinational businesses and foreign trade practices. It highlights the foreign business environments, cultural dynamics, economic developments and political impacts on foreign businesses.			Syllabus Version		2022-23	
<b>Course Objectives:</b>							
1	To know about the composition and direction of India's imports and exports.						
2	To identify the role and impact of political, economical, social and cultural variables in international business.						
3	To analyze international business from a multi-centric perspective.						
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	To understand the most widely used international business terms and concepts.						K2
2	To critically analyze the risk and opportunities prevailing in businesses that operate in the global arena.						K4
3	To recognize the function of international organizations.						K1
4	To know about exchange rate determination, controlling and policies.						K3
5	To demonstrate the composition and direction of India's imports and exports.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>International Business</b>			<b>15-hours</b>			
International Business - Meaning, Nature and Scope – Role of Foreign Trade in the Economic Development of India – Balance of payment in the context of Economic Growth Process – Trade balance – Current Account position and Capital Account position – Trends – Principles of BOP – Correction of adverse BOP.							
<b>Unit:2</b>	<b>World Bank and IMF</b>			<b>15-hours</b>			
Euro Currency Market – GATT – WTO, World Bank and IMF – Functions.							
<b>Unit:3</b>	<b>Export Marketing</b>			<b>15-hours</b>			
Export marketing – Meaning – An overview of export marketing – differences between export marketing and domestic marketing – salient features and basic functions of export marketing – export barriers – Tariff and non-tariff – Export market analysis – Feasibility of market entry – Sources of market information – Assessing sale prospects.							

<b>Unit:4</b>	<b>India's Import and Export</b>	<b>15- hours</b>
Composition and direction of India's imports and exports – Past trends, present position and prospects – Project consultancy and Service exports – Trends, prospects and problems – Important documents used in foreign trade.		
<b>Unit:5</b>	<b>Foreign Exchange</b>	<b>15- hours</b>
Foreign exchange – Theories of foreign exchange – administration of foreign exchange – Rate determination – Factors influencing fluctuations in foreign exchange – Exchange control in India.		
<b>Total Lecture hours</b>		<b>75hours</b>
<b>Book(s) for study</b>		
1	International Marketing Management- Varshney&Bhattachariya.	
2	ExportMarketing - T.A.S. Balagopal	
3	Money, Banking & International Trade- M.L.Seth	
<b>Book(s) for Reference</b>		
1	International Business - Francis Cherunilam.	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	S	S	S	S	M	M
CO2	M	S	M	M	M	S	M	M	S	S
CO3	M	S	M	S	M	S	S	M	S	S
CO4	S	S	S	S	S	M	S	M	S	M
CO5	M	M	S	M	M	M	M	M	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>HEALTH ECONOMICS</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>	<b>Elective IV - Group C</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	Knowledge on Health infrastructure and social infrastructure		<b>Syllabus Version</b>	<b>2022-23</b>		
<b>Course Objectives:</b>						
The main objectives of this course are:						
1	To understand the economic concepts of health care.					
2	To understand about the demand and supply of health care services.					
3	To analyze the economic evaluation on health care.					
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able:						
1	To acquire sufficient knowledge about fundamental principles of health economics					K1
2	To acquaint with economic reasoning to resource allocation problems of the health					K2

	sector	
3	To equip with the health services and the major components of social infrastructure	K3
4	To gain knowledge and to evaluate the health infrastructure	K4
5	To construct the knowledge of policy decision of India's health sector	K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>		
<b>Unit:1</b>	<b>Introduction to Health Economics</b>	<b>15 -- hours</b>
Defining Health Economics -Economics of Health Care - Health Care Services, Need and Role of Health Care Services - Importance and Usefulness of Health Care Statistics -Estimation of Economic Value of Health Care Services - Indicators of Health Status. Measures of Health Status: Mortality, Morbidity and Quality of Life		
<b>Unit:2</b>	<b>Demand for and Supply of Health Care Services</b>	<b>15-- hours</b>
Demand for Health Care: Conceptual Framework - The Role of Quality in Demand for Health Care.– Factors influencing demand - Determinants of Health Status: Income and Education, Environmental and Life Style Factors and Genetic Factors. Production of Health Supply Function of Health Care Services - The Physicians - The Hospitals and Nursing Homes -The Physician Induced Supply for Health Care.		
<b>Unit:3</b>	<b>Economic evaluation of health care systems</b>	<b>15-- hours</b>
Definition of Economic Evaluation – Steps of Economic Evaluation – Types of Economic Analysis: Cost Analysis – Cost Effectiveness Analysis – Cost Utility Analysis – Cost Benefit Analysis: Issues in Cost Benefit Analysis – QALY, DALY. Regional disparities in health sector-Health statistics at aggregate and regional level.		
<b>Unit:4</b>	<b>Health Infrastructure and Public Health Care System</b>	<b>15-- hours</b>
Health Infrastructure - Hospital Building Infrastructure - Manpower - Facilities Drugs. Public Health Care Delivery System - Problems of Public Health - Social Externalities and Threats to Health - Tobacco, Alcohol and Drugs Abuse - Environmental Pollution and Health - Second Generation Health Issues.		
<b>Unit:5</b>	<b>India's Health Sector</b>	<b>15-- hours</b>
India's Health Sector: Trends in Public Expenditure on Health and Family Welfare. Health Insurance: Definition – Health Insurance in India – Health Insurance Schemes: Central Government Health Insurance Schemes – Health Insurance Initiatives by State Governments - Employer-based Schemes. Social Insurance for Health Care of the Poor, National Health Policy – NRHM – Health Policy Challenges for India.		
	<b>Total Lecture hours</b>	<b>75 –hours</b>
<b>Text Book(s)</b>		
1	Feldstein, N.S, Economic Analysis of Health Services Efficiency, Amsterdam: North Holland.	
2	Folland, Sherman, Allen C Goodman and MironStano, The Economics of Health and Health Care, Prentice-Hall, New Jersey	
<b>Reference Books</b>		
1	GOI, National Health Policy, Ministry of Health and Family Welfare, New Delhi.	
2	Government of India, Five Year Plan Documents (6th to 12th Plan and On) Planning Commission, New Delhi.	
3	Haggard, Odeyar, D, Hospital Management, Mohit Publications, New Delhi.	
4	Phelps, Charles, E, Health Economics, Second Ed. Addison-Wesley, Reading.	

5	Weisman J, Economics of Public Health, University of Pennsylvania, Pennsylvania.
6	World Bank, The Financing of Health Services in Developing Countries-An Agenda for Reform, World Bank Policy Study, Washington D.C.
7	World Bank, Investing in People: The Health Sector, World Bank, Washington, D.C.
8	Zweifel, peter and Freidrich Breyer, Health Economics, Oxford University Press, New York.

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	M	S	S	S	S	M
<b>CO2</b>	S	M	S	M	M	S	S	S	S	S
<b>CO3</b>	S	M	M	S	S	S	S	M	S	S
<b>CO4</b>	S	M	S	M	M	S	M	M	S	S
<b>CO5</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low.





**PROVIDENCE COLLEGE FOR WOMEN - COONOOR**  
**PG & RESEARCH DEPARTMENT OF HISTORY**  
**B.A HISTORY SYLLABUS**  
**2022 – 2023 onwards**



<b>Program Educational Objectives (PEOs)</b>	
The <b>B.A. History</b> program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	Learn about past human behaviour that is relevant to the intellectual growth and development as an individual and can endow with valuable insight for future generations.
PEO2	To enable the students to improve their competency skills in the field of Education and Teaching.
PEO3	To equip the students to acquire skills and knowledge required to pursue higher studies in the field of Archaeology, Museology, Epigraphy, Journalism, Tourism and Administration.
PEO4	To make the students to acquire a broad knowledge of history to become teachers.
PEO5	To motivate the students to take up professional courses in the field of education and law.
PEO6	To train the students to appear for the competitive examinations.

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of B.A. History program, the students are expected to	
PSO1	Learn and understand history with the ability to know the different historical times of world and acquire knowledge of culture, events, facts, terminologies, conventions and methodology.
PSO2	Expand their vision to recognize the diversity of human experience in ethnicity, caste, class, religion, sex and make them work towards Universal Brotherhood.
PSO3	Equip with the essentialities of their chosen career.
PSO4	Acquire the knowledge of world cultures and their inter-connections with multi cultural sensitivity.
PSO5	Recognize and evaluate the achievements of man in history and progress of ideas.
PSO6	Develop practical skills which help in the study and understanding of historical events.
PSO7	Install the feeling of patriotism in the hearts of the pupils.
PSO8	Analyze the relationship between the past and the present is lively presented in the history.
PSO9	Evaluate and recognize the values of History.
PSO10	Equip to appear for competitive Examinations.

<b>Program Outcomes (POs)</b>	
On successful completion of the B.A. History program, students will be able to	
PO1	Remember and obtain a wider knowledge of World History, Indian History, Regional History, Archaeology, Tourism, Journalism, and Computer application in History.
PO2	Understand the political, social and cultural facets of the world and develop their historical knowledge.
PO3	Apply his knowledge in the field of Politics, Education and Research.
PO4	Analyze the causes for changes in the course of history.
PO5	Evaluate the role of leaders in society.
PO6	Create an environment conducive to peaceful co-existence.
PO7	Acquire modern skills, aptitude and potentialities of most creative mode in history.
PO8	Worthy intellectual attitude will be developed among students.
PO9	Appreciate the achievements and values of their own times.

**B.A. HISTORY**

(For the students admitted from the academic year 2022-2023 and onwards)

**Scheme of Examination**

Part	Title of the Course	Hours/ Week	Examination				Credits
			Duration in Hours	Maximum Marks			
				CIA	CEE	Total	
<b>Semester- I</b>							
I	Language-I	6	3	50	50	100	4
II	English-I	6	3	50	50	100	4
III	Core Paper-I: History of India upto 647 A.D.	5	3	30	45	75	3
III	Core Paper-II: History of India from 647 A.D to 1526 A.D.	5	3	30	45	75	3
III	Allied Paper I	6	3	50	50	100	4
IV	Environmental Studies*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>210</b>	<b>290</b>	<b>500</b>	<b>20</b>
<b>Semester- II</b>							
I	Language-II	6	3	50	50	100	4
II	English-II	6	3	50	50	100	4
III	Core Paper-III: History of India from 1526 A.D to 1707 A.D.	5	3	50	50	100	4
III	Core Paper-IV: History of India from 1707 A.D to 1858 A.D.	5	3	50	50	100	4
III	Allied Paper II	6	3	50	50	100	4
IV	Value Education – Human Rights*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>	<b>22</b>
<b>Semester- III</b>							
I	Language-III	6	3	50	50	100	4
II	English-III	6	3	50	50	100	4
III	Core Paper-V: History of India from 1858 A.D to 1947 A.D.	4	3	50	50	100	4
III	Core Paper-VI: History of India from 1947 A.D to 2000 A.D.	4	3	50	50	100	4
III	Allied Paper III	5	3	50	50	100	4
IV	Skill Based Subject-I: Origin and Growth of Tourism	3	3	30	45	75	3
IV	Tamil** / Advanced Tamil* (OR) Non-major Elective - I (Yoga for Human Excellence)* / Women's Rights*	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>	<b>25</b>
<b>Semester- IV</b>							
I	Language-IV	6	3	50	50	100	4
II	English-IV	6	3	50	50	100	4
III	Core Paper-VII: History of Tamil Nadu upto 1336 A.D.	4	3	50	50	100	4

III	Core Paper-VIII: History of Tamil Nadu from 1336 A.D to 1977 A.D.	4	3	50	50	100	4
III	Allied Paper-IV:	5	3	50	50	100	4
IV	Skill Based Subject-II: History and Disaster Management	3	3	30	45	75	3
IV	Tamil**/Advanced Tamil* (OR) Non-major Elective -II (General Awareness*)	2	3	-	50	50	2
	<b>Total</b>	<b>30</b>		<b>280</b>	<b>345</b>	<b>625</b>	<b>25</b>
<b>Semester- V</b>							
III	Core Paper-IX: History of Europe from 1789 A.D to 1945 A.D.	6	3	50	50	100	4
III	Core Paper-X: History of England from 1603 A.D to 1945 A.D.	6	3	50	50	100	4
III	Core Paper-XI: History of USA upto 1865 A.D.	6	3	50	50	100	4
III	Core Paper-XII: India and Her Neighbours	5	3	50	50	100	4
III	Elective I	4	3	50	50	100	4
IV	Skill Based Subject-III: Computer Application in History (Industry 4.0)-I	3	3	30	45	75	3
	<b>Total</b>	<b>30</b>		<b>280</b>	<b>295</b>	<b>575</b>	<b>23</b>
<b>Semester- VI</b>							
III	Core Paper-XIII: World History from 1945 A.D to 2000 A.D.	6	3	50	50	100	4
III	Core Paper-XIV: History of USA from 1865 A.D to 1990 A.D.	6	3	50	50	100	4
III	Core Paper-XV: Applied History for Civil Service Examinations.	5	3	50	50	100	4
III	Elective II	5	3	50	50	100	4
III	Elective III	5	3	50	50	100	4
IV	Skill Based Subject-IV: Computer Application in History-I (Fully Practical)	3	3	30	45	75	3
V	Extension Activities**	-	-	50	-	50	2
	<b>Total</b>	<b>30</b>	-	<b>330</b>	<b>295</b>	<b>625</b>	<b>25</b>
	<b>Grand Total</b>	<b>180</b>	-	<b>1680</b>	<b>1870</b>	<b>3500</b>	<b>140</b>

**Note**

\* No Continuous Internal Assessment (CIA). Only University Examinations.

\*\* No University Examinations. Only Continuous Internal Assessment (CIA).

# First Semester

### SEMESTER I

Course code	TITLE OF THE COURSE			L	T	P	C	
<b>Core- I</b>	<b>HISTORY OF INDIA UPTO 647 A.D.</b>			<b>5</b>	<b>-</b>	<b>-</b>	<b>3</b>	
<b>Pre-requisite</b>	<b>Basic knowledge in Indian History at School level.</b>			<b>Syllabus</b>		<b>rsion</b>		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Equip the students to know about the geographical features and its effects on India.</li> <li>2. Educate the unifying factors amidst diversity.</li> <li>3. Learn the political and religious condition of India from 6<sup>th</sup> Century B.C.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Recall the basic concepts and distinguish the different sources for the study of Indian History.						K1	
2	Understand the importance of geography for history.						K2	
3	Explain the teachings of Buddha and Mahavira.						K3	
4	Realize the importance of Unity in Diversity.						K4	
5	Evaluate the career of Asoka, Chandragupta, Kanishka, Harsha.						K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>								
<b>SOURCES OF STUDY</b>			<b>15 hours</b>					
Effects of Geography on Indian History - Unity in diversity - Pre-Historic Culture - Sources - Harappan Civilization - Vedic Civilization.								
<b>Unit:2</b>								
<b>RISE OF KINGDOMS AND RELIGION</b>			<b>15 hours</b>					
Mahajanapadas - Rise of Magadha - Life and teachings of Buddha and Mahavira - Invasion of Alexander and its impact.								
<b>Unit:3</b>								
<b>RISE OF MAURYAN EMPIRE</b>			<b>15 hours</b>					
Rise and Consolidation of the Mauryan Empire - Asoka and the spread of Buddhism - The Mauryan Administration - Art and Architecture - The Sungas.								
<b>Unit:4</b>								
<b>THE KHUSHANS AND THE GUPTA EMPIRE</b>			<b>14 hours</b>					
Kanishka - Mahayanism - Gandhara Art - Rise and Consolidation of the Gupta Empire: Samudra Gupta and Chandra Gupta II - Administration - Social and Economic life of the people - Art and Culture - Decline of the Guptas.								
<b>Unit:5</b>								
<b>HARSHA'S ADMINISTRATION</b>			<b>14 hours</b>					
Harsha's career and achievements - Administration - Social and Economic life of the people - Accounts of the foreign travellers.								

<b>Maps:</b> 1. Indus valley civilization, 2. Maurya Empire - Asoka, 3. Gupta Empire, 4. Harsha Empire.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Hans Raj, <i>History of Ancient India</i> , Surjeet Publications, Delhi, 1985.	
2	Ramalingam T. S., <i>History of India upto 1206 AD</i> , TSR Publications, 1982.	
3	Sathyanatha Iyer R., <i>History of India Vol I</i> .	
<b>Reference Books</b>		
1	Basham A. L., <i>The Wonder that was India</i> , Macmillan, India 2004.	
2	Kundra, <i>History of India</i> , Kamal Arora Publishers, New Delhi, 1997	
3	Mahajan V. D., <i>History of Ancient India</i> , S. Chand Publishing, 2016.	
4	Majumdar R. C., Dutta K. K. and Roy Choudry - <i>Advanced History of India</i> , Macmillan India Ltd, Madras, 1985.	
5	Neelakanda Sasthri K.A., <i>History of South India</i> , Oxford, 1997.	
6	Phalaksha, <i>History of Ancient Period Vol-1</i> , Shahshi Prakashana, 2013	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=NFczNHrbXB0">https://www.youtube.com/watch?v=NFczNHrbXB0</a>	
2	<a href="https://www.youtube.com/watch?v=W8Lc2-RYGNc">https://www.youtube.com/watch?v=W8Lc2-RYGNc</a>	
3	<a href="https://www.jagranjosh.com/general-knowledge/the-harshavardhana-era-1437388149-1">https://www.jagranjosh.com/general-knowledge/the-harshavardhana-era-1437388149-1</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	M	S	S	M	S
<b>CO2</b>	S	S	M	S	M	S	S	M	M
<b>CO3</b>	S	S	S	S	M	M	M	S	S
<b>CO4</b>	S	S	M	S	M	S	M	M	M
<b>CO5</b>	S	S	M	S	S	M	M	S	S

\*S-Strong; M-Medium; L-Low



Course code	TITLE OF THE COURSE			L	T	P	C
Core – II	HISTORY OF INDIA FROM 647 A.D. TO 1526 A.D.			5	-	-	3
Pre-requisite	Basic knowledge in Indian History at School level.			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Make the students to understand the political condition of India from 6th Century A.D. to 15 <sup>th</sup> Century A.D.							
2. Impart the history of Arab's conquest of Sind and rule of Delhi Sultanate.							
3. Educate about the administration of the Delhi Sultanate.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Know the Arab Invasion of Sind.						K1
2	Understand the effects of Arab and Turkish invasions.						K2
3	Illustrate the Muslim dynasties that ruled Delhi in the Medieval period.						K3
4	Analyze the social and cultural impact of period.						K4
5	Evaluate and differentiate the various dynasties of Delhi Sultanate.						K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>RISE OF KINGDOMS IN NORTH INDIA</b>					<b>15 hours</b>	
Rise of Palas - Pratiharas - Rastrakutas - Rajput kingdoms - Condition of society on the eve of Arab Invasion - Mohamed-Bin-Qasim.							
<b>Unit:2</b>	<b>TURKISH INVASION AND THE SLAVE DYNASTY</b>					<b>15 hours</b>	
Invasion of Mohammad of Ghazni - Ghoris - Qutb-ud-din Aibak - Iltutmish - Raziya Begum - Balban.							
<b>Unit:3</b>	<b>KHILJIS AND TUGLAQS</b>					<b>15 hours</b>	
Alauddin Khilji - Malik Kafur's invasion - Mohammad-bin-Tughlak – Firoz Tughlak - Timur's invasion.							
<b>Unit:4</b>	<b>LODI DYNASTY</b>					<b>14 hours</b>	
The Lodis: Bahlol Lodi - Sikandar Lodi - Administration under Delhi Sultanate - Decline of the Sultanate.							
<b>Unit:5</b>	<b>SOCIETY AND CULTURE</b>					<b>14 hours</b>	
Social and Economic life - Art and Architecture under the Sultanate-Vijayanagar Empire and Bahmani Kingdom- Bhakti movement.							

<b>Maps:</b> 1. Ghor Invasion, 2. Alauddin Khilji Empire, 3. Tughlaq Empire –Mohammed – bin-Tughlak, 4. Malik Kafur's South Indian campaigns.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Kundra, <i>History of India</i> , Kamal Arora Publishers, New Delhi, 1997.	
2	Phalaksha, <i>History of Ancient Period Vol-I</i> , Shahshi Prakashana, 2013.	
<b>Reference Books</b>		
1	Mahajan V. D., <i>Medieval India</i> , S Chand, Eleventh edition, 1991.	
2	Majumdar R. C., Dutta K. K., and Roy Choudry, <i>Advanced History of India</i> , Laxmi Publications Pvt. Ltd.; Fourth edition, 2016.	
3	Pandey, A.B., <i>Early Medieval India</i> , ed. 2 (Allahabad, Central Book Depot, 1970).	
4	Sathyanatha Iyer R., <i>History of India Vol II</i> , S. Viswanathan, 1941.	
5	Satish Chandra, <i>Medieval India, From Sultanate to the Mughals</i> , Delhi, Har Anand Publications, 1997.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=ZBgYc8Ed5WY">https://www.youtube.com/watch?v=ZBgYc8Ed5WY</a>	
2	<a href="https://en.wikipedia.org/wiki/Medieval_India">https://en.wikipedia.org/wiki/Medieval_India</a>	
3	<a href="https://www.tutorialspoint.com/medieval_indian_history/medieval_indian_history_tutorial.pdf">https://www.tutorialspoint.com/medieval_indian_history/medieval_indian_history_tutorial.pdf</a>	
Course Designed By: <b>Dr. S. Z. Niazudeen, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	S	M	M	M	M	M
<b>CO2</b>	S	S	M	S	M	M	S	M	M
<b>CO3</b>	S	S	S	S	M	S	S	S	S
<b>CO4</b>	S	M	S	S	M	S	M	S	S
<b>CO5</b>	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

# Second Semester

Course code	TITLE OF THE COURSE			L	T	P	C
Core – III	HISTORY OF INDIA FROM 1526 A.D. TO 1707 A.D.			6	-	-	4
Pre-requisite	Elementary knowledge of Indian History			Syllabus		rsion	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>Trace the history of Mughals and the key events that happened in between 1526 A.D. to 1707 A.D.</li> <li>Acquaint the students about the Mughals, Marathas and Vijayanagar ruler Krishnadevaraya.</li> <li>Inculcate the knowledge of political difference of the period and its impact on society and culture.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the important historical developments of mughal rule.						K1
2	Classify and compare the regimes of different dynasties and recognize and articulate about the diversity of historical experience.						K2
3	Apply and accept the concept of religious harmony and its significance to India						K3
4	Analyze the drawbacks of political and religious animosities of the period.						K4
5	Evaluate the contributions of Mughals.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>ESTABLISHMENT OF MUGHAL RULE</b>					<b>15 hours</b>	
Sources of Mughal History - India on the eve of Babur's invasion - Early career of Babur - Battle of Panipet and major campaigns - Causes for the success of Babur - Haumayun and his difficulties							
<b>Unit:2</b>	<b>SUR INTERLUDE AND THE REIGN OF MUGHALS</b>					<b>15 hours</b>	
Sher Shah and his rise to power - Shershah's administration - Akbar - Conquests of Akbar-Religious policy - Rajput policy - Mansabdari system - Raja Todarmal - Jehangir - Nurjahan Junta - Shah Jahan.							
<b>Unit:3</b>	<b>DISINTEGRATION OF MUGHALS</b>					<b>15 hours</b>	
Aurangzeb - Conquest - Religious Policy - Rise of Marathas - Shivaji - Maratha Administration - Factors for the decline of Mughal Empire							

<b>Unit:4</b>	<b>POLITY IN SOUTH</b>	<b>14 hours</b>
Krishna Devaraya - Achievements and Administration - Social and Economic life - Art and Architecture - The fall of the Bahmani kingdom and the emergence of Deccani Sultanates-Relation with Vijayanagar - Deccan Policy of Mughals.		
<b>Unit:5</b>	<b>SOCIETY AND CULTURE</b>	<b>14 hours</b>
Condition of society – Nobility - Position of Women - Administration of the Mughals - Mughal Art and Architecture – Paintings – Literature - Abul Fazal.		
<b>Maps:</b> 1. Akbar’s Empire, 2. Aurangzeb’s Empire, 3. Shivaji’s Empire, 4. Vijayanagar Empire under Krishna Devaraya.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Mahajan V.D., History of Medieval India, S. Chand, 1991.	
3	Salma Ahamed Farooqi, <i>A Comprehensive History of Medieval India from Twelfth to the Mid Eighteen Century</i> , Pearson Education India, 2011.	
2	Satish Chandra, <i>History of Medieval India</i> , Orient Black Swan Pvt. Ltd., Hyderabad, 2015.	
4.	Srivastava A.L., <i>The Mughal Empire</i> , Shiva Lal Agarwala & Co., 1970.	
<b>Reference Books</b>		
1	Athar Ali M., <i>Mughal India: Studies in Polity, Ideas, Society, and Culture</i> , OUP India, 2008.	
2	Banerji S. K., <i>Humayun Badshah</i> , Vol. I, Nabu Press, 2011.	
3	Beni Prasad, <i>History of Jahangir</i> , Bharatiya Kala Prakashan, 2013.	
4	Ishwari Prasad, <i>Life and Times of Humayun Padshah</i> , S. C. Ghose at Calcutta Press Private Limited, 1955.	
5	Mohd. Azhar Ansari, <i>Socio-Cultural Life of the Great Mughals (1526-1707 AD)</i> , Sandeep Prakashan, 2008.	
6	Muzaffar Alam & Sanjay Subrahmanyam, <i>The Mughal State (1526-1750)</i> , Oxford University Press, 2000.	
7	Qanungo. K.A., <i>Sher Shah and His Times</i> , Orient Longmans, 1965.	
8	Raychaudhuri T., (ed.) <i>Cambridge Economic History of India</i> , vol. I, Cambridge University Press, 1982.	
9	Rushbrook Williams: <i>An Empire Builder of the Sixteenth Century</i> , Kessinger Publishing, 2010.	
11	Sharma S. R., <i>The Religious Policy of the Mughal Emperors</i> , Book Enclave, 2001.	
10	Saksena B. P., <i>History of Shah Jahan of Delhi</i> , Bharatiya Kala Prakashan, 2013.	

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	e-Pathasala, <a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> , <b>Subject:</b> Indian Culture, Paper 1: Outlines of Indian History, E Text and Self Learning Module: M-24 to 29.
2.	<a href="https://www.rarebooksocietyofindia.org/book_archive/196174216674_10154899028046675.pdf">https://www.rarebooksocietyofindia.org/book_archive/196174216674_10154899028046675.pdf</a> (Religious Policy of Mughals by R.S. Sharma)
3.	e-Pathasala, <a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> , <b>Subject:</b> Indian Culture, Paper 10: Outlines of Indian History, E Text and Self Learning Module: M-24 to 29.
4.	<a href="https://en.wikipedia.org/wiki/Mughal_emperors">https://en.wikipedia.org/wiki/Mughal_emperors</a>
5.	<a href="http://www.historyworld.net/wrldhis/PlainTextHistories.asp?ParagraphID=hkj">http://www.historyworld.net/wrldhis/PlainTextHistories.asp?ParagraphID=hkj</a> <a href="https://www.youtube.com/watch?v=m2KLMxyWh9Q">https://www.youtube.com/watch?v=m2KLMxyWh9Q</a> <a href="https://www.youtube.com/watch?v=5T_Q_VWjZGU">https://www.youtube.com/watch?v=5T_Q_VWjZGU</a> (Social and Political Formation and Economy of Vijayanagar Empire)
Course Designed By: <b>Dr. S. Z. NIAZUDEEN, Asst. Prof. of History, Sri Vasavi College, Erode</b>	

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	M	S	M	S	M
<b>CO3</b>	S	S	S	M	M	M	S	M	S
<b>CO3</b>	S	S	S	M	M	S	M	S	S
<b>CO4</b>	S	S	S	S	M	S	S	M	S
<b>CO5</b>	S	S	S	M	S	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
<b>Core – IV</b>	<b>HISTORY OF INDIA 1707 A.D. TO 1858 A.D.</b>			<b>5</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Elementary knowledge of Indian History</b>			<b>Syllabus revision</b>			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>Trace the establishment of British power in Bengal.</li> <li>Acquaint the students about the contribution of Warren Hasting's Administrative reforms in British India.</li> <li>Make the students to know about the British imperialistic policy in India.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the British Administrators and their reforms.						K1
2	Understand the colonial wars and their impact.						K2
3	Apply the constitutional provisions to understand the present political developments.						K3
4	Analyze the role of Dalhousie in modernization in India.						K4
5	Evaluate the social reforms and changes in Indian society.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>MARATHA CONFEDERACY</b>					<b>15 hours</b>	
Maratha Confederacy - Peshwas - Balaji Viswanath - Baji Rao I - Balaji Baji Rao - Third Battle of Panipat.							
<b>Unit:2</b>	<b>ADVENT OF EUROPEANS</b>					<b>15 hours</b>	
Advent of the Europeans - English East India Company - Carnatic Wars – Annexation of Bengal - Robert Clive.							
<b>Unit:3</b>	<b>WARREN HASTINGS'S ADMINISTRATIVE REFORMS</b>					<b>15 hours</b>	
Lord Warren Hastings - Administrative Reforms - Trial of Warren Hastings - Anglo - Maratha Relations.							
<b>Unit:4</b>	<b>COLONIAL ADMINISTRATION</b>					<b>14 hours</b>	
Lord Cornwallis - Permanent Land Revenue Settlement - Anglo-Mysore relations - Lord Wellesley - Subsidiary Alliance - Merits and Demerits.							

<b>Unit:5</b>	<b>COLONIAL ADMINISTRATION</b>	<b>14 hours</b>
Lord Hastings - Reforms - Gurkha War - Pindaris - Lord William Bentinck - Reforms - Lord Dalhousie - Administration - Doctrine of Lapse - Burmese Wars - Revolt of 1857 A.D.- Causes - Course - Results.		
<b>Maps:</b> 1. Carnatic wars, 2. India under Wellesley, 3. India under Dalhousie, 4. The Revolt of 1857.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Mahajan. V.D., <i>An Advanced History of India</i> , Mac Milan, New Delhi, 2002.	
2	Khurana A. L., <i>Modern India (1707 A.D-1967 A.D.)</i> , Lakshmi Narain Agarwal, 2017.	
<b>Reference Books</b>		
1	Bipin Chandra, <i>Modern India</i> , Orient Black Swan, 2018.	
2	Choudhary B. P., <i>History of India</i> , Abhijeet Publication, New Delhi, 2012.	
3	Mahajan V.D., <i>Modern India</i> , S. Chand & Company Ltd, New Delhi, 2012.	
4	Majumdar. R.C & Roy Choudri. H.C, <i>An Advanced History of India</i> , Macmillan Publishers, India Ltd, New Delhi, 1978.	
5	Ramalingam T.S., <i>History of India 1707 to the present Day</i> , TSR Publications, Madurai, 1994.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/The_History_of_British_India">https://en.wikipedia.org/wiki/The_History_of_British_India</a>	
2	<a href="https://www.tutorialspoint.com/modern_indian_history/modern_indian_history_tutorial.pdf">https://www.tutorialspoint.com/modern_indian_history/modern_indian_history_tutorial.pdf</a>	
3	<a href="https://www.tutorialspoint.com/modern_indian_history/modern_indian_history_tutorial.pdf">https://www.tutorialspoint.com/modern_indian_history/modern_indian_history_tutorial.pdf</a>	
Course Designed By: <b>Prof. S. PANDIYALAKSHMI, Asst. Prof. of History, Sri Vasavi College, Erode</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	S	M	M	S	S
<b>CO3</b>	S	S	M	S	S	S	M	S	S
<b>CO3</b>	S	S	S	S	M	M	M	M	S
<b>CO4</b>	S	S	M	S	M	M	S	S	M
<b>CO5</b>	S	S	M	S	S	S	S	M	M

\*S-Strong; M-Medium; L-Low



# Third Semester

Course code	TITLE OF THE COURSE			L	T	P	C
Core – V	HISTORY OF INDIA 1858 A.D. TO 1947 A.D.			4	-	-	4
Pre-requisite	Elementary knowledge of Indian History			Syllabus revision			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Educate about the emergence of Indian Nationalism. 2. Inculcate the knowledge about the values cherished in the freedom movement. 3. Teach the role played by the freedom fighters against the alien rule.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the historical events after Queen's Proclamation.						K1
2	Understand the factors responsible for emergence of Nationalism.						K2
3	Apply the principles of Ahimsa and Satyagraha.						K3
4	Evaluate the importance to Independence.						K5
5	Analyze the impact of Colonialism.						K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>BRITISH PARAMOUNTCY</b>			<b>12 hours</b>			
Queen's proclamation 1858 - Lord Canning - Lord Lytton - Lord Ripon - Lord Curzon							
<b>Unit:2</b>	<b>BIRTH OF INDIAN NATIONAL CONGRESS</b>			<b>12 hours</b>			
Birth of Indian National Congress - Moderates and Extremists - Muslim League - Home Rule Movement.							
<b>Unit:3</b>	<b>GANDHIAN ERA</b>			<b>12 hours</b>			
Gandhian Era: Non Co-Operation Movement - Civil Disobedience Movement - Round Table Conferences - Individual Satyagraha - Cripps's Proposal.							
<b>Unit:4</b>	<b>TOWARDS INDEPENDENCE</b>			<b>11 hours</b>			
Quit India Movement – Indian National Army - Wavell Plan - Cabinet Mission plan - Mountbatten Plan							
<b>Unit:5</b>	<b>FREEDOM FIGHTERS</b>			<b>11 hours</b>			
Indian Independence Act 1947 A.D. - Great Leaders: Gopala Krishna Gokhale, Mahatma Gandhi, Jawaharlal Nehru, Sardar Vallabhai Patel, V. O. Chidambaram, Rajaji.							
<b>Maps:</b> 1. India under Lord Lytton, 2. India under Lord Curzon, 3. French and Portuguese settlements in India on the eve of Independence. 4. Partition of India in 1947 A.D.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
		<b>Total Lecture hours</b>
		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Keswani. K. B., <i>History of Modern India from 1800 A.D-1984 A.D</i> , Himalaya Publishing House, Bombay, 1985.	
2	Venkatesan G., <i>History of Freedom Struggles in India</i> , Rainbow Publication, Coimbatore, 1985.	
<b>Reference Books</b>		
1	Agarwal. R. C., <i>Constitutional Development of India and National Movement</i> , S. Chand & Carnet, New Delhi, 1986.	
2	Mahajan V. D., <i>History of National Movement in India</i> , S. Chand & Carnet, New Delhi, 1985, Ed-III.	
3	Majumdar R. C., <i>An Advanced History of India Part III</i> , MacMillan, 1988.	
4	Sathianathaier, <i>History of India Vol. III</i> , S. Viswanathan, Madras, 1969.	
5	Sharma S.R., <i>Indian Movement 1857 A.D. – 1947 A.D.</i> , B.R. Publishing Corporation, Delhi, 1988, Ed-1.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Indian_independence_movement#:~:text=The%20Indian%20Independence%20Movement%20was,Indian%20independence%20emerged%20from%20Bengal.">https://en.wikipedia.org/wiki/Indian_independence_movement#:~:text=The%20Indian%20Independence%20Movement%20was,Indian%20independence%20emerged%20from%20Bengal.</a>	
2	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> Module: 33 to 40	
3	<a href="https://en.wikipedia.org/wiki/History_of_the_Indian_National_Congress">https://en.wikipedia.org/wiki/History_of_the_Indian_National_Congress</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Asst. Prof. of History, Sri Vasavi College, Erode.		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	S	M	S	M	S	M
<b>CO3</b>	S	S	M	S	M	S	M	M	S
<b>CO3</b>	S	S	S	S	M	S	S	S	S
<b>CO4</b>	S	S	S	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
Core – VI	HISTORY OF INDIA FROM 1947 A.D. TO 2000 A.D.			4	-	-	4
Pre-requisite	Basic knowledge of history			Syllabus revision			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Learn about the history of Modern India in the Post- Independent period and the role of chief architects in building it.							
2. Know about the evolution of the Indian Constitution.							
3. Impart the role of planning commission, five year plans and the development of science and technology in India.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	List out the important events after the post Independence period of India.						K1
2	Understand the foreign policy of India.						K2
3	Apply the ideals of national leader towards a better society.						K3
4	Analyze the economic developments during the congress ministries.						K4
5	Evaluate the National Front government and Kargil war.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>INDIA ON THE EVE OF INDEPENDENCE</b>			<b>12 hours</b>			
Dawn of Independence - Partition of India - Sardar Vallabai Patel - Integration of Princely States - Republican Constitution of 1950 A.D.							
<b>Unit:2</b>	<b>NEHRUVIAN ERA</b>			<b>12 hours</b>			
Planning and Development - India's Foreign Policy - NAM - Linguistic Reorganization of Indian states - Growth of Education - Public Service Commission and its Role.							
<b>Unit:3</b>	<b>INDIA AFTER NEHRU</b>			<b>12 hours</b>			
Lal Bahadur Sastri -Tashkent Agreement - Indira Gandhi – Reforms - Pokhran-I - Foreign Policy - Emergency.							
<b>Unit:4</b>	<b>IMPACT OF EMERGENCY</b>			<b>11 hours</b>			
Janata Party Rule - Morarji Desai - Charan Singh - Rolling Plan - Indira Gandhi's second tenure - Operation Blue Star.							
<b>Unit:5</b>	<b>NEW ECONOMIC POLICY</b>			<b>11 hours</b>			
India's Role in World Affairs from 1964 to 1984 - Rajiv Gandhi-National Front government - V.P. Singh- Narasimha Rao - Vajpayee - Pokhran Explosion - Bus Diplomacy.							
<b>Maps:</b>							
1. State Reorganization - 1956 A.D.							
2. India and SAARC							

3. Major ports and Airports in India	
4. Important Dams in India (Bakranangal, Heerakut, Damodar, Krishnaraj Sagar, Mettur Dam, Pykara and Nagarjuna)	
<b>Unit:6</b>	<b>Contemporary Issues</b>
Expert lectures, online seminars – webinars	
	<b>Total Lecture hours</b>
	<b>60 hours</b>
<b>Text Book(s)</b>	
1	Kundra, <i>History of India</i> , Kamal Arora Publishers, New Delhi, 1997.
2	Phalaksha, <i>History of Modern Period Vol-IV</i> , Shahshi Prakashana, 2013.
3	Stanley A Wolpert, <i>New History of India</i> , Oxford University Press, 2003.
<b>Reference Books</b>	
1	Agarwal. R. C, <i>Constitutional Development of India and National Movement</i> , S. Chand & Carnet, New Delhi, 1986.
2	Bipan Chandra, <i>Modern India</i> , Orient BlackSwan, 2009.
3	Bipan Chandra, <i>India since Independent</i> , Penguin Publications, 2001.
4	Keswani. K. B, <i>History of Modern India 1800 A.D.-1984 A.D.</i> , Himalaya Publishing House, Bombay, 1985.
5	Radhey Shyam Chaurasia, <i>History of Modern India: 1707 A.D. to Upto 2000 A.D.</i> , Atlantic Publishers, New Delhi, 2002.
6	Thakur, Ramesh, <i>The Government and Politics of India</i> , Houndenville, Macmillan, 1995.
7	Venkatesan. G, <i>History of Contemporary India</i> , V.C. Publications, Madurai, 2012.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=x7cAW76QoM8">https://www.youtube.com/watch?v=x7cAW76QoM8</a>
2	<a href="http://ndl.iitkgp.ac.in/">http://ndl.iitkgp.ac.in/</a>
3	<a href="https://en.wikipedia.org/wiki/History_of_the_Republic_of_India">https://en.wikipedia.org/wiki/History_of_the_Republic_of_India</a>
4	<a href="http://egyankosh.ac.in/handle/123456789/20125">http://egyankosh.ac.in/handle/123456789/20125</a> Foreign policy of India <a href="http://egyankosh.ac.in/handle/123456789/22968">http://egyankosh.ac.in/handle/123456789/22968</a>
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>	

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	S	S	S	S
CO3	S	S	M	S	M	M	S	S	M
CO3	S	S	S	S	M	S	M	M	S
CO4	S	S	M	S	M	M	M	S	M
CO5	S	S	M	S	S	M	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C	
<b>Skill Based Subject - I</b>	<b>ORIGIN AND GROWTH OF TOURISM</b>			<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	
<b>Pre-requisite</b>	<b>Basic knowledge about Tourism</b>			<b>Syllabus</b>		<b>rsion</b>		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Enable the students to understand the importance of tourism with focus on origin and growth of Tourism.</li> <li>2. Highlight the significance of Tourism</li> <li>3. Know the employability in Tourism Industry.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Know about the meaning and concepts of Tourism.						K1	
2	Classify the types of tourism.						K3	
3	Understand the establishments of WTO, PATA, ITDC, TTDC etc.,						K2	
4	Analyze the qualities of a Tourist Guide.						K4	
5	Evaluate the contribution of tourism to the development of economy.						K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>								
<b>TRAVEL THROUGH AGES</b>			<b>9 hours</b>					
Definition of Tourism - Travel through the Ages - Effects of Tourism - Industrial Development and Balance of payments.								
<b>Unit:2</b>								
<b>ELEMENTS &amp; FACTORS PROMOTING TOURISM</b>			<b>9 hours</b>					
Elements of Tourism - Factors promoting Tourism: Hospitality, Travel Agency - Tour operator - Transportation Facilities: Road, Rail, Water and Air - Accommodation.								
<b>Unit:3</b>								
<b>TYPES OF TOURISM</b>			<b>9 hours</b>					
Types of Tourism: Pleasure Tourism, Religious Tourism, Sports Tourism, Medical Tourism and Eco - Tourism.								
<b>Unit:4</b>								
<b>DOMESTIC TOURISM</b>			<b>8 hours</b>					
Concept of Domestic Tourism - Growth of domestic tourism in India- Benefits of Home Tourism - Role of Hotels in Domestic Tourism - Functions of TTDC.								
<b>Unit:5</b>								
<b>INTERNATIONAL TOURISM</b>			<b>8 hours</b>					
International Tourism: Growth and Development - International Economic Activity - Tourism and International Organizations -WTO, PATA, IAEA, ICAO - Functions.								

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Book(s)</b>		
1	Bhatia A.K., <i>Tourism Development, Principles and Practices</i> , Sterling c Publishers (P) Ltd, New Delhi, 2002.	
2	Parveen Sethi, <i>Hand book of Tourism</i> , Anmol Publication, New Delhi, 1999.	
<b>Reference Books</b>		
1	Anand N.M, <i>Tourism and Hotel Industry in India</i> , Sterling Publishers (P) Ltd, New Delhi, 1976.	
2	Anand Ballabh, <i>Fundamentals of Travel And Tourism</i> , Akansha Publishing, 2005.	
3	Bhatia. A. K, <i>Tourism Management and Marketing</i> , Sterling Publishers, Delhi, 1997.	
4	Chistopher J. Holloway, <i>The Business of Tourism</i> , Macdonald and Evans 1983.	
5	Kaul E.H., <i>Dynamics of Tourism</i> , Stosius Inc/Advent Books Division, 1985.	
6	Sharma K. K., <i>Tourism And Culture</i> , Sarup & Sons, 1999.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://egyankosh.ac.in/handle/123456789/60069">http://egyankosh.ac.in/handle/123456789/60069</a>	
2	<a href="http://egyankosh.ac.in/handle/123456789/42322">http://egyankosh.ac.in/handle/123456789/42322</a>	
3	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827</a> (Tourism P-1, M-01)	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	M	S	M	M	S	M
CO3	S	S	S	M	S	M	S	S	S
CO3	S	S	S	M	S	S	M	M	S
CO4	S	S	S	S	S	S	S	M	S
CO5	S	S	S	M	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

# Fourth Semester



Course code	TITLE OF THE COURSE			L	T	P	C
Core- VII	HISTORY OF TAMIL NADU UPTO 1336 A.D.			4	-	-	4
Pre-requisite	Basic history at School level.			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Teach about the early history of Tamil Nadu and the contribution of Chola, Chera, Pallava and Pandya to the development of Art, Architecture and religion.</li> <li>2. Study the Cholas administrative setup and their contribution culture.</li> <li>3. Study in detail the socio-economic development of the Second Pandyan Empire.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the social and economic development of people from the Sangam Age.						K1
2	Understand and recognize the administration of the Pallavas and art of making sculpture during that period.						K2
3	Understand the development of art in ancient Tamilagam.						K2
4	Analyse the impact of Malik Kafur's invasion.						K3
5	Apply the ideas and culture of Tamils in their life.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION TO TAMILAGAM</b>					<b>12 hours</b>	
Geography - Literary and Archaeological Sources - Pre-History of Tamil Nadu.							
<b>Unit:2</b>	<b>THE SANGAM AGE</b>					<b>12 hours</b>	
The Age of Sangam - Sangam Literature - Thiruvalluvar - a Tamil poet (monograph) - Cheras - Cholas - Pandyas - Administration - Society - Economy - Religion - the Kalabhras.							
<b>Unit:3</b>	<b>THE PALLAVAS</b>					<b>12 hours</b>	
The Pallavas - Origin - Kings - Administration - Pallava conflict with Chalukyas and Pandyas - Art and Architecture - Religion.							
<b>Unit:4</b>	<b>IMPERIAL CHOLAS</b>					<b>11 hours</b>	
Imperial Cholas - Vijayalaya to Kulothunga I - Administration, Art and Architecture - Literature - Society.							
<b>Unit:5</b>	<b>PANDIYA EMPIRE</b>					<b>11 hours</b>	
Pandya Empire - First and Second Pandya Empire - Muslim invasion - Madurai Sultanate - Fine Arts - Literature.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars – webinars							
<b>Total Lecture hours</b>						<b>60 hours</b>	

<b>Text Book(s)</b>	
1	Devanesan. A, <i>History of Tamil nadu</i> , Renu Publications, Marthandam, 1998.
2	Maharajan S., <i>Thiruvalluvar</i> (Tamil poet) - (Monograph), Pp. 96, Reprint 2017, ISBN – 978-81-260-5321-6.
3	Rajayyan. K, <i>Tamil Nadu - A Real History</i> , Ratna Publications, Madurai, 2005.
<b>Reference Books</b>	
1	C. Meenakchi, <i>Administration and Social Life under the Pallavas</i> , University of Madras, Madras, 1938.
2	Neelakanta Sastri K. A., <i>History of South India</i> , Oxford University Press, Delhi, 2002.
3	Pillay K. K., <i>A Social History of the Tamil Nadu: Her People and Culture</i> , Tamil Nadu Course Book: Society, 1977.
4	Manian N.S., <i>History of Tamil Nadu</i> , Annai Publications, Palayamkottai, 1976.
5	Subramanian N., <i>History of Tamil nadu</i> , Koodal Publishers, Madurai, 1976.
6	Srinivasa Aiyangar. P. T, <i>The History of the Tamils</i> , Asian Educational Services, 2001.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://ta.wikipedia.org/wiki/%E0%AE%A4%E0%AE%AE%E0%AE%BF%E0%AE%B4%E0%AE%95_%E0%AE%B5%E0%AE%B0%E0%AE%B2%E0%AE%BE%E0%AE%B1%E0%AF%81">https://ta.wikipedia.org/wiki/%E0%AE%A4%E0%AE%AE%E0%AE%BF%E0%AE%B4%E0%AE%95_%E0%AE%B5%E0%AE%B0%E0%AE%B2%E0%AE%BE%E0%AE%B1%E0%AF%81</a>
2	<a href="https://www.youtube.com/watch?v=YCExapKqgh8">https://www.youtube.com/watch?v=YCExapKqgh8</a>
3	<a href="https://www.youtube.com/watch?v=feJRgHRB4NU">https://www.youtube.com/watch?v=feJRgHRB4NU</a>
Course Designed By: <b>Prof. S. PANDIYALAKSHMI, Asst. Prof. of History, Sri Vasavi College, Erode.</b>	

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	M	S	S	S	S	M
CO3	S	S	S	M	S	S	M	M	M
CO3	S	S	S	M	S	M	S	M	M
CO4	S	S	S	S	S	M	S	S	S
CO5	S	S	S	M	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
Core- VIII	HISTORY OF TAMILNADU FROM 1336 A.D. TO 1977 A.D.			4	-	-	4
Pre-requisite	Basic history at school level.			Syllabus version			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Know the history of Tamil Nadu.</li> <li>2. Learn the socio economic, political and cultural changes in Tamil Nadu.</li> <li>3. Make them to learn about the precursor of Indian freedom struggle in Tamil Nadu.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the historical events of the period.						K1
2	Understand the Nayak Rule in Tamil Nadu.						K2
3	Evaluate the establishment of the British rule in Tamil Nadu and evaluate the role of Tamils in Freedom movement						K5
4	Analyze the rise of various Political Parties and contribution of leaders.						K4
5	Create interest on Art and Literature of Tamil Nadu.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>VIJAYANAGARA EMPIRE</b>					<b>12 hours</b>	
Tamil Nadu under the Vijayanagar rulers - Expedition of Kumarakampana - Battle of Talaikkotta.							
<b>Unit:2</b>	<b>TAMIL NADU UNDER THE NAYAKS</b>					<b>12 hours</b>	
Nayaks of Madurai - Nayaks of Tanjore - Nayaks of Jinji - Administration - Art and Architecture - Literature - Religion.							
<b>Unit:3</b>	<b>NAWABS AND OTHER DYNASTIES</b>					<b>12 hours</b>	
Nawabs of Arcot - Rulers of Ramnad, Sivaganga and Pudukkottai.							
<b>Unit:4</b>	<b>EUROPEANS IN TAMILNADU</b>					<b>11 hours</b>	
Europeans in Tamilnadu - Trade centers - Carnatic Wars - Vellore Mutiny - Freedom Movement in Tamilnadu.							
<b>Unit:5</b>	<b>POLITICAL ASPECTS OF TAMIL NADU</b>					<b>11 hours</b>	
Justice Party - E.V. Ramasamy Periyar - Congress Administration: Rajaji - Kamaraj- Bhaktavatsalam - DMK Administration: C. N. Annadurai - M. Karunanidhi - Economic development since Independence - Art and Literature.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars – webinars							

		<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Book(s)</b>			
1	Krishnaswamy A., <i>Nayaks of Madura</i> , Annamalai University.		
2	Krishnaswamy .A, <i>Tamil Country under Vijayanagar</i> , Annamalai University, 1964.		
3	Rajayyan K., <i>History of Tamilnadu</i> , Raj Publishers, 1982.		
4	Ma. Po. Sivagnanam, <i>History of freedom movement in Tamil Nadu</i> , Tamil University Publication, Thanjavur, 1988.		
5	Subramanian N., <i>Social and Cultural History of Tamilnadu upto 1984</i> .		
<b>Reference Books</b>			
1	Boag G.T., <i>The Madras Presidency</i> , Government Press, 1933		
2	Burton Stein, <i>Vijayanagar</i> , New Cambridge History, 2005.		
3	Caldwell. R, <i>History of Tinnevelly</i> , Asian Educational Services, 1989.		
4	Dirks Nicholas, <i>The Hollow Crown Ethno history of an Indian Kingdom (Cambridge South Asian Studies)</i> , Cambridge University Press, 2007.		
5	Mahalingam T.V., <i>Administration and Social life under the Vijayanagar</i> , University of Madras, 1969.		
6	Raju Kalidas, <i>Social and Cultural History of Tamilnadu</i> .		
7	Vaidyanathan K. S., <i>The Ancient Geography of the Kongu Country</i> , Coimbatore, 1983.		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>			
1	<a href="https://en.wikipedia.org/wiki/History_of_Tamil_Nadu">https://en.wikipedia.org/wiki/History_of_Tamil_Nadu</a>		
2	<a href="https://www.britannica.com/place/Tamil-Nadu/Cultural-life">https://www.britannica.com/place/Tamil-Nadu/Cultural-life</a>		
3	<a href="https://www.britannica.com/topic/Tamil">https://www.britannica.com/topic/Tamil</a> <a href="https://en.wikipedia.org/wiki/Indian_independence_movement_in_Tamil_Nadu">https://en.wikipedia.org/wiki/Indian_independence_movement_in_Tamil_Nadu</a>		
Course Designed By: <b>Prof. M.THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>			

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	M	S	M	S	M
<b>CO3</b>	S	S	S	S	M	M	S	M	M
<b>CO3</b>	S	S	M	S	S	S	S	S	S
<b>CO4</b>	S	S	M	S	S	S	S	M	M
<b>CO5</b>	S	S	S	S	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
<b>Skill Based Subject- II</b>	<b>HISTORY AND DISASTER MANAGEMENT</b>			<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Pre-requisite</b>	<b>Basic knowledge of Disaster at school level.</b>			<b>Syllabus revision</b>			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Acquaint the students about the major disaster in history and the importance of disaster management.</li> <li>2. Educate about the different kinds of Disasters.</li> <li>3. Teach about the preparedness during the emergencies.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the important disasters in history and evolution of Disaster Management in India.						K1
2	Understand the social and economic effects of destructions of disasters.						K2
3	Assess the importance of prevention and preparedness before disasters.						K3
4	Identify the issues of Global warming, climate change and pollution.						K4
5	Judge the role of NDMA, SDMA, NDRF, Fire service and Rescue Force and youth during disaster.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>HISTORY OF DISASTERS</b>					<b>9 hours</b>	
Meaning, Nature and Importance of Disaster Management - History of Disasters - Major Natural Disaster in the History of India - Evolution of Disaster Management in India.							
<b>Unit:2</b>	<b>NATURAL DISASTERS</b>					<b>9 hours</b>	
Classification of Disasters - Wind Related - Storms, Cyclones, Tornados and Tidal Waves - Water Related - Floods - Cloudburst - Excessive Rains and Droughts - Earth Related - Earthquakes, Tsunamis, Avalanches, Landslides, Volcanic Eruptions.							
<b>Unit:3</b>	<b>MAN MADE DISASTER</b>					<b>9 hours</b>	
Fire-Forest Fire-Oil Fire-Fire Fighting-Industrial Mishaps-Contamination-Terrorist Activities-Ecological-Pollution-Warfare-Conventional, Chemical, Biological, Nuclear.							
<b>Unit:4</b>	<b>EMERGING CONCERNS</b>					<b>8 hours</b>	
Climate Change-Global Warming-Ozone-Epidemics-Effects of Disasters-Prevention and Mitigation-Preparedness and Response-Warning system.							

<b>Unit:5</b>	<b>NATIONAL DISASTER MANAGEMENT STRUCTURE</b>	<b>8 hours</b>
Civil Defence Organisations in India-NDMA (National Disaster Management Authority)-SDMA (State Disaster Management Authority)-Role of NDRF (National Disaster Response Force)- Role of Fire service and Rescue Force-Role of youth in Disaster Management-Relief measures in the aftermath of disasters.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Book(s)</b>		
1	Harsh K Gupta, <i>Disaster Management</i> , Sangam Books Ltd., 2003.	
2	Vaidyanathan S, <i>A Introduction to Disaster Management: Natural Disasters &amp; Man Made Hazards</i> , Ikon Publication, 2011.	
<b>Reference Books</b>		
1	Pradyumna P Karan & Shanmugam P. Subbaiah, <i>The Indian Ocean Tsunami: The Global Response to a Natural Disaster</i> , University Press of Kentucky, 2010.	
2	Government of India, Ministry of Home Affairs, Disaster Management in India, <a href="https://www.undp.org/content/dam/india/docs/disaster_management_in_india.pdf">https://www.undp.org/content/dam/india/docs/disaster_management_in_india.pdf</a>	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.ndrf.gov.in/inland-operations">http://www.ndrf.gov.in/inland-operations</a> (Rescue and Relief operations of NDRF)	
2	<a href="http://www.ndma.gov.in/en/">http://www.ndma.gov.in/en/</a>	
3	<a href="https://www.ndma.gov.in/images/policyplan/dmplan/draftndmp.pdf">https://www.ndma.gov.in/images/policyplan/dmplan/draftndmp.pdf</a> <a href="file:///C:/Users/Admin/Desktop/DISASTER%20MANAGEMENT.pdf">file:///C:/Users/Admin/Desktop/DISASTER%20MANAGEMENT.pdf</a> (National Disaster Mgt. Plan-I)	
4	<a href="https://www.youtube.com/watch?v=jEJGqu91Lzo">https://www.youtube.com/watch?v=jEJGqu91Lzo</a> <a href="https://www.youtube.com/watch?v=GDEE080tgDY">https://www.youtube.com/watch?v=GDEE080tgDY</a> (Bhopal Disaster) <a href="https://www.youtube.com/watch?v=K-7xtubIdxE">https://www.youtube.com/watch?v=K-7xtubIdxE</a> (Disaster and Disaster Mgt. in India) <a href="https://lecturenotes.in/notes/14515-note-for-disaster-management-dm-by-jntu-heroes?reading=true">https://lecturenotes.in/notes/14515-note-for-disaster-management-dm-by-jntu-heroes?reading=true</a> Lecture Notes	
Course Designed By: <b>Dr. S.Z. NIAZUDEEN, Assistant Professor in History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	M	M	S	S	M	M
<b>CO3</b>	S	S	S	S	M	S	S	M	S
<b>CO3</b>	S	S	M	M	M	S	M	S	M
<b>CO4</b>	S	S	M	S	M	M	S	M	S
<b>CO5</b>	S	S	M	M	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

# Fifth Semester

Course code	TITLE OF THE COURSE	L	T	P	C
Core- IX	HISTORY OF EUROPE FROM 1789 A.D. TO 1945 A.D.	6	-	-	4
Pre-requisite	Should possess basic historical knowledge on world affairs	Syllabus		revision	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Provoke mankind a desire to live in peace across cultures in harmony.</li> <li>2. Teach about the revolutions and the liberal ideas of Modern Europe.</li> <li>3. Enable student to understand the formation of nation states and to understand the Political alliances and world after world wars.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember about social movements in Europe and the formation of nation states.				K1
2	Understand about the expansion of imperial powers, the process of colonization, and democratic.				K2
3	Provide opportunities for debates, discussion in small groups, quiz programs and activities requiring to act out the important European events.				K3
4	Analyze the causes for outbreak of the two world wars.				K4
5	Evaluate the efforts of UNO in promoting world peace.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>FRENCH REVOLUTION AND ITS AFTERMATH</b>	<b>18 hours</b>			
French Revolution of 1789 A.D. - Napoleon Bonaparte - The Congress of Vienna-1815 A.D. - Napoleon III.					
<b>Unit:2</b>	<b>UNIFICATION OF ITALY AND GERMANY</b>	<b>18 hours</b>			
Balkan Crisis (1830 A.D.-1870 A.D.) - Crimean War- Unification of Italy - Unification of Germany - Eastern Question.					
<b>Unit:3</b>	<b>FIRST WORLD WAR AND ITS IMPACT</b>	<b>18 hours</b>			
The First World War 1914 A.D. -1918 A.D. - Treaty of Paris, 1920 A.D. - League of Nations - Russian Revolution of 1917 A.D.- Spanish flu and its impact on Europe					
<b>Unit:4</b>	<b>DICTATORSHIP</b>	<b>17 hours</b>			
Dictatorship in Turkey - Dictatorship in Italy - Dictatorship in Germany - Axis Powers.					
<b>Unit:5</b>	<b>SECOND WORLD WAR AND IS</b>	<b>17 hours</b>			
Second World War 1939 A.D.-1945 A.D. - United Nations Organization- European Economic Community- Marvels of Science and Technology.					



<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Mahajan V. D., <i>History of Modern Europe since 1789 A.D</i> , S. Chand & Company, 2010.	
2	Rao. B.V, <i>History of Europe 1789 A.D – 2013 A.D</i> , Sterling Publications Pvt. Ltd., 2018.	
3	Thomas P. C., <i>History of Europe 1789 A.D – 1945 A.D</i> , Har Anand Publications, India, 2007.	
<b>Reference Books</b>		
1	Fisher H.A.L., <i>A History of Europe (2 Volumes)</i> , HarperCollins Distribution Services, 1969.	
2	Swain James Edgar, <i>History of World civilization</i> , McGraw-Hill Book Co., 1947.	
3	Taylor J.P., <i>The Struggle for mastery in Europe in 19th and 20th Century</i> , OUP Oxford, 1971.	
4	Vandana Joshi, <i>Modern European History</i> , Pearson Education India, 2016.	
5	Davis. H. A., Revised by Blount D.H.C., <i>An Outline History of the World</i> . New Delhi: Oxford University Press, 1968.	
6	Hobsbawm E.J., <i>The Age of Revolution, 1789 A.D-1848 A.D</i> , Phoenix press, London, 1977.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/65">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/65</a>	
2	<a href="http://www.gutenberg.org/files/6589/6589-h/6589-h.htm">http://www.gutenberg.org/files/6589/6589-h/6589-h.htm</a>	
3	<a href="https://en.wikipedia.org/wiki/History_of_Europe">https://en.wikipedia.org/wiki/History_of_Europe</a>	
Course Designed By: <b>R.PRAKASH, Assistant Professor in History, Sri Vasavi College, Erode</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	M	S	S	M	M	M
<b>CO3</b>	S	S	S	M	S	M	M	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S
<b>CO4</b>	S	M	M	S	M	S	S	M	M
<b>CO5</b>	M	S	M	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
<b>Core- X</b>	<b>HISTORY OF ENGLAND FROM 1603 A.D. TO 1945 A.D.</b>			<b>6</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Should possess basic historical knowledge on world affairs</b>			<b>Syllabus revision</b>			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Acquaint the student about the Modern History of England.</li> <li>2. Learn about the Glorious Revolution in England.</li> <li>3. Study the impact of Industrial and Agrarian revolutions</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Gain the knowledge of glorious revolution and its effects.						K1
2	Understand the Constitutional development of England.						K2
3	Analyze the importance of development of Cabinet system and its relation with English monarchs.						K4
4	Evaluate the impact of Industrial and Agrarian revolution.						K5
5	Know the role of England in World Wars.						K1
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>LONG PARLIAMENT</b>					<b>18 hours</b>	
James I and his Parliament - Charles I and Eleven years Tyranny - Long Parliament and Civil war - Oliver Cromwell.							
<b>Unit:2</b>	<b>GLORIOUS REVOLUTION</b>					<b>18 hours</b>	
Charles II and Restoration - Glorious Revolution and its effects - Reign of William and Mary - Act of Union with Scotland.							
<b>Unit:3</b>	<b>17<sup>TH</sup> AND 18<sup>TH</sup> CENTURY ENGLAND</b>					<b>18 hours</b>	
George I and Walpole - George II - George III and American War of Independence - Act of Union with Ireland.							
<b>Unit:4</b>	<b>INDUSTRIAL AND AGRARIAN REVOLUTION</b>					<b>17 hours</b>	
Industrial Revolution - Agrarian Revolution - Reform Act of 1832 A.D. - Victorian Era.							
<b>Unit:5</b>	<b>ENGLAND AND THE WORLD WARS</b>					<b>17 hours</b>	
England and First World War - Statue of West Minister - Abdication of Edward VIII - England and Second World War.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Krishnamurthy V. M., <i>History of England</i> , Vijayalakshmi Publications, Mundy, Noyyur 1980.	
2	Trevelyn G.M., <i>History of England</i> , Cambridge University Press, 1951.	
<b>Reference Books</b>		
1	Basil Williams, <i>The Whig Supremacy</i> , Oxford Clarento Press 1964.	
2	Maunce, Powicie, <i>The Thirteenth Century England</i> , Oxford Clarento Press, 1964.	
3	Padmaja Ashok, <i>Social History Of England</i> , Orient Blackswan, 2011.	
4	Simon Schama, <i>A History of Britain, Vol. 2: The Wars of the British, 1603 A.D-1776 A.D</i> , Miramax, 2001.	
5	Stevem Watson J., <i>The Reign of George III</i> , Oxford Clarento Press 1960.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_England#:~:text=in%20the%20south%20east.,and%20of%20the%20English%20people.">https://en.wikipedia.org/wiki/History_of_England#:~:text=in%20the%20south%20east.,and%20of%20the%20English%20people.</a>	
2	<a href="https://en.wikipedia.org/wiki/George_II_of_Great_Britain">https://en.wikipedia.org/wiki/George_II_of_Great_Britain</a>	
3	<a href="https://en.wikipedia.org/wiki/George_III_of_the_United_Kingdom">https://en.wikipedia.org/wiki/George_III_of_the_United_Kingdom</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	M	S	M	S	S	S	M	M
<b>CO3</b>	S	S	S	S	S	M	M	M	S
<b>CO3</b>	M	S	M	M	M	S	S	S	M
<b>CO4</b>	S	M	S	S	S	M	S	S	M
<b>CO5</b>	M	S	M	M	M	M	M	M	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
Core- XI	HISTORY OF USA UPTO 1865 A.D.			6	-	-	4
Pre-requisite	Basic knowledge of World History			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Give insight on Colonization and Independence of USA.</li> <li>2. Provide knowledge on federal constitution</li> <li>3. Enable students to understand various democratic ideas</li> <li>4. Impart knowledge on slavery and its impact</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand about the effects of the colonization of USA.						K2
2	Analyze the causes and significance of American War of Independence.						K4
3	Infer the making of American Constitution.						K2
4	Perceive various democratic practices.						K4
5	Dissent the system of slavery and racism.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>COLONIZATION IN AMERICA</b>			<b>18 hours</b>			
Physical Features-Impact of Geography-Exploration: Portuguese, Spanish, French, English - Colonization.							
<b>Unit:2</b>	<b>AMERICAN WAR OF INDEPENDENCE</b>			<b>18 hours</b>			
Anglo-French Rivalry-Seven Years War-American War of Independence: causes, course and results and its significance.							
<b>Unit:3</b>	<b>MAKING OF THE CONSTITUTION</b>			<b>18 hours</b>			
Making of the Constitution -Formation of Confederation-Philadelphia Convention-Framing of the Constitution.							
<b>Unit:4</b>	<b>EVOLUTION OF AMERICAN DEMOCRACY</b>			<b>17 hours</b>			
Evolution of American Democracy-Federalists: Jeffersonianism, Jacksonianism-Rise of Political Parties- The War of 1812- Monroe Doctrine.							
<b>Unit:5</b>	<b>ISSUE OF SLAVERY</b>			<b>17 hours</b>			
Westward Expansion-Manifest Destiny-Mexican War-Slavery and its Abolition Movement, the Civil War.							

<b>Unit:6</b>	<b>CONTEMPORARY ISSUES</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Majumdar R. C. and Srivastava. A.L., <i>History of United States of America</i> , 5 <sup>th</sup> ed, <u>Surjeet Publications</u> , 2017.	
2	Subramanian N., <i>A History of the USA</i> , 3 <sup>rd</sup> ed, Ennes Publications, Udumalpet, 2006.	
<b>Reference Books</b>		
1	Beard Charles. A& Mary R. Beard, <i>New Basic History of the United States</i> , Doubleday & Co., 1960	
2	Bernard Bailyn, Robert Dallek, David Davis, David Donald, John Thomas, <i>The Great Republic: A History of the American People</i> , Volume I, 4 <sup>th</sup> ed, Cengage Learning, 1991.	
3	Elson H. W., <i>History of the United States of America</i> , Macmillan, 1913.	
4	Hill C.P., <i>A history of the United States</i> , Edward Arnold, 1942.	
5	Parkes H.B., <i>The United States of America: A History</i> , Knopf, 1953	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_the_United_States">https://en.wikipedia.org/wiki/History_of_the_United_States</a>	
2	<a href="https://www.youtube.com/watch?v=cW2v2TR1i8U">https://www.youtube.com/watch?v=cW2v2TR1i8U</a>	
3	<a href="https://en.wikipedia.org/wiki/American_Revolutionary_War">https://en.wikipedia.org/wiki/American_Revolutionary_War</a>	
Course Designed By: <b>Prof. Shangameshwaran, Head &amp; Assistant Professor, Chikkanna Government Arts College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	M	M	M	M	M	S	S	M	M
<b>CO3</b>	S	S	S	S	S	S	M	S	S
<b>CO3</b>	S	S	S	M	M	S	M	M	S
<b>CO4</b>	S	S	S	S	S	M	S	M	S
<b>CO5</b>	M	M	M	M	M	M	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
<b>Core- XII</b>	<b>INDIA AND HER NEIGHBOURS</b>			<b>5</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge of World History</b>			<b>Syllabus</b>		<b>revision</b>	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Learn the foreign policy of India.</li> <li>2. Know the diplomatic relationship of India with the neighbouring countries.</li> <li>3. Impart the economic and cultural relations with neighbouring countries.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the features of India's foreign policy.						K2
2	Identify the problems and challenges of India with neighbouring countries.						K5
3	Get the knowledge of the role of Indira Gandhi in the liberation of Bangladesh.						K1
4	Evaluate the ethnic issues of Sri Lanka.						K5
5	Analyze the role of various organizations in maintaining good relations with neighbouring countries.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>GENESIS OF INDIAN FOREIGN POLICY</b>			<b>15 hours</b>			
Genesis of India's Foreign policy - Features - Nehru's Foreign Policy – India-China relations - Economic Co-operation.							
<b>Unit:2</b>	<b>INDO-PAK RELATIONS</b>			<b>15 hours</b>			
India-Pakistan diplomatic relations - Tashkant Agreement - Bus diplomacy							
<b>Unit:3</b>	<b>LIBERATION OF BANGLADESH</b>			<b>15 hours</b>			
Smt. Indira Gandhi - Liberation of Bangladesh - Commercial relations.							
<b>Unit:4</b>	<b>INDO-SRI LANKAN RELATIONS</b>			<b>14 hours</b>			
India-Sri Lanka - Historical relations - Ethnic issue - Nepal - Bhutan - Afghanistan.							
<b>Unit:5</b>	<b>INDIA'S ROLE IN WORLD PEACE</b>			<b>14 hours</b>			
NAM - SAARC - India's Nuclear Policy - India as a Champion of World Peace and Justice.							
<b>Unit:6</b>	<b>Contemporary Issues</b>			<b>2 hours</b>			
Expert lectures, online seminars – webinars							
						<b>Total Lecture hours</b>	<b>75 hours</b>

<b>Text Book(s)</b>	
1	Jayapalan N, <i>India and Her Neighbours</i> , Atlantic Publishers & Distributors Pvt Ltd., 2000.
2	Mohammed Badrul Alam, <i>India And Her Neighbours: Towards A Proactive Partnership</i> , Kalpaz Publications, 2015.
<b>Reference Books</b>	
1	Gurucharandas, <i>India Unbound</i> , Penguin Publications, New Delhi, 2008.
2	Jawaharlal Nehru, <i>Discovery of India</i> , Govt. of India Publications, New Delhi, 1957.
3	Newspapers, The Hindu, The Times of India, The Indian Express and Dinamani.
4	<u>Palme Dutt R.</u> , <i>India Today</i> , Read Books, 2006.
5	Trivedi Ramesh, <i>India's Relations with Her Neighbours</i> , Isha Books, 2008.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://egyankosh.ac.in/handle/123456789/54636">http://egyankosh.ac.in/handle/123456789/54636</a>
2	<a href="http://egyankosh.ac.in/handle/123456789/55997">http://egyankosh.ac.in/handle/123456789/55997</a>
3	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=29">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=29</a> (India's Foreign Policy, M1 TO M29)
Course Designed By: <b>Prof. M. Thangavel, Asst. Prof. of History, Sri Vasavi College, Erode.</b>	

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	M	S	M	M	M
<b>CO3</b>	S	S	S	S	M	S	S	M	M
<b>CO3</b>	M	M	M	S	S	M	M	S	S
<b>CO4</b>	S	S	S	M	M	S	S	M	S
<b>CO5</b>	S	S	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
<b>Skill Based Subject- III</b>	<b>COMPUTER APPLICATION IN HISTORY (INDUSTRY-4.0)-I</b>			<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Computer</b>			<b>Syllabus</b>		<b>revision</b>	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Acquaint the students about the generations of Computers.</li> <li>2. Educate about the components of Computers.</li> <li>3. Teach about the softwares, hardwares and recent trends (4.0).</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remembers the components of computers.						K1
2	Understand the utilization of input and output devices.						K2
3	Apply the knowledge of computer in the practical utilization.						K3
4	Analyze various tools and operations of Computer.						K4
5	Kindle interest on Internet of Things.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>HISTORY OF COMPUTERS</b>			<b>9 hours</b>			
Introduction to computer - Generation of computers.							
<b>Unit:2</b>	<b>CLASSIFICATION OF COMPUTER</b>			<b>9 hours</b>			
Classifications of computer - Analog, Digital and Hybrid Computers							
<b>Unit:3</b>	<b>HARDWARE</b>			<b>9 hours</b>			
Computer Organization: CPU and Memory Organization - RAM - Types of Random Access Memories - ROM - Types of Read only Memory - Other types of Memories.							
<b>Unit:4</b>	<b>INPUT AND OUTPUT UNITS</b>			<b>8 hours</b>			
Input/output units - Driver - Recorder - Printer - Cathode Ray Tube - Key board and Terminals - MICR, OCR, Scanners Mark sensor.							
<b>Unit:5</b>	<b>SOFT WARE</b>			<b>8 hours</b>			
Software - System software Application software - Uses of computer in the study of History-Online Classes - Apps - Conduct of Webinar and Conference - History of 4.0 - Introduction to Internet of Things.							



<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
		<b>Total Lecture hours</b>
		<b>45 hours</b>
<b>Text Book(s)</b>		
1	Rapidex computer courses.	
2	Peter Norton, <i>Introduction to Computers</i> , McGraw Hill Education, 2017.	
3	Subramanian C.S., <i>Introduction to Computer and Foundations</i> .	
<b>Reference Books</b>		
1	Donalo H. Sanders, <i>Computer Today</i> , McGraw-Hill Companies, 1987.	
2	Taxali R. K., <i>PC Software made simple IV edition</i> , McGraw Hill Education, 2017.	
3	Sinha P. K., <i>Computer Fundamentals</i> , BPB Publications, 2004.	
4	Dr. Subramanian N., <i>Computer Genesis, Programming, Software Applications</i> .	
5	Subramanian N., <i>Computers</i> McGraw Hill Education India Pvt. Ltd., 2001.	
6	Dr. Kaliraj P., Dr. Devi T., <i>Higher Education for Industry 4.0 and Transformation to Education 5.0</i> , 2020.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_software">https://en.wikipedia.org/wiki/History_of_software</a>	
2	<a href="https://en.wikibooks.org/wiki/History_of_Computers/Applications_Development_History">https://en.wikibooks.org/wiki/History_of_Computers/Applications_Development_History</a>	
3	<a href="https://prezi.com/vwsvnkjmidq9/the-history-of-computers-and-computer-applications/?frame=c26681e681d90a98e37cc4061c271a6e3745f312">https://prezi.com/vwsvnkjmidq9/the-history-of-computers-and-computer-applications/?frame=c26681e681d90a98e37cc4061c271a6e3745f312</a>	
Course Designed By: <b>Dr.S.ZNIAZUDEEN, Assistant Professor in History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	M	M	S	M	M
<b>CO3</b>	S	S	M	S	M	M	S	S	S
<b>CO3</b>	S	S	S	S	M	S	M	M	S
<b>CO4</b>	S	S	S	S	M	M	S	S	S
<b>CO5</b>	S	S	S	S	M	S	M	S	M

\*S-Strong; M-Medium; L-Low

# Sixth Semester

Course code	TITLE OF THE COURSE			L	T	P	C
Core- XIII	WORLD HISTORY FROM 1945 A.D. TO 2000 A.D.			6	-	-	4
Pre-requisite	Basic knowledge of World History			Syllabus revision			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Know about the concept of Polar Politics and Diplomacy.</li> <li>2. Impart the knowledge about the establishment of UNO and its role in world peace.</li> <li>3. Teach about the importance of disarmament to world peace.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Know the role of UNO in establishing World Peace.						K1
2	Understand the nature of the balance of power, regional alliances, the UNO and its achievements.						K2
3	Analyze the causes for world wars and conditions of peace.						K4
4	Understand the Cold War between capitalist and communist blocks.						K2
5	Evaluate the need for disarmament to world peace.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>							
<b>COLD WAR</b>			<b>18 hours</b>				
Bipolar - Multi polar - Unipolar- Détente - Regional Arrangements and World Peace- NATO - CENTO - SEATO -WARSAW.							
<b>Unit:2</b>							
<b>ROLE OF UNO IN WORLD PEACE</b>			<b>18 hours</b>				
The U.N.O - Organs - Specialized Agencies Achievements - Collective Security - U.N. Settlement of International Disputes.							
<b>Unit:3</b>							
<b>NUCLEAR DISARMAMENT</b>			<b>18 hours</b>				
Nuclear Disarmament - NTBT - Nuclear Non-Proliferation Treaty - CTBT SALT I and SALT II Bacteriological Toxin Warfare.							
<b>Unit:4</b>							
<b>ORGANIZATION OF AFRO-ASIAN COUNTRIES</b>			<b>17 hours</b>				
Organization for African Unity-Contribution of Nelson Mandela - Palestinian Issue-Arab-Israel War Oil Crisis-Iran-Iraq war implications.							
<b>Unit:5</b>							
<b>OTHER ORGANISATIONS</b>			<b>17 hours</b>				
Common Wealth of Nations - ASEAN - SAARC Summits - BRICS.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Jayabalan N., <i>History of Europe</i> , Atlantic Publishers And Distributors Pvt Ltd, 1999.	
2	Rao B. V., <i>World History</i> , Sterling Publishers Pvt Ltd-New Delhi; 2nd Edition (2012), 1984.	
3	Ramalingam T.S., <i>History of Modern Europe from 1789 to present day</i> , TSR Publications, 1983.	
<b>Reference Books</b>		
1	Gupta Ramesh, <i>Contemporary World since 1939</i> , Surjeet Publications, New Delhi.	
2	Kurushresthra. K. K, <i>A Short History of International Relations</i> .	
3	Nayak P. K., <i>History of the Twentieth Century World (1945 A.D-2000 A.D)</i> , Kalpaz Publications (2017).	
4	Palmer & Perins, <i>International Relations</i> , CBS Publishers & Distributors, 2001.	
5	Sharma .R, <i>Organs of International Relations</i> .	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Cold_War">https://en.wikipedia.org/wiki/Cold_War</a>	
2	<a href="https://www.un.org/en/about-un/">https://www.un.org/en/about-un/</a>	
4	<a href="https://en.wikipedia.org/wiki/Disarmament">https://en.wikipedia.org/wiki/Disarmament</a>	
Course Designed By: <b>Dr. R. Shangameshwaran, Asst. Prof. of History, Chikkanna Govt. Arts College, Tiruppur.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	S	S	M	M	M
<b>CO3</b>	S	S	S	M	S	S	S	M	S
<b>CO3</b>	S	S	M	M	S	M	S	S	S
<b>CO4</b>	S	S	S	S	S	S	S	M	M
<b>CO5</b>	S	S	M	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

## SEMESTER VI

Course code	TITLE OF THE COURSE	L	T	P	C
<b>Core- XIV</b>	<b>HISTORY OF USA 1865 A.D. TO 1990 A.D.</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic Knowledge in World History</b>	<b>Syllabus revision</b>			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Enable student to learn the history of the U.S.A.</li> <li>2. Make the student know about the sufferings of the Negroes.</li> <li>3. Learn the importance of emergence of the U.S.A. as a super power.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the important historical events in the U.S.A.				K1
2	Understand the sufferings of Negroes and support against apartheid.				K2
3	Apply the reforms of F. D. Roosevelt.				K3
4	Analyze the merits and demerits of the foreign policy of the U.S.A.				K4
5	Evaluate the role of U.S.A. in the Cold War.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>CIVIL WAR AND RECONSTRUCTION</b>	<b>18 hours</b>			
America after Civil war - Reconstruction - Presidential - Congressional – Radical - Black Reconstruction - Emancipation of the Negroes.					
<b>Unit:2</b>	<b>RISE OF BIG BUSINESS</b>	<b>18 hours</b>			
Rise of Big Business-Railroad - Oil and Steel - John D. Rockefeller - Andrew Carnegie - Populist Movement.					
<b>Unit:3</b>	<b>AMERICAN IMPERIALISM</b>	<b>18 hours</b>			
Urbanization and its impact - Growth of American Imperialism - The Spanish American War - Theodore Roosevelt - William Howard Taft - Woodrow Wilson - America and First World War					
<b>Unit:4</b>	<b>THE U.S.A. BETWEEN WORLD WARS</b>	<b>17 hours</b>			
The Great Crash - F. D. Roosevelt and New Deal - America and Second World War					
<b>Unit:5</b>	<b>THE U.S.A AND COLD WAR</b>	<b>17 hours</b>			

Truman - Cold War and its impact - D. Eisenhower - Nixon - Water Gate Scandal - General Ford - Jimmy Carter - Ronal Reagan - George - H.W-Bush and Gulf War.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	David A. Shannon, <i>Twentieth Century America, The progressive Era Vol. I</i> , Rand Mc MNolly, 1977.	
2	Majumdar and Srivatsava. A.L., <i>History of the United States of America</i> , SBD, Publications, 2001.	
3	Subramanian N., <i>History of the United States of America</i> , Ennes publications, Madurai, 1990.	
<b>Reference Books</b>		
1	Bernard Bailyn, <i>The Great Republic</i> , DC Heath & Co, Edition: 3, 1985.	
2	David B. Davis, <i>The Problem of Slavery in the Age of Revolution</i> , OUP USA, Subsequent edition, 1999.	
3	Lee Benson, <i>The Concept of Jackson Democracy</i> , Princeton University Press, 2015.	
4	Foster Rhea Dulles - <i>The United States since 1865 AD</i> , University of Michigan, 1969.	
5	Krishnamurthi, <i>History of the United States of America, 1492-1965</i> , Madurai Printers, Madurai, 1980.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_the_United_States_(1865%E2%80%931918)">https://en.wikipedia.org/wiki/History_of_the_United_States_(1865%E2%80%931918)</a>	
2	<a href="https://en.wikipedia.org/wiki/United_States_in_World_War_I">https://en.wikipedia.org/wiki/United_States_in_World_War_I</a>	
3	<a href="https://en.wikipedia.org/wiki/Military_history_of_the_United_States_during_World_War_II">https://en.wikipedia.org/wiki/Military_history_of_the_United_States_during_World_War_II</a>	
Course Designed By: <b>Dr. S. Z. Niazudeen, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	S	S	S	M	M	M
CO3	S	S	M	S	M	S	S	M	S
CO3	S	S	S	M	S	M	S	M	S
CO4	S	S	S	S	S	S	M	S	M
CO5	S	S	M	M	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	TITLE OF THE COURSE			L	T	P	C
Core- XV	APPLIED HISTORY FOR CIVIL SERVICE EXAMINATIONS			5	-	-	4
Pre-requisite	A basic knowledge about Indian and world history			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Equip students with widespread knowledge about Indian and world history</li> <li>2. Train students opting for history as optional subject for civil service examination.</li> <li>3. Furthermore enhance the scope and employability of students.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the Indian and global events in history.						K1
2	Understand history subject and opt it as an optional subject in civil service examination.						K2
3	Apply the acquired knowledge to successfully qualify in civil service examination.						K3
4	Scrutinize all the fact and information for competitive examinations.						K4
5	Evaluate his/her capability of answering to multiple choice questions in competitive exam.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>ANCIENT INDIA</b>			<b>15 hours</b>			
Pre historic India - Indus Valley Civilization - Early Vedic & Later Vedic India - Mauryas - Kushanas - Guptas – Cholas							
<b>Unit:2</b>	<b>MEDIEVAL INDIA</b>			<b>15 hours</b>			
Aibak - Illtutmish - Alauddin khaliji- Mohammed bin Tuglaq - Lodi's reign - Akbar - Shah Jahan - Aurangzeb - Administrative Systems - Society.							
<b>Unit:3</b>	<b>MORDERN INDIA</b>			<b>15 hours</b>			
India under East India Company's Rule - The Great Revolt of 1857- Socio - Religious Reform Movements in the 19th century India - India's Freedom Movement - Gandhian Era-Dawn of Indian Independence							
<b>Unit:4</b>	<b>WORLD HISTORY</b>			<b>14 hours</b>			
First World War - Russian Revolution- League of Nations - Rise of Fascism and Nazism -Second World War - Causes – Results							

<b>Unit:5</b>	<b>CONTEMPORARY WORLD</b>	<b>14 hours</b>
U.N.O and its role in World Peace. Cold Wars - Super Powers - Regional Security Agreements - NATO, SEATO and Warsaw Pact) -Growth of Atomic Weapons - Missiles - Peace Efforts - Fall of Socialist States - Liberalization - Globalization - World Today		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Agarwal J. C., <i>Ancient India</i> , S Chand & Company, 2017.	
2	Sathish Chandra, <i>Essays on Medieval Indian history</i> , Oxford University Press, 2004.	
3	Aggarwal R. C., <i>Indian freedom struggle</i> .	
4	Krishna Reddy, <i>World history for civil service Examination</i> , McGraw Hill Education, 2017.	
<b>Reference Books</b>		
1	Bhasham A.L., <i>Wonder that was India</i> , Picador, Indian ed, 2004.	
2	<a href="#">Chandra Bipan</a> , Mukherjee, Mridula, Mukherjee, Aditya, Mahajan, Sucheta, Panikkar K. N., <i>India's Struggle for Independence</i> . New Delhi: <a href="#">Penguin Books</a>	
3	Jawaharlal Nehru, <i>Glimpses of world history</i> , Penguin India; 1 edition, 2004.	
4	Mahajan V. D., <i>History of Medieval India</i> , S Chand, Eleventh edition, 1991.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=JWJLpLQMIH8">https://www.youtube.com/watch?v=JWJLpLQMIH8</a>	
2	<a href="https://ndi.iitkgp.ac.in/homestudy/humanities">https://ndi.iitkgp.ac.in/homestudy/humanities</a>	
3	<a href="http://www.gutenberg.org/files/6589/6589-h/6589-h.htm">http://www.gutenberg.org/files/6589/6589-h/6589-h.htm</a>	
4	<a href="http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/65">http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_ug.php/65</a>	
Course Designed By: <b>Prof. R.PRAKASH</b> , Assistant Professor in History, Sri Vasavi College, Erode.		

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	M	M	S	M	M	M
CO3	S	S	M	M	M	M	M	S	S
CO3	S	S	S	M	M	S	S	S	S
CO4	S	S	S	S	M	M	S	S	M
CO5	S	S	S	M	S	M	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	TITLE OF THE COURSE			L	T	P	C	
<b>Skill Based Subject-IV</b>	<b>COMPUTER APPLICATION IN HISTORY - II (FULLY PRACTICAL)</b>			-	-	3	3	
<b>Pre-requisite</b>	<b>Basic practical knowledge of Computers</b>			Syllabus		rsion		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Acquire the practical knowledge of Computer Application.</li> <li>2. Learn the application of computer knowledge in Information systems and Multimedia</li> <li>3. Educate the use of computers in searching e-resources of History.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember short cut keys and learn the speedy operation of computers						K1	
2	Understand the utilization of internet.						K2	
3	Apply his computer knowledge in searching educational resources.						K3	
4	Analyze the concept of working of M.S. Office, M.S Word and Excel.						K4	
5	Able to create Web pages.						K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1</b>	<b>MICROSOFT WINDOWS</b>					<b>9 hours</b>		
Introduction to Microsoft Windows.								
<b>Unit:2</b>	<b>M.S.OFFICE AND EXCEL</b>					<b>9 hours</b>		
M. S. Office - M.S. Word - Creating Web pages – Excel.								
<b>Unit:3</b>	<b>MULTIMEDIA</b>					<b>9 hours</b>		
Automation and Information system - Multimedia - E-mail system - Fax.								
<b>Unit:4</b>	<b>INTERNET</b>					<b>8 hours</b>		
Internet - Introduction to Internet - Resources of the Internet Top - Level Domains.								
<b>Unit:5</b>	<b>HISTORY AND COMPUTERS</b>					<b>8 hours</b>		
Use of internet in History using the Web - Search Engines - Reading a Historical Web pages.								
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>		
Expert lectures, online seminars – webinars								
<b>Total Lecture hours</b>						<b>45 hours</b>		

<b>Text Book(s)</b>	
1	Subramanian N., <i>Computers</i> , McGraw Hill Education India Pvt Ltd, 2001.
2	Subramanian C.S., <i>Introduction to Computer and Foundations</i> .
<b>Reference Books</b>	
1	Donalo H. Sanders, <i>Computer Today</i> , McGraw-Hill, 1988.
2	Dr. Subramanian N., <i>Computer Genesis, Programming, Software Applications</i> .
3	Taxali R. K., <i>PC Software made simple IV edition</i> , <u>Tata Mcgraw Hill Publishing Co Ltd</u> , 2015.
4	Rapidex computer courses.
5	Scott D. James, <i>Introduction to the Internet</i> , Prentice Hall, 2000.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://en.wikibooks.org/wiki/Computers_for_Beginners/The_Basics">https://en.wikibooks.org/wiki/Computers_for_Beginners/The_Basics</a>
2	<a href="https://www.youtube.com/watch?v=S-nHYzK-BVg">https://www.youtube.com/watch?v=S-nHYzK-BVg</a>
4	<a href="https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_multimedia.htm">https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_multimedia.htm</a>
Course Designed By: <b>Dr. S. Z. NIAZUDEEN, Assistant Professor of History, Sri Vasavi College, Erode.</b>	

<b>Mapping with Programme Outcomes</b>									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	M	S	M	M
CO3	S	S	M	S	M	S	S	M	S
CO3	S	S	S	S	M	M	S	S	S
CO4	S	S	M	S	M	S	S	S	S
CO5	S	S	M	S	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

**Three hours practicals per week**

**Lab Ms Office – Word**

1. Prepare an Error Free Document
2. Prepare a Document
3. Prepare the Tables
4. Prepare a Document in Newspaper column Layout
5. Perform Mail Merge operation
6. Create a web page
7. Create an Excel Sheet

**Question Paper Pattern for Practical in ESE**

1. Choose any 2 out of 5 questions - 2×25=50 marks

The following Allied subjects are to be offered:

**ALLIED SUBJECTS**

**FIRST YEAR – FIRST SEMESTER / SECOND YEAR - THIRD SEMESTER**

1. Constitutional History of India from 1773 A.D. to 1892 A.D.-I

or

2. Principles of Government

or

3. General Economics - 1

or

4. Principles of Political Science -1

**FIRST YEAR – SECOND SEMESTER / SECOND YEAR - FOURTH SEMESTER**

1. Constitutional History of India from 1892 A.D. to 1950 A.D. -II

or

2. Indian Constitution

or

3. General Economics - II

or

4. Principles of Political Science - II.

**List of Elective subjects (Colleges can choose any one of the subject as electives)**

**Elective - I  
(For Semester-V)**

- A. Archaeology
- B. Human Resource Management
- C. Tourist Centres in India and Abroad

**Elective - II  
(For Semester-VI)**

- A. Introduction to Journalism and Mass Communication
- B. Indian Cultural Heritage
- C. Public Administration

**Elective - III  
(For Semester-VI)**

- A. Tourism in Tamil Nadu
- B. Sociology
- C. Geography

## ALLIED SUBJECT

**(For B.A. Economics / Defence Studies Candidates)**

**HISTORY OF INDIA FROM 1600 AD TO 1857 AD - I**

**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE	L	T	P	C
<b>Allied-</b>	<b>HISTORY OF INDIA FROM 1600 A.D. TO 1857 A.D.</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in History at school level</b>	<b>Syllabus revision</b>			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Provide Knowledge about the Portuguese, Dutch, English, French and Danes who came to India.</li> <li>2. Make students to understand the policy of English East India Company.</li> <li>3. To acquaint the students about the causes for the defeat of the French and the success of the English.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Know the effects of the coming of the Europeans in India.				K1
2	Recall the importance of European settlements in India.				K1
3	Understand the achievements of the Portuguese in India.				K2
4	Describe the causes for the outbreak of Carnatic Wars.				K4
5	Recognize the magnificent Governor generals.				K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>COMING OF THE EUROPEANS</b>	<b>18 hours</b>			
Coming of the Europeans: Portuguese - French East India Company - English East India Company.					
<b>Unit:2</b>	<b>ANGLO – FRENCH RIVALRY</b>	<b>18 hours</b>			
Anglo - French Rivalry: Carnatic Wars - Establishment of British power in Bengal - Battle of Plassey-1757 - Battle of Buxar-1764.					
<b>Unit:3</b>	<b>GOVERNOR GENERALS</b>	<b>18 hours</b>			
Lord Warren Hastings - Lord Cornwallis - Lord Wellesley - Lord William Bentinck.					
<b>Unit:4</b>	<b>REVOLT OF 1857</b>	<b>17 hours</b>			
Dalhousie - Doctrine of Lapse - Revolt of 1857 - Queen's Proclamation.					

<b>Unit:5</b>	<b>CONSTITUTIONAL DEVELOPMENT</b>	<b>17 hours</b>
Constitutional Development: Regulating Act- 1773 - Pitt's India Act- 1784, Charter Act of 1813, Charter Act of 1833 and 1853.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Ramalingam T.S., <i>History of Modern India 1707 to present day</i> , TSR Publications, Madurai, 1983.	
2	William Andrew Pettigrew, Mahesh Gopalan, <i>The East India Company, 1600A.D-1857A.D: Essays on Anglo-Indian Connection</i> , Routledge Taylor & Francis Group, 2017.	
<b>Reference Books</b>		
1	Bipin Chandra, <i>Modern India</i> , Orient Black Swan, 2018.	
2	Choudhary. B. P, <i>History of India</i> , Abhijeet Publication, New Delhi, 2012.	
5	Grover, B.L.A <i>New Look on Modern Indian History</i> , reprint, S. Chand & Co, 1998.	
4	Mahajan V.D., <i>Modern India</i> , S. Chand & Company Ltd, New Delhi, 2012.	
5	Majumdar. R.C & <u>Ray Chaudhuri</u> H.C, <i>An Advanced History of India</i> , Macmillan Publishers, New Delhi, 1978.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Company_rule_in_India">https://en.wikipedia.org/wiki/Company_rule_in_India</a>	
2	<a href="https://en.wikipedia.org/wiki/Carnatic_Wars">https://en.wikipedia.org/wiki/Carnatic_Wars</a>	
3	<a href="https://en.wikipedia.org/wiki/List_of_governors-general_of_India">https://en.wikipedia.org/wiki/List_of_governors-general_of_India</a>	
4	<a href="https://www.youtube.com/watch?v=ataW-bloIEY">https://www.youtube.com/watch?v=ataW-bloIEY</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Assistant Prof. of History, Sri Vasavi College, Erode		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	M	S	M	S	M	M	S
<b>CO3</b>	S	S	S	S	S	M	S	M	S
<b>CO3</b>	S	S	S	S	S	M	S	M	S
<b>CO4</b>	S	S	S	S	S	S	M	S	S
<b>CO5</b>	S	S	M	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

**BHARATHIAR UNIVERSITY: COIMBATORE**  
**ALLIED SUBJECT**  
**(For B.A. Economics / Defence Studies Candidates)**  
**HISTORY OF INDIA 1858 A.D. TO 1964 A.D. - II**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE			L	T	P	C
Allied-	HISTORY OF INDIA FROM 1858 A.D. TO 1964 A.D.-II			6	-	-	4
Pre-requisite	Basic knowledge in History at school level			Syllabus revision			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Study the history of British India under Viceroyalties.</li> <li>2. Impart the Freedom struggles of great leaders.</li> <li>3. Realize the importance of Indian Independence from British.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recall the role of Freedom Fighters in the freedom movement.						K1
2	Understand the Gandhian Principles which paved the way to freedom in India.						K2
3	Identify Tamil Nadu as a pioneer in the freedom movement.						K3
4	Analyze the working of social movements to reform the society.						K4
5	Estimate the role of Nehru and Kamaraj as the Makers of the Modern India.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>VICEROYS</b>					<b>18 hours</b>	
Administration of Lord Canning - Lord Lytton - Lord Ripon - Lord Curzon							
<b>Unit:2</b>	<b>FREEDOM STRUGGLE</b>					<b>18 hours</b>	
Foundation of Indian National Congress - Moderates - Extremists - Home Rule Movement.							
<b>Unit:3</b>	<b>GANDHIAN ERA</b>					<b>18 hours</b>	
Non Co-operation movement - Civil Disobedience Movement - Quit India Movement - Subash Chandra Bose and INA.							
<b>Unit:4</b>	<b>FREEDOM FIGHTERS OF TAMIL NADU</b>					<b>17 hours</b>	
VOC - Rajaji - Subramania Siva - E. V. Ramasamy – Social Reform movements.							

<b>Unit:5</b>	<b>INDIA SINCE INDEPENDENCE</b>	<b>17 hours</b>
Nehru Era - Integration of Indian States, Tamil Nadu under Kamaraj's Chief Ministership.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Agarwal R.C, <i>Constitutional History of India and National Movement</i> , S. S. Chand & Carnet, New Delhi, 1986. Ed-I	
2	Mahajan V.D, <i>History of National Movement in India</i> , S. S. Chand & Carnet, New Delhi, 1985, Ed-III	
<b>Reference Books</b>		
1	Krishnamurthy B., <i>History of Tamil Nadu</i> , Palayankottai.	
2	Joshi D.L. and Gholkar S.V., <i>History of Modern India, 1800 AD to 1964 AD</i> , S. Chand & Co. Ltd., 1980.	
3	Venkatesan G., <i>History of Freedom Struggle in India</i> , VC Publications, Rajapalayam, 2018.	
4	Majundar R.C., <i>Freedom Movement in India</i> , Bharathiya Vidhya Bhavan Series, Bombay, South Asia Books, 1988.	
5	Sathianathaier, <i>History of India Vol.III</i> , S. Viswanathan, Madras, 1969,	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Indian_independence_movement">https://en.wikipedia.org/wiki/Indian_independence_movement</a>	
2	<a href="https://www.slideshare.net/yashwanth6966/mahatma-gandhi-54366079">https://www.slideshare.net/yashwanth6966/mahatma-gandhi-54366079</a>	
3	<a href="https://en.wikipedia.org/wiki/Indian_independence_movement_in_Tamil_Nadu">https://en.wikipedia.org/wiki/Indian_independence_movement_in_Tamil_Nadu</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Assistant Prof. of History, Sri Vasavi College, Erode		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	M	S	M	S	M
<b>CO3</b>	S	S	M	S	S	M	M	S	M
<b>CO3</b>	S	S	S	M	M	S	S	M	S
<b>CO4</b>	S	S	M	S	M	M	S	S	M
<b>CO5</b>	S	S	S	M	S	M	S	M	S

\*S-Strong; M-Medium; L-Low



**BHARATHIAR UNIVERSITY : COIMBATORE**

**ALLIED SUBJECT**

**(Allied subject for History / Economics/ Defence Studies major subjects)**

**PRINCIPLES OF POLITICAL SCIENCE - I**

**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE			L	T	P	C
Allied	PRINCIPLES OF POLITICAL SCIENCE – I			6	-	-	4
Pre-requisite	Basic knowledge in Social Science			Syllabus revision			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Deal with basic concepts and ideas of Political Science.</li> <li>2. Teach the elements and theories of states.</li> <li>3. Make the students to understand that political groups form the government.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the theories and principles of Political science.						K2
2	Analyze the theory of origin and functions of the states.						K4
3	Know the Power theory of Sovereignty.						K1
4	Evaluate the powers and function of states.						K5
5	Create interest in participating in the elections.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>PRINCIPLES OF POLITICAL SCIENCE</b>			<b>15 hours</b>			
Meaning, Nature and Scope of Political Science, Methodology of Social Sciences.							
<b>Unit:2</b>	<b>ELEMENTS &amp; FUNCTIONS OF THE STATE</b>			<b>15 hours</b>			
State – Definition; Characteristics, Elements of the state; Association and Community; Functions of the State.							
<b>Unit:3</b>	<b>THEORIES OF STATE</b>			<b>15 hours</b>			
Theories of Origin of the state - Social Contract Theory; Force Theory; Evolutionary theory.							
<b>Unit:4</b>	<b>THEORIES OF SOVEREIGNTY</b>			<b>14 hours</b>			
Sovereignty; Kinds of Sovereignty; Power Theory of Sovereignty. Powers and Authority- Limits of State Authority.							

<b>Unit:5</b>	<b>POLITICAL GROUPS</b>	<b>14 hours</b>
Groups of Political obligation - Various theories.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	<a href="#">Kapur A.C.</a> , <i>Principles of Political Science</i> , S Chand & Company, 1987.	
2	Ruphael D. D, <i>Problems of Political Philosophy</i> , Chapters 1, 2, 3 and 4, Palgrave Pub Humanities Press, 1970.	
<b>Reference Books</b>		
1	Gilchrist R. N., <i>Principles of Political Science</i> , Longmans, Green And Co, 1921.	
2	Johari J. C., <i>Principles of Modern Political Science</i> , Sterling Publication, 1989.	
3	Mahajan V. D., <i>Principles of Political Science</i> , S. Chand & Company, 1970.	
4	Pickles D M, <i>An Introduction to Politics</i> , Chapters 1, 2, 3 and 4, Methuen young books, 1964.	
5	<a href="#">Urmila Sharma</a> and <a href="#">S.K. Sharma</a> , <i>Principles and Theory in Political Science</i> , Atlantic Publishers & Dist, 2000.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.politicalsciencenotes.com/political-science/political-science-definition-theory-nature-and-scope/711">https://www.politicalsciencenotes.com/political-science/political-science-definition-theory-nature-and-scope/711</a>	
2	<a href="https://www.politicalsciencenotes.com/essay/state/theories-on-the-origin-of-state-essay-theories-political-science/1513">https://www.politicalsciencenotes.com/essay/state/theories-on-the-origin-of-state-essay-theories-political-science/1513</a>	
3	<a href="https://iep.utm.edu/poli-obl/">https://iep.utm.edu/poli-obl/</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	S	S	S	M	S	M
<b>CO3</b>	S	S	M	S	S	M	S	M	M
<b>CO3</b>	S	S	M	S	M	M	M	S	M
<b>CO4</b>	S	S	S	S	M	S	S	M	S
<b>CO5</b>	S	S	M	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

**ALLIED SUBJECT**  
**(For B.A. History/ History and Tourism)**  
**PRINCIPLES OF POLITICAL SCIENCE - II**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE			L	T	P	C
Allied	PRINCIPLES OF POLITICAL SCIENCE – II			6	-	-	4
Pre-requisite	Basic knowledge in Political Science			Syllabus			
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Teach the theories of fundamental rights and duties.</li> <li>2. Make the students to know the concept of Liberty.</li> <li>3. Make the students to acquire knowledge of Right to Justice.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Gain knowledge on Theories of Fundamental Rights and Duties.						K1
2	Understand to live according to the constitution.						K2
3	Know the main concepts of Equality and how people should be equally treated.						K3
4	Analyze that Democratic importance in the forming of Government.						K4
5	Create new ideas on International democracy.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>THEORIES OF FUNDAMENTAL RIGHTS AND DUTIES</b>					<b>15 hours</b>	
Rights - Theories of Rights - Fundamental and Constitutional Rights; Rights and Duties.							
<b>Unit:2</b>	<b>RIGHT TO LIBERTY</b>					<b>15 hours</b>	
Liberty - Meaning - Kinds - Concepts - Liberty and Law, Liberty and Authority.							
<b>Unit:3</b>	<b>RIGHT TO EQUALITY</b>					<b>15 hours</b>	
Equality - Kinds - Concepts - Liberty and Equality; Marxist View on Liberty and Equality. Justice and Equality.							
<b>Unit:4</b>	<b>RIGHT TO JUSTICE</b>					<b>14 hours</b>	
Justice - Meaning - Nature - Kinds - Equality and utility Morality - Law and Morality.							

<b>Unit:5</b>	<b>DEMOCRATIC GOVERNMENT</b>	<b>14 hours</b>
Democracy, Direct and Indirect Democratic Heads - Democratic Government - Democracy in International Society.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	<a href="#">Kapur A.C.</a> , <i>Principles of Political Science</i> , S Chand & Company, 1987.	
2	Pickles D. M, <i>An Introduction to Politics</i> , Chapters 1, 2, 3 and 4, Methuen young books, 1964.	
<b>Reference Books</b>		
1	Agarwal R. C., <i>Political Theory</i> , S. Chand & Company, 2018.	
2	Gilchrist R. N., <i>Principles of Political Science</i> , Longmans, Green And Co, 1921.	
3	Roy & Singh, <i>Indian Political System</i> , Pearson, India, 2012.	
4	Ruphael D. D, <i>Problems of Political Philosophy</i> , Chapters 1, 2, 3 and 4, Palgrave Pub Humanities Press, 1970.	
5	<a href="#">Urmila Sharma</a> and <a href="#">Sharma S.K.</a> , <i>Principles and Theory in Political Science</i> , Atlantic Publishers & Dist, 2000.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Fundamental_rights_in_India">https://en.wikipedia.org/wiki/Fundamental_rights_in_India</a>	
2	<a href="http://www.legalservicesindia.com/article/1688/Right-To-Equality--A-Fundamental-Right.html">http://www.legalservicesindia.com/article/1688/Right-To-Equality--A-Fundamental-Right.html</a>	
3	<a href="https://en.wikipedia.org/wiki/Democracy">https://en.wikipedia.org/wiki/Democracy</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

Mapping with Programme Outcomes									
Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	S	M	M	S	M	M
CO3	S	S	S	S	M	S	M	S	S
CO3	S	S	S	S	M	S	M	S	M
CO4	S	S	S	S	S	S	S	S	S
CO5	S	M	S	S	M	M	S	M	S

\*S-Strong; M-Medium; L-Low

**ALLIED SUBJECT**  
**For B.A. HISTORY**  
**CONSTITUTIONAL HISTORY OF INDIA**  
**FROM 1773 A.D. TO 1892 A.D. - I**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE	L	T	P	C
Allied -	CONSTITUTIONAL HISTORY OF INDIA FROM 1773 A.D. TO 1892 A.D. – 1	6	-	-	4
Pre-requisite	Basic knowledge of History at school level.	Syllabus rsion			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. Teach the Constitutional history from the enactment of Regulating Act to the framing of Indian Constitution. 2. Know the fundamental concepts of constitution and basis of the evolution of Indian Constitution.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the provisions of Charter Acts.				K2
2	Analyze the Government of India Acts passed by the British government.				K4
3	Learns about the historical evolution of the Indian Constitution.				K3
4	Remember the Queen’s Proclamation guaranteed to the Indians.				K1
5	Know the Indian councils as the law making bodies.				K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>REGULATING ACT</b>	<b>15 hours</b>			
The circumstance leading to the passing of the Regulating Act of 1773 – Merits and defects - Pitt’s India Act of 1784 - merits and defects.					
<b>Unit:2</b>	<b>CHARTER ACTS</b>	<b>15 hours</b>			
Charter Act of 1793 - Charter Act of 1813 and its significance - Parliamentary legislations between 1813 and 1833.					
<b>Unit:3</b>	<b>ORIGIN OF LEGISLATIVE ASSEMBLY</b>	<b>15 hours</b>			
Charter Act of 1833 - Law making and Law commission - Charter Act of 1853 and the emergence of a separate Law making body.					

<b>Unit:4</b>	<b>QUEEN'S PROCLAMATION</b>	<b>14 hours</b>
The Queen's Proclamation and the Government of India Act of 1858 - Home Government - Government of India and the Provinces.		
<b>Unit:5</b>	<b>COUNCIL ACTS</b>	<b>14 hours</b>
Indian Councils Acts of 1861 and 1892 - their significance - Nature of Law making bodies.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Aggarwal R.C, <i>Nationalist Movement &amp; Constitutional Development of India</i> , S Chand & Company, 2005.	
2	Chabra G.S, <i>Constitutional History of India</i> , Parkash Bros., 1964.	
3	Sethi & Mahajan, <i>Constitutional History of India</i> , Delhi, 1960.	
<b>Reference Books</b>		
1	Chabra G.S, <i>Advanced Study in the History of Modern India (3 Vols.)</i> , Lotus Press, 2004.	
2	Gupta D, <i>Indian National Movement and Constitutional Development</i> , Stosius Inc/Advent Books Division, 1983.	
3	Keith A.B, <i>The Constitutional History of India</i> , Pacific Publication (2010).	
4	Purnian K. V, <i>The Constitutional History of India</i> .	
5	Sapre G.S, <i>The Growth of Indian Constitution &amp; Administration</i> , Gale, Making of Modern Law, 2014.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Regulating_Act_of_1773">https://en.wikipedia.org/wiki/Regulating_Act_of_1773</a>	
2	<a href="https://en.wikipedia.org/wiki/Charter_Act_of_1813">https://en.wikipedia.org/wiki/Charter_Act_of_1813</a>	
3	<a href="https://abhipedia.abhimanu.com/Article/IAS/MTA4NzUy/Governemnt-of-India-and-Council-Acts--1858-1919--Indian-Polity-IAS">https://abhipedia.abhimanu.com/Article/IAS/MTA4NzUy/Governemnt-of-India-and-Council-Acts--1858-1919--Indian-Polity-IAS</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Asst. Prof. of History, Sri Vasavi College, Erode.		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	S	M	M	S	S	S
<b>CO3</b>	S	S	S	M	M	S	M	S	M
<b>CO3</b>	S	S	S	S	M	S	S	M	S
<b>CO4</b>	S	S	S	M	S	M	S	S	M
<b>CO5</b>	S	S	S	M	S	S	M	M	S

\*S-Strong; M-Medium; L-Low

**ALLIED SUBJECT**  
**For B.A. HISTORY**

**CONSTITUTIONAL HISTORY OF INDIA FROM 1892 A.D. TO 1950 A.D. - II**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE	L	T	P	C
Allied -	CONSTITUTIONAL HISTORY OF INDIA FROM 1892 A.D. TO 1950 A.D. – II	6	-	-	4
Pre-requisite	Basic knowledge in history	Syllabus Version			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Study the various changes and developments of Constitutional History of India.</li> <li>2. Highlight the significance of Government of India Act of 1935</li> <li>3. Learn the constitutional legacy of the British rule in India</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Describe the constitutional development of India since 1892.				K1
2	Understand the changes in home government, Bicameral legislature and provincial autonomy.				K2
3	Acquire the knowledge of Government of India act of 1935 as the Federal system of Government.				K3
4	Analyze the proposals of Mount Patten and the impact of partition of India.				K4
5	Recognize the importance of Republican constitution of India				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>MINTO - MORLEY REFORMS ACT</b>	<b>15 hours</b>			
Minto - Morley Reforms of 1909 - merits and demerits of the reforms act- Separate electorate for the Muslims.					
<b>Unit:2</b>	<b>BICAMERAL LEGISLATURE</b>	<b>15 hours</b>			
The World War I and its impact on constitutional development - 1917 - August Declaration – The Govt. of India Act of 1919 - Changes in Home Govt. Bicameral Legislature - Provincial Government and Dyarchy.					
<b>Unit:3</b>	<b>WORKING OF DYARCHY</b>	<b>15 hours</b>			
Dyarchy in operation - Indian reaction - Simon Commission - Round Table Conferences.					

<b>Unit:4</b>	<b>FEDERAL GOVERNMENT</b>	<b>14 hours</b>
Government of India Act of 1935 - The Federal Government - Provincial Autonomy - Cripps Mission - Cabinet Mission Plan - Mountbatten Plan.		
<b>Unit:5</b>	<b>REPUBLIC INDIA</b>	<b>14 hours</b>
Indian Independence Act of 1947 - Republican Constitution of India.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Aggarwal R.C, <i>Nationalist Movement &amp; Constitutional Development of India</i> , S Chand & Company, 2005.	
2	Chabra G.S, <i>Constitutional History of India</i> , Parkash Bros., 1964.	
3	Sethi & Mahajan, <i>Constitutional History of India</i> , Delhi, 1960.	
<b>Reference Books</b>		
1	Chabra G.S, <i>Advanced Study in the History of Modern India (3 Vols.)</i> , Lotus Press, 2004.	
2	Gupta D, <i>Indian National Movement and Constitutional Development</i> , Stosius Inc/Advent Books Division, 1983.	
3	Keith A.B, <i>The Constitutional History of India</i> , Pacific Publication (2010).	
4	Purnian K. V, <i>The Constitutional History of India</i>	
5	Sapre G.S, <i>The Growth of Indian Constitution &amp; Administration</i> , Gale, Making of Modern Law, 2014.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://byjus.com/free-ias-prep/ncert-notes-morley-minto-reforms/">https://byjus.com/free-ias-prep/ncert-notes-morley-minto-reforms/</a>	
2	<a href="https://www.youtube.com/watch?v=MTo-10VRe80">https://www.youtube.com/watch?v=MTo-10VRe80</a>	
3	<a href="https://en.wikipedia.org/wiki/Preamble_to_the_Constitution_of_India">https://en.wikipedia.org/wiki/Preamble_to_the_Constitution_of_India</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Asst. Prof. of History, Sri Vasavi College, Erode.		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	M	S	M	S	M	M	S	S
<b>CO3</b>	S	M	M	S	S	S	S	M	S
<b>CO3</b>	S	M	S	S	S	S	S	M	S
<b>CO4</b>	S	S	M	S	S	M	M	S	M
<b>CO5</b>	M	S	S	S	S	S	M	M	M

\*S-Strong; M-Medium; L-Low



**ALLIED SUBJECT**  
**(For B.A. History/ History and Tourism)**  
**PRINCIPLES OF GOVERNMENT**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE	L	T	P	C
Allied	PRINCIPLES OF GOVERNMENT	6	-	-	4
Pre-requisite	Basic knowledge in history.	Syllabus version			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Impart the students to know the theories and principles of government.</li> <li>2. Make the students to understand the framing of law in Legislative assembly.</li> <li>3. Teach the students the Independence of Judiciary.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the meaning and different types of constitution.				K2
2	Gain knowledge about the working of legislature.				K3
3	Know the Indian Judicial System.				K1
4	Realize that all citizens are equal in front of law.				K4
5	Evaluate the working of Indian Constitution.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>DEFINITION OF CONSTITUTION</b>	<b>15 hours</b>			
Meaning of constitution - Written and Unwritten constitution - Rigid and Flexible constitution - Unitary and Federal forms of Government.					
<b>Unit:2</b>	<b>COMPOSITION OF LEGISLATURE</b>	<b>15 hours</b>			
Legislature: Unicameral and Bicameral Legislature - Merits and Demerits - Composition of legislature (lower and upper house) - powers and functions of Legislature.					
<b>Unit:3</b>	<b>PARLIAMENTARY EXECUTIVE</b>	<b>15 hours</b>			
Kinds of Executive - Parliamentary, Presidential and Plural Executive - Theory of <u>Separation</u> of powers.					
<b>Unit:4</b>	<b>INDEPENDENT JUDICIARY</b>	<b>14 hours</b>			

Judiciary: Organization of Judiciary - Functions of Judiciary - Independence of Judiciary - Judicial Review - Rule of Law - Administrative Law.		
<b>Unit:5</b>	<b>RIGHTS AND DUTIES OF CITIZEN</b>	<b>14 hours</b>
Political Parties - Pressure groups - Electoral system - Anti-defection - Public Opinion - Democracy - Rights and duties of citizens - Women in Electoral process.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Nathaniel Chipman, <i>Principles of Government, A Treatise on Free Institutions Including the Constitution of the United States</i> , The Law book Exchange, Ltd., 2011.	
2	<a href="#">Warren L. McFerran</a> , <i>The Principles of Constitutional Government: Political Sovereignty</i> , Pelican Publication, 2009.	
<b>Reference Books</b>		
1	Appadurai A., <i>Substance of Politics</i> , Oxford University Press, 2000.	
2	Charles F. Bahmueller, <i>Elements of Democracy: The Fundamental Principles, Concepts, Social Foundations, and Processes of Democracy</i> , Center for Civic Education, 2007.	
3	Gilchrist R. N., <i>Principles of Political Science</i> , Orient Black Swan (1975).	
4	<a href="#">Nathaniel Chipman</a> , <i>Sketches of the Principles of Government</i> , Rutland [Vt.], 1793.	
5	Strong C. F., <i>Modern Constitutions</i> , Sidgwick & Jackson Ltd, 1972.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Constitution">https://en.wikipedia.org/wiki/Constitution</a>	
2	<a href="https://en.wikipedia.org/wiki/Legislature">https://en.wikipedia.org/wiki/Legislature</a>	
3	<a href="https://en.wikipedia.org/wiki/Fundamental_Rights,_Directive_Principles_and_Fundamental_Duties_of_India">https://en.wikipedia.org/wiki/Fundamental_Rights,_Directive_Principles_and_Fundamental_Duties_of_India</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	S	S	S	M	S
<b>CO3</b>	S	M	S	M	S	M	S	S	S
<b>CO3</b>	M	S	S	S	S	M	M	M	S
<b>CO4</b>	M	M	S	S	S	S	S	S	S
<b>CO5</b>	M	S	M	S	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

**ALLIED SUBJECT**  
**(For B.A. History/ History and Tourism)**  
**INDIAN CONSTITUTION.**  
**WITH EFFECT FROM 2007-2008 and onwards**

Course code	TITLE OF THE COURSE	L	T	P	C
Allied	INDIAN CONSTITUTION	6	-	-	4
Pre-requisite	Basic knowledge in Indian Constitution	Syllabus		revision	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. Make the students to understand the historical background of the Indian Constitution. 2. Teach the powers and functions of Executive, Legislative, Judiciary and Autonomous bodies of the constitution.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Understand the evolution of Indian Constitution.				K2
2	Get interest on Politics, voting right, secularism, equality and citizenship.				K5
3	Familiarizes the significance of fundamental rights and duties.				K1
4	Highlight the powers of state executive.				K4
5	Acquire knowledge about the functions of Election Commission.				K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>FORMATION OF INDIAN CONSTITUTION</b>	<b>15 hours</b>			
Formation of Constituent Assembly - Drafting Committee - Framing of the Constitution - Salient Features.					
<b>Unit:2</b>	<b>RIGHTS AND DUTIES</b>	<b>15 hours</b>			
Preamble - Fundamental Rights and Duties - Directive Principles of State Policy - Mode of Amendment.					
<b>Unit:3</b>	<b>UNION EXECUTIVE</b>	<b>15 hours</b>			
Union Executive - President - Vice President - Union Legislature: Lok Sabha - Rajya Sabha - Prime Minister - Cabinet Minister.					
<b>Unit:4</b>	<b>STATE EXECUTIVE</b>	<b>14 hours</b>			
State Executive - Governor - Chief Ministers - Council of Ministers - Judiciary - Supreme Court - High Court.					

<b>Unit:5</b>	<b>ELECTION COMMISSION OF INDIA</b>	<b>14 hours</b>
Election Commission of India - State Election Commission - Political Parties: National and Regional - Pressure Groups - Union and State Service Commissions.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Durga Das Basu, <i>Commentary on the Constitution of India</i> , Lexi Nexis, 2017.	
2	Durga Das Basu, <i>Introduction to the Constitution of India</i> , Lexis Nexis, 2011.	
<b>Reference Books</b>		
1	Durga Das Ragul Roy, <i>Introduction to the Constitution of India</i> , Lexis Nexis, 2013.	
2	Huns Raj Khanna, <i>Making of India's Constitution</i> , Eastern Book Company, 2008.	
3	Jayabalan, <i>Constitutional History of India</i> , Atlantic Publishers & Distributors (P) Limited, 1998.	
4	Pratap Kumar Ghosh, <i>The Constitution of India: How it has been framed</i> , World Press, 1966.	
5	Pylee M.V., <i>Constitutional Government in India</i> , S Chand & Company, 2004.	
6	Pylee M.V., <i>Indian's Constitution</i> , S Chand & Company, 2016.	
7	Thirumalai .P.S., <i>Constitutional Law of India</i>	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Constitution_of_India">https://en.wikipedia.org/wiki/Constitution_of_India</a>	
2	<a href="https://www.yourarticlelibrary.com/political-science/executive-definition-functions-and-types-of-executive/40360">https://www.yourarticlelibrary.com/political-science/executive-definition-functions-and-types-of-executive/40360</a>	
3	<a href="https://en.wikipedia.org/wiki/Election_Commission_of_India">https://en.wikipedia.org/wiki/Election_Commission_of_India</a>	
Course Designed By: <b>Prof. L. AMSA, Asst. Prof. of History, Chikkiah Naicker College, Erode</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	M	S	S	M	S
<b>CO3</b>	S	M	S	M	M	S	M	M	S
<b>CO3</b>	S	S	S	S	M	M	M	S	M
<b>CO4</b>	S	M	S	S	M	M	S	S	M
<b>CO5</b>	S	S	M	S	M	S	S	M	S

\*S-Strong; M-Medium; L-Low

**ELECTIVE PAPERS**  
**SEMESTER V**

**ELECTIVE I-A**

Course code	TITLE OF THE COURSE			L	T	P	C
Elective I-A	ARCHAEOLOGY			4	-	-	4
Pre-requisite	Basic knowledge of Historical sources			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Learn the aspects of Archaeological field works.</li> <li>2. Teach the students about the Ancient Indian cultures and excavation techniques.</li> <li>3. Study the important Archaeological Sites.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the importance of Archaeology.						K2
2	Apply the method of Exploration and Excavation in their Research.						K3
3	Analyze the Archaeological Artefacts.						K4
4	Remember and Integrate the knowledge of archaeology in studying history.						K1
5	Create more Interest on Archaeological sites of Tamil Nadu.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>SCOPE OF ARCHAEOLOGY</b>					<b>12 hours</b>	
Meaning and Scope of Archaeology - Archaeology as a source material - Kinds of Archaeology - Methods of Exploration and Excavation - Kinds of Excavations - Dating Methods.							
<b>Unit:2</b>	<b>PRE-HISTORIC CULTURE</b>					<b>12 hours</b>	
Pre-Historic Culture - Stone Age cultures - Paleolithic - Microlithic, Neolithic and Megalithic cultures of India - Pottery types and their importance.							
<b>Unit:3</b>	<b>HARAPPAN CULTURE</b>					<b>12 hours</b>	
Harappan Culture - Chalcolithic culture of Western and Central India and the Deccan - Early Iron Age cultures - Painted Grey Ware and Northern Black polished ware culture - Megalithic - Black and Redware culture of South India.							
<b>Unit:4</b>	<b>ARCHAEOLOGICAL SURVEY OF INDIA</b>					<b>11 hours</b>	
Archaeological Survey of India - Alexander Cunningham - Sir John Marshal - Sir Martimer Wheeler - Archaeological sites in Tamil Nadu - Arikkalamedu - Adichanallur - Kodumanal - Keezhadi.							

<b>Unit:5</b>	<b>INSCRIPTIONS</b>	<b>11 hours</b>
Paleography - Brahmi Script and Vattezhuthu - Epigraphy - its importance - Language and types of inscriptions with special reference to South India - Numismatics - its illustration - Coins of the Guptas, Cholas, Pandyas and Vijayanagar.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Childe. G, <i>Introduction to Archaeology</i> , Frederick Miller, 1956.	
2	Raman K. V., <i>Principles and Methods of Archaeology</i> , Parthajan Publications, 1986.	
3	Sankalia. H. D, <i>Indian Archaeology Today</i> , Asia Publishing House, 1962.	
<b>Reference Books</b>		
1	Brown C., <i>Indian Coins</i> , Bharatiya Kala Prakashan, 2009.	
2	Dilip K. Chakrabarti, <i>History of Indian Archaeology: The Beginning to 1947</i> , Munshiram Manoharlal Publishers, 1995.	
3	Mahalingam T.V, <i>Early south Indian Paleography</i> , University of Madras, 1967.	
4	Ramaswamy Venkatraman, <i>Indian Archaeology: A Survey</i> , Ennes Publications, 1985.	
5	Subramanian T.N, <i>Pandia Tamil Eluthukkal</i> (Tamil)	
6	Wheeler M, <i>Early India and Pakistan</i> , Thames & Hudson, 1968.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.tnarch.gov.in">www.tnarch.gov.in</a> >>e-publication	
2	<a href="https://asi.nic.in">https://asi.nic.in</a> >>Central ArchaeologicalLibrary>>E-Publication	
3	Youtube – e-PG Pathshala	
Course Designed By: <b>Dr. R. SANTHANAM, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	S	M	S	S	S	S
<b>CO3</b>	S	S	S	S	M	S	M	S	S
<b>CO3</b>	S	S	S	S	M	M	S	M	M
<b>CO4</b>	S	S	S	S	M	S	S	S	M
<b>CO5</b>	S	S	S	S	M	M	M	M	S

\*S-Strong; M-Medium; L-Low

**SEMESTER -V**  
**ELECTIVE I-B**

Course code	TITLE OF THE COURSE	L	T	P	C
Elective I-B	<b>HUMAN RESOURCE MANAGEMENT</b>	4	-	-	4
Pre-requisite	Basic knowledge in Human Resource Management.	Syllabus		Version	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. Prescribe the evolution and organization of Human Resource Management. 2. Teach the students to learn the basic principles of human resource management. 3. Make the students to understand the Job analysis and performance in human resource management.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the different types of jobs in government and private sectors.				K1
2	Understand the basic principles of job design.				K2
3	Apply the skill of interview techniques.				K3
4	Analyze his/her ability of performance in career oriented jobs.				K4
5	Evaluate the human relations and nature of human needs.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>ORGANISATION AND JOB DESIGN</b>	<b>121 hours</b>			
Introduction - Definition of Personnel Management - Role of Personnel Manager - Challenges of Modern Personnel Management - Organisation objectives, Organisation structure Job Design - Job enlargement, Job enrichment - Strategic Control - The Personnel Audit.					
<b>Unit:2</b>	<b>JOB ANALYSIS &amp; HUMAN RESOURCES REQUIREMENTS</b>	<b>11 hours</b>			
Job Analysis Process - Job description - Role Analysis - Job Specification - Uses of Job Analysis - Information - Human resources planning - Absenteeism - Turn over.					
<b>Unit:3</b>	<b>RECRUITMENT AND THE HIRING PROCEDURES</b>	<b>12 hours</b>			
Internal & External recruitment - Recruitment evaluation - The Hiring Procedures - Types of interviews - Principles of interviewing - Approval of the Supervisor - Physical Examination Introduction / Orientation – Development - Operative Training On the job training, Vestituce Schools, apprenticeship programme special courses - Executive Development, Executive needs & Developmental programs - Decision making skills, Interpersonal skills, Job knowledge, Organization Knowledge, General knowledge - Organization Development					
<b>Unit:4</b>	<b>PERFORMANCE APPRAISAL</b>	<b>12 hours</b>			
Performance Appraisal System - The appraisal programme - Nature of carriers - Careers anchors - Career Development - Programme compensation - Factors affecting compensation - Policy Equity + Compensation - Job Evaluation & Job Evaluation System - Fringe benefits - Principles of					

Employee - Benefit programme - Payments for time not worked - Guaranteed Annual wage - Life Insurance - Medical Services - Recreational Programme - Cafeterias & Housing Legal & Financial – counselling - Educational Tuition.		
<b>Unit:5</b>	<b>NATURE OF HUMAN AND SEPARATION</b>	<b>12 hours</b>
Nature of human - Importance of Human relations - Nature of Human needs Motivations -Theories of Abraham, Mastar, MC Gregar & Hezberz. The Start of Labour union - Nature of Labour union, Types of union - Starting unions - Separation processes -Retirement, Mandatory VS Voluntary Retirement, Retirement Programmes, Lay-off Out-Placement, Discharge		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Gary Dessier, <i>Human Resource Management</i> , 7th ed. Prentice hall of India, Pearson, 2017.	
2	Rao S.P., <i>Human Resource Management- Text and Cases</i> , Excel Books, New Delhi, 2000.	
<b>Reference Books</b>		
1	Rao, AVLN, <i>Management Science</i> , SciTech Publications (India), Pvt. Ltd., Chennai, 2004.	
2	Robert L Mathews and John H. Jackson, <i>Personnel Human Resource Management</i> , Edition 14, Cengage Learning, 2013.	
3	Subramanian C V, <i>Human Resource Management</i> , S. Chand & Co, Ramnagar, New Delhi, 2003.	
4	Venkatapathy and Assissi Menacheri, <i>Industrial Relations and Labour Welfare</i> , Adhitya Publications, Coimbatore, 2001.	
5	<a href="#">Dessler Gary</a> , <i>Fundamentals of Human Resource Management</i> , Pearson Education; Fourth edition, 2017.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Human_resource_management">https://en.wikipedia.org/wiki/Human_resource_management</a>	
2	<a href="https://www.youtube.com/watch?v=c8_avX9miag">https://www.youtube.com/watch?v=c8_avX9miag</a>	
3	<a href="http://www.whatishumanresource.com/human-resource-management">http://www.whatishumanresource.com/human-resource-management</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Asst. Prof. of History, Sri Vasavi College, Erode.		

**Mapping with Programme Outcomes**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	S	S	M	S
CO3	S	S	M	S	M	S	S	M	S
CO3	S	S	M	S	M	M	S	S	S
CO4	S	S	M	S	M	M	S	M	M
CO5	S	S	M	S	M	M	S	S	M

\*S-Strong; M-Medium; L-Low



**SEMESTER -V**  
**ELECTIVE I-C**

Course code	TITLE OF THE COURSE	L	T	P	C
Elective I-C	<b>TOURIST CENTERS IN INDIA AND ABROAD</b>	4	-	-	4
Pre-requisite	Basic Knowledge in Tourism.	Syllabus		rsion	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. Impart the importance of tourist centres in the world. 2. Educate the students to know the rules and regulations of tourism and travel management. 3. Encourage the students to visit the tourist places in India and abroad.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the important tourist centres in India and abroad.				K1
2	Understand the rules and regulation in tourism management.				K2
3	Apply the Travel documents like Visa, Passport to travel abroad.				K3
4	Analyze the importance of tourist centres around the world.				K4
5	Create the awareness of protecting the tourist places.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>IMPORTANCE OF TOURIST CENTRES</b>	<b>12 hours</b>			
Introduction - Importance of tourist centres - Advantages - Foreign exchange - Travel documents - Visa, Passport, Airport clearance, Currency exchange -Diplomatic relationship - Classifications.					
<b>Unit:2</b>	<b>TOURIST CENTRES IN ASIA</b>	<b>12 hours</b>			
INDIA: Kashmir - Delhi, Agra - Calcutta - Mysore - Goa - Trivandrum - Kanyakumari - Tanjore – Mammallapuram, MALDIVES, PAKISTAN: Lahore – Karachi. BANGALADESH: Dacca. NEPAL. SRILANKA: Colombo - Kandy - Anuradhapura. CHINA: Great wall - Peking - Shanghai. JAPAN: Tokyo. VIETNAM: THAILAND - SINGAPORE - MALAYSIA - INDONESIA – CAMBODIA - AUSTRALIA: Sydney, Canberra, Melbourne. KUWAIT – ARABIA: Mecca - Madhina.					
<b>Unit:3</b>	<b>TOURIST CENTRES IN EUROPE</b>	<b>12 hours</b>			
ENGLAND: London - SCOTLAND – IRELAND- FRANCE: Paris - French Rivera. SPAIN: Barcelona - Madrid. GERMANY: Bonn - Berlin. SWITZERLAND: Zurich – Lausanne - Berne. NETHERLANDS: Amsterdam. ITALY: Rome, Sicily. GREECE: Athens.					
<b>Unit:4</b>	<b>TOURIST CENTRES IN AFRICA, EGYPT</b>	<b>11 hours</b>			

SOUTH AFRICA: Cape Town - Safari – EGYPT: Cairo - Luxor – Alexandria - TANZANIA - MADAGASKAR: Antananarivo.		
<b>Unit:5</b>	<b>TOURIST CENTRES IN AMERICA</b>	<b>11 hours</b>
CANADA: Ottawa - Toronto. USA: New York - Niagara. PANAMA: California - Disneyland. Tourist Centres in ARGENTINA – CUBA - HAVANA - BRAZIL - PERU.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>60 hours</b>
<b>Text Book(s)</b>		
1	David L. Edgell, <i>The formulation of Tourism Policy</i> , Routledge, 2013.	
2	Dennis: L. Foster, <i>First class: An Introduction to Travel and Tourism</i> , McGraw-Hill Inc., US, 1990.	
<b>Reference Books</b>		
1	Anurag Mathur, <a href="#">Prof. Agam Prasad Mathur</a> and 8 more, <i>Indian Tourism: Tourist Places of India</i> , Kindle Edition, Self Publisher, 2016.	
2	Brent Ritchie T.R. & Charles. R. Goeldrer, <i>Travel, Tourism and Hospitality Research</i> , Wiley, 2nd Edition, 1994.	
3	Krishnamoorthy. V, <i>Tourism Development</i> .	
4	Md. Abu Barkat Ali, <i>Travel and Tourism Management</i> , Prentice Hall India Learning Pvt. Ltd., 2015	
5	<u>Sophia Simone</u> , <i>Incredible India: A Beautiful Picture</i> , Asia-Pacific Holdings Private Limited.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://wikitravel.org/en/Asia">https://wikitravel.org/en/Asia</a>	
2	<a href="https://wikitravel.org/en/India">https://wikitravel.org/en/India</a>	
3	<a href="https://www.vueindiatours.com/blog/top-15-most-visited-places-in-india-by-foreign-tourists/">https://www.vueindiatours.com/blog/top-15-most-visited-places-in-india-by-foreign-tourists/</a>	
4	<a href="https://wikitravel.org/en/Europe">https://wikitravel.org/en/Europe</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	M	M	S	S	M	S
CO3	S	S	S	M	M	S	S	S	S
CO3	S	S	S	M	M	M	S	S	M
CO4	S	S	S	M	M	S	S	M	M
CO5	S	S	S	M	M	S	M	S	S

\*S-Strong; M-Medium; L-Low

## SEMESTER- VI

### ELECTIVE II-A

Course code	TITLE OF THE COURSE	L	T	P	C
Elective II-A	INTRODUCTION TO JOURNALISM AND MASS COMMUNICATION	5	-	-	4
Pre-requisite	Should possess basic knowledge about news and day to day events	Syllabus		rsion	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Describe the role of journalism and mass media in Freedom Struggle.</li> <li>2. Educate the students about the structure and functions of print media organization</li> <li>3. Develop students as a responsible media person</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the historical significance of journalism in Indian freedom struggle.				K1
2	Understand the importance, functions & scope of communication and media.				K2
3	Apply their knowledge in News writing; News editing and choose careers in Journalism and Mass media.				K3
4	Analyze more about newspapers, editing pages.				K4
5	Create more interest on various national and international news agencies.				K6
K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create					
<b>Unit:1</b>	<b>INTRODUCTION TO JOURNALISM</b>	<b>15 hours</b>			
Nature and definition of Journalism and mass communication - Communication process - SMCR model - Mass Media - History of the press in India- Role of the press in Freedom Movement.					
<b>Unit:2</b>	<b>LEADING NEWS PAPERS AND TAMIL JOURNALISM</b>	<b>15 hours</b>			
Leading Newspapers of India (Linguistic and English), Brief History of Tamil Journalism - Freedom of the Press.					
<b>Unit:3</b>	<b>CAREER OPPORTUNITIES</b>	<b>15 hours</b>			
Career aspects of Journalism - Structure of a Newspaper organization - Characteristics of a Journalist.					
<b>Unit:4</b>	<b>JOURNALISTIC COMPONENTS</b>	<b>14 hours</b>			
Principles of Reporting - Definitions, Components and sources of news- Writing the news - Types of Lead, body- Principles of Editing - Editing techniques- Writing Headlines and types of Headlines					

<b>Unit:5</b>	<b>NEWS AGENCIES</b>	<b>14 hours</b>
Law of Defamation - News Agencies (Indian and International) - Recent trends in Indian press.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Rayadu C. S., <i>Communication</i> , Himalaya Publication, 2015.	
2	Mehta D S, <i>Mass Communication Journalism in India</i> , Allied Publishers, 1979.	
<b>Reference Books</b>		
1	Ahuja B. N., <i>Theory and practice of Journalism</i> , New Delhi, 2007.	
2	Basu D D, <i>Law of the Press</i> , Lexis Nexis, Fifth edition, 2010.	
3	Journalism and Mass Communications - we series Tata McGraw Hill.	
4	Keval J. Kumar, <i>Mass Communication in India</i> , Jaico Publishing House, 1994.	
5	Parthasarthy and Rangaswami, <i>Journalism in India</i> , Sterling Publishers Pvt. Ltd., New Delhi, 1989.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Freedom_of_expression_in_India">https://en.wikipedia.org/wiki/Freedom_of_expression_in_India</a>	
2	<a href="http://ndl.iitkgp.ac.in/">http://ndl.iitkgp.ac.in/</a>	
3	<a href="https://www.youtube.com/watch?v=YBC0VBAG9SY&amp;t=43s">https://www.youtube.com/watch?v=YBC0VBAG9SY&amp;t=43s</a>	
4	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=24">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=24</a>	
Course Designed By: <b>R.PRAKASH</b> , Assistant professor in History, Sri Vasavi College , Erode		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	S	M	M	S	S	M	M
CO3	S	S	S	M	M	M	S	M	S
CO3	S	M	S	M	M	S	S	S	S
CO4	S	S	M	M	M	M	S	M	M
CO5	S	M	S	M	M	M	S	S	S

\*S-Strong; M-Medium; L-Low

**SEMESTER- VI**  
**ELECTIVE II-B**

Course code	TITLE OF THE COURSE	L	T	P	C
Elective II-B	INDIAN CULTURAL HERITAGE	5	-	-	4
Pre-requisite	A basic knowledge in Indian History	Syllabus revision			
<p>The main objectives of this course are to:</p> <ol style="list-style-type: none"> <li>1. Acquires knowledge about Muslim Invasions and its impact on Indian culture.</li> <li>2. Teach the students to know the Indian cultural revivalism.</li> <li>3. Analyze the role of social reformers in reforming the Indian society.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the present Indian society and culture.				K1
2	Understand the unique of Ancient Indian Values, the Teachings of Social Reformers, the need and development of ethics.				K2
3	Apply to know the salient features of the Indian culture.				K3
4	Analyze the impact of west on Indian culture.				K4
5	Evaluate the role of social reformers in reforming the society.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>MUSLIMS ON INDIAN CULTURE</b>	<b>15 hours</b>			
Muslim invasions, Delhi Sultanate -Society, Religion Literature and Arts under the sultans of Delhi - Muslims impact on Indian culture - Bhakti Movement - Kabir - Guru Nanak, Chaitanya.					
<b>Unit:2</b>	<b>CULTURE UNDER VIJAYANAGAR RULE</b>	<b>15 hours</b>			
Society and culture under Vijayanagar - Nayaks of Madurai – Jinji - Tanjore.					
<b>Unit:3</b>	<b>CULTURE UNDER MOGHAL RULE</b>	<b>15 hours</b>			
Mughals and their impact on Indian culture, Society, Economy, Religion, Literature and Art.					
<b>Unit:4</b>	<b>IMPACT OF WEST ON INDIAN CULTURE</b>	<b>14 hours</b>			
Impact of west on Indian culture. Portuguese. Dutch - French and British - Impact of Christianity on Indian culture.					
<b>Unit:5</b>	<b>SOCIAL REFORM MOVEMENTS</b>	<b>14 hours</b>			

Arya Samaj - Brahma Samaj - Ramakrishna mission - Theosophical Society - Dravidian Rational Movement - Developments in India after the British - Railways - Postal and Telegraphy - Industrial Revolution - emergence of Educational Institutions.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Mallev O., <i>Indian and west</i> , Oxford University Press, 1968.	
2	Relevant chapter in Bharathiya Vidya Bhavan : (History of the Indian People).	
<b>Reference Books</b>		
1	Anurag Mathur, <i>Indian Culture &amp; Heritage: 1</i> , Create space Independent Pub, 2017.	
2	Basham A.L., <i>A Cultural History of India</i> , Oxford Publication, 1997.	
3	<a href="#">Haridas Bhattacharyya</a> , <i>Cultural Heritage of India</i> , Ramakrishna Mission Inst of culture, 2002.	
4	Romila Thapar, <i>Indian Cultures as Heritage: Contemporary Pasts</i> , Aleph Book Company, 2018.	
5	Sathyanathaiyer R., <i>History of India Vols I and II</i> , S. Viswanathan, 1952.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd2_nos19_hs03/preview">https://swayam.gov.in/nd2_nos19_hs03/preview</a>	
2	<a href="https://www.youtube.com/watch?v=NOA9iN9vrU8">https://www.youtube.com/watch?v=NOA9iN9vrU8</a>	
3	<a href="http://www.indiaculture.nic.in/world-heritage">http://www.indiaculture.nic.in/world-heritage</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	S	S	M	M
CO3	S	S	S	S	S	S	S	S	S
CO3	S	S	M	S	M	S	S	S	M
CO4	S	M	S	S	M	S	S	M	S
CO5	S	S	M	S	S	M	S	M	M

\*S-Strong; M-Medium; L-Low

**SEMESTER- VI**  
**ELECTIVE II-C**

Course code	TITLE OF THE COURSE	L	T	P	C
Elective II-C	PUBLIC ADMINISTRATION	5	-	-	4
Pre-requisite	Basic knowledge in Public Administration	Syllabus		rsion	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Make the students to identify the core mechanisms of public administration, including the organization and management of human and financial resources.</li> <li>2. Explain how different environments impact public policy and administration.</li> <li>3. Organize and communicate information clearly to a variety of audiences by means of oral presentation, written documents, reports, etc.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the Public Administrative system and the laws of Administration.				K1
2	Understand of theories, concepts and practices relevant to public administration and its sub- fields.				K2
3	Apply the appropriate skills to be able to administer public programs.				K3
4	Analyze their knowledge and integrity in public service and reflect on ways to incorporate public service.				K4
5	Create proficiency in clear oral and written communication by presenting succinct, well-organized materials.				K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>INTRODUCTION</b>	<b>15 hours</b>			
Measuring scope and significance of Public Administration, Public and Private Administration, Wilson’s vision of Public Administration. Evolution of the discipline and its present status, New Public Administration. Public choice approach and New Public Management perspective, Features of Entrepreneurial Government, Good Government: Concept and application.					
<b>Unit:2</b>	<b>THEORIES OF ADMINISTRATION</b>	<b>15 hours</b>			
Nature and typologies, Scientific Management (Taylor and the Scientific Management Movement), Classical theory (Fayol, Urwilck, Gulick and others), Bureaucratic theory. (Marxist view, Weber’s model and its critique, post-we Brian developments.) Ideas of Mary Parker Follett and (C. L. Barnard) Human Relations School (Elton Mayo and others). Behavioral Approach to Organization Analysis. Participative Management; (McGregor, Likert and others). The Systems Approach Open and closed systems.					
<b>Unit:3</b>	<b>STRUCTURE OF PUBLIC ORGANIZATIONS</b>	<b>15 hours</b>			

Typologies of Political Executive and their functions, Forms of Public organizations: Ministries and Departments: Corporations; Companies, Boards and Commissions; Ad hoc and Advisory bodies - Headquarters and field relationships. Administrative Behavior: Decision making with special reference to Herbert Simon, Theories of Leadership, Communication, Morale, Motivation (Maslow and Hertzberg.)		
<b>Unit:4</b>	<b>ACCOUNTABILITY AND CONTROL</b>	<b>14 hours</b>
Concepts of Accountability and Control; Legislative Executive and Judicial Control over Administration. Citizen and Administration, Role of civil society, people's participation, Right to information. Administrative corruption, machinery for reducers of citizen's grievances. Citizen Charter.		
<b>Unit:5</b>	<b>ADMINISTRATIVE LAW</b>	<b>14 hours</b>
Meaning and significance. Delegated Legislation: Types, Advantages: limitations, Safeguards, Administrative Tribunals limitations and methods of ensuring effectiveness.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Dr. Maheswari A., <i>Public Administration</i> , New Delhi, 1970.	
2	Dr. Maheswari A., <i>Public Administration</i> , NCERT, New Delhi, 1983.	
<b>Reference Books</b>		
1	Anupama Puri Mahajan, <i>Public Administration</i> , Pearson, 2018.	
2	Avasthi, <i>Public Administration</i> , Lakshmi Narain Agarwal, 2017.	
3	<a href="#">Laxmikanth M.</a> , <i>Public Administration</i> , McGraw Hill Education, 2011.	
4	Myneni S.R, <i>Principles of Public Administration</i> , Allahabad Law Agency, 2016.	
5	<a href="#">J. Steven Ott</a> and <a href="#">Russell E. W.</a> , <i>Introduction to Public Administration</i> , Pearson Publication, 2000.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd2_cec19_hs16/preview">https://swayam.gov.in/nd2_cec19_hs16/preview</a>	
2	<a href="https://www.youtube.com/watch?v=ORWOn8om63M">https://www.youtube.com/watch?v=ORWOn8om63M</a>	
3	<a href="https://www.britannica.com/topic/public-administration">https://www.britannica.com/topic/public-administration</a>	
Course Designed By: <b>Prof. M. THANGAVEL</b> , Asst. Prof. of History, Sri Vasavi College, Erode.		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	M	S	M	M	S	S	M	M
CO3	S	M	S	M	M	M	S	M	S
CO3	S	M	S	M	M	S	S	S	M
CO4	S	M	S	M	M	M	S	M	S
CO5	S	M	S	M	M	M	M	S	M

\*S-Strong; M-Medium; L-Low



## SEMESTER- VI

### ELECTIVE III-A

Course code	TITLE OF THE COURSE			L	T	P	C
Elective III-A	TOURISM IN TAMIL NADU			5	-	-	4
Pre-requisite	Basic Knowledge in Tourism			Syllabus		revision	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Make the students to understand the important Historical tourist places in Tamil Nadu.</li> <li>2. Know the cultural and eco-tourist centres in Tamil Nadu.</li> <li>3. Educate the students to recognize Tamil Nadu as one of the tourist attraction to promote economic activities.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the significance of tourist places in Tamil Nadu.						K1
2	Learn about the Architecture and Sculpture of the Temples in Tamil Nadu.						K2
3	Highlight the significance of Hill Stations and commercial cities of Tamil Nadu.						K2
4	Get motivated to choose a career in tourism.						K3
5	Analyze the Eco-tourist spots in Tamil Nadu.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>HISTORICAL TOURIST PLACES</b>					<b>15 hours</b>	
Historical places - Chennai - Kancheepuram - Mahabalipuram - Tanjore - Madurai - Vellore.							
<b>Unit:2</b>	<b>CULTURAL CENTERS</b>					<b>15 hours</b>	
Cultural centres - Velankanni - Nagore - Rameshwaram – Thiruvannamalai - Srirangam-Kuduthurai of Bhavani							
<b>Unit:3</b>	<b>ECO-TOURIST CENTERS</b>					<b>15 hours</b>	
Eco Tourist Centres - Western Ghats - Eastern Ghats - Mudumalai - Aanaimalai - Tirunelveli - Kalakkadu.							
<b>Unit:4</b>	<b>SUMMER RESORTS</b>					<b>14 hours</b>	
Hill Stations - The Nilgiris - Ooty – Kodaikanal, Yercaud, Yelagiri.							
<b>Unit:5</b>	<b>COMMERCIAL CENTERS</b>					<b>14 hours</b>	
Commercial Centres - Chennai - Coimbatore - Madurai - Salem - Erode - Tirupur.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Bhatia A.K., <i>Tourism Development, Principles and Practices</i> , Sterling c Publishers (P) Ltd, New Delhi, 2012.	
2	Tamil Nadu Tourism Development Corporations Publications, Chennai.	
<b>Reference Books</b>		
1	Anand N. M, <i>Tourism and Hotel Industry in India</i> , Sterling Publishers (P) Ltd, New Delhi.	
2	Chistpher J. Holloway, <i>The Business of Tourism</i> , Macdonald and Evans 1983.	
3	Kaul E.H, <i>Dynamics of Tourism</i> , Stosius Inc/Advent Books Division, 1985.	
4	Subramania Pillai S., <i>Tourism in Tamil Nadu: Growth and Development</i> , MJP Publisher, 2019.	
5	Sura Books Editorial Team, <i>Tourist Guide to Tamil Nadu</i> , Sura Books, 2012.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.ttdconline.com/">http://www.ttdconline.com/</a>	
2	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827</a> (Tourism P-1, M-01)	
Course Designed By: <b>Prof. M. THANGAVEL, Assistant Professor of History, Sri Vasavi College, Erode.</b>		

<b>Mapping with Programme Outcomes</b>									
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>
<b>CO1</b>	S	S	S	M	M	S	S	M	M
<b>CO3</b>	S	S	S	M	M	S	S	S	S
<b>CO3</b>	S	S	S	M	M	S	M	S	S
<b>CO4</b>	S	S	S	M	M	M	M	S	S
<b>CO5</b>	S	S	S	M	M	S	S	M	M

\*S-Strong; M-Medium; L-Low

**SEMESTER- VI**  
**ELECTIVE III-B**

Course code	TITLE OF THE COURSE	L	T	P	C
<b>Elective III-B</b>	<b>SOCIOLOGY</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge in Sociology</b>	<b>Syllabus</b>		<b>Version</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Teach students the concepts, theories, and methods of the Sociology.</li> <li>2. Introduce students to the basic social processes of society, social institutions and patterns of social behaviour.</li> <li>3. Train students to understand and to interpret objectively the role of social processes, social institutions and social interactions in their lives.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Identify how social structures create and reproduce different forms of social inequality, locally and globally.				K1
2	Understand sociological knowledge to inform public understanding and policy debates.				K2
3	Apply sociological concepts and theories to understand social phenomena.				K3
4	Analyze social scientific data and quantitative data.				K4
5	Evaluate explanations of human behaviour, social phenomena, and social processes locally and globally.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>SOCIOLOGY-THE DISCIPLINE</b>	<b>15 hours</b>			
Sociology as a Science and as an interpretive discipline; Impact of industrial and French Revolution on the emergence of Sociology; Sociology and its relationship with History, Economics, Political science, Psychology and Anthropology.					
<b>Unit:2</b>	<b>ORIGIN, NATURE AND SCOPE OF SOCIOLOGY</b>	<b>15 hours</b>			
Relationship with other Social Sciences - Social groups - Social Control.					
<b>Unit:3</b>	<b>CULTURE</b>	<b>15 hours</b>			
Marriage, family and kinship, Economic Institution - Political Institutions.					
<b>Unit:4</b>	<b>RELIGION AND CULTURE</b>	<b>14 hours</b>			
Education, Culture, Society and Personality - Individual and socialization.					
<b>Unit:5</b>	<b>CULTURE AND PERSONALITY FORMATION</b>	<b>14 hours</b>			

Methods of research - Unity and Diversity - Social Demography.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Text Book(s)</b>		
1	Amit Kumar Sharma, <i>Structure of Indian Society</i> , NCERT, New Delhi, 2003.	
2	Boopendra K. Nagla and Sheo Bahal Singh, <i>Introducing Sociology</i> , NCERT, New Delhi, 2002.	
<b>Reference Books</b>		
1	<a href="#">George Ritzer</a> , <i>Sociological Theory</i> , Fifth edition, McGraw-Hill, 2011.	
2	<a href="#">Haralambos M</a> , <a href="#">Heald R.M.</a> , <i>Sociology: Themes and Perspectives</i> , Oxford Publication, 1997.	
3	<a href="#">Dr. Sartaj Ahmad</a> , <i>A Textbook of Sociology</i> , University Book House Pvt. Ltd., 2019.	
4	Shankar Rao C.N., <i>Sociology Principles Of Sociology</i> , S Chand, 2019.	
5	<a href="#">Vidya Bhushan and Sachdeva D R</a> , <i>Fundamentals of Sociology</i> , Pearson Publication, 2016.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd2_nce19_sc24/preview">https://swayam.gov.in/nd2_nce19_sc24/preview</a>	
2	<a href="https://en.wikipedia.org/wiki/Sociology">https://en.wikipedia.org/wiki/Sociology</a>	
3	<a href="https://www.youtube.com/watch?v=TryHsjdV6_Y">https://www.youtube.com/watch?v=TryHsjdV6_Y</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	M	S	S	M	S	S	M	S
CO3	S	S	S	S	M	S	S	M	S
CO3	S	M	S	M	M	M	S	S	M
CO4	S	S	S	S	M	M	S	M	M
CO5	S	M	S	M	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

**SEMESTER- VI  
 ELECTIVE III-C**

Course code	TITLE OF THE COURSE	L	T	P	C
Elective III-C	<b>GEOGRAPHY</b>	5	-	-	4
Pre-requisite	Geographical knowledge at School Level.	Syllabus revision			
<b>Course Objectives:</b>					
The main objectives of this course are to:					
<ol style="list-style-type: none"> <li>1. Teach a general grounding of the fundamental knowledge of geography.</li> <li>2. Able to explain territorial diversity and complexity, and the interrelations of natural environmental phenomena</li> <li>3. Enable graduates to take postgraduate or specialization courses in which a territorial component is dealt with.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the geography of India and world.				K1
2	Understand and appreciate the relationship between geography and culture.				K2
3	Locate on a map major physical features, cultural regions, and individual states and urban centres.				K3
4	Analyze the physical geographic process, the global distribution of landforms and ecosystems, and the role of the physical environment on human populations.				K4
5	Evaluate the impacts of human activities on natural environments special reference to India.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>MAJOR RESOURCES OF THE EARTH</b>	<b>15 hours</b>			
World Distribution of Resources.					
<b>Unit:2</b>	<b>NATURAL RESOURCE</b>	<b>15 hours</b>			
Production and Conservation of resources - Utilization of Natural resources.					
<b>Unit:3</b>	<b>AGRICULTURE</b>	<b>15 hours</b>			
Major crops - Secondary Production.					
<b>Unit:4</b>	<b>TERRITORY OCCUPATIONS</b>	<b>14 hours</b>			
Transport and Communication - Modern Means of Communication.					
<b>Unit:5</b>	<b>POPULATION AND SETTLEMENTS</b>	<b>14 hours</b>			

Distribution and Density - Population growth - Rural and Urban Population - Impact of Rapid Population growth on development.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Majid Husain, <i>Human and Economic Geography</i> , NCERT, New Delhi, 1978. Prepared by Dr. N. Balasubramaniam, Reader and Head of the Department, Department of History, CBM College, Coimbatore 641 042.	
2	<a href="#">Rajiv Ahir</a> , <i>Geography</i> , Spectrum Books Pvt. Ltd, 2020.	
<b>Reference Books</b>		
1	Dhillon S. S., <i>Agricultural Geography</i> , Tata McGraw-Hill Education, 2004.	
2	Husain Majid, <i>Human Geography</i> , Rawat Publication, 2011.	
3	<a href="#">John V. Walther</a> , <i>Earth's Natural Resources</i> , Jones and Bartlett Publishers, Inc, 2013.	
4	<a href="#">Mohan Singh</a> , <i>Environmental Geography</i> , ABD Publishers, 2011.	
5	Siddhartha K., <i>Models &amp; Theories in Geography</i> , Kitab Mahal, Fourth Edition, 2016.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://swayam.gov.in/nd2_nce19_sc20/preview">https://swayam.gov.in/nd2_nce19_sc20/preview</a>	
2	<a href="https://en.wikipedia.org/wiki/Geography">https://en.wikipedia.org/wiki/Geography</a>	
3	<a href="https://www.youtube.com/watch?v=8McizDCj6qE">https://www.youtube.com/watch?v=8McizDCj6qE</a>	
Course Designed By: <b>Prof. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode.</b>		

Mapping with Programme Outcomes									
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	S	S	M	S	M	S	S	M	M
CO3	S	S	M	S	M	S	S	M	S
CO3	S	S	M	S	M	M	S	M	S
CO4	S	S	M	S	M	S	S	S	M
CO5	S	S	M	M	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

**I. PASSING MAXIMUM AND MINIMUM MARKS FOR CONTINUOUS INTERNAL ASSESSMENT (CIA) AND COMPREHENSIVE EXTERNAL EXAMINATIONS (CEE)**

**THEORY and PRACTICAL PAPERS (Core, Allied, Elective and Skill Based Subjects)**

MAXIMUM MARKS	Continuous Internal Assessment (CIA)		Comprehensive External Examinations (CEE)		Overall Passing Minimum Marks (CIA+ CEE)
	Max. Marks	Passing Minimum Marks	Max. Marks	Passing Minimum Marks	
<b>100</b>	<b>50</b>	20	<b>50</b>	20	<b>40</b>
<b>75</b>	<b>30</b>	12	<b>45</b>	18	<b>30</b>

**Note:** If a candidate fails to score the passing minimum marks in CIA, then the candidate (he/she) must score the overall passing minimum marks in the CEE to pass.

**II. PASSING MINIMUM MARKS FOR PART-IV SUBJECTS ENVIRONMENTAL STUDIES, VALUE EDUCATION-HUMAN RIGHTS, YOGA FOR HUMAN EXCELLENCE AND WOMEN'S RIGHTS IS 20 EACH. THE QUESTION PAPERS PATTERN SHOULD BE 5 OUT OF 10 AND EACH QUESTION CARRIES 10 MARKS. THE GENERAL AWARENESS PAPER TO HAVE MULTIPLE- CHOICE QUESTIONS (WITH FOUR OPTIONS) TO BE EVALUATED BY USING OMR AND PASSING MINIMUM IS 20 MARKS.**

**III. PART-V – EXTENSION ACTIVITIES TO BE FOLLOWED WHICH ALREADY EXISTS IN UNIVERSITY PATTERN**

**IV. DISTRIBUTION OF MARKS OF CIA FOR CORE, ALLIED, ELECTIVE AND SKILL BASED SUBJECTS TO BE FOLLOWED FOR THE OBE PATTERN SYLLABI FOR THE CANDIDATES ADMITTED FROM THE ACADEMIC YEAR 2021-2022 AND ONWARDS.**

S.NO	Criterion for Continuous Internal Assessment (CIA)	Maximum Marks 50 for Core, Allied and Elective	Maximum Marks 30 for Core and Skill Based Subject
1.	Two Internal Written Test for maximum 30 marks of 2 hours duration each to be conducted and the marks scored will be converted to 15 marks (Core, Allied and Elective) and 10 marks (Core and Skill Based Subject) wherever applicable. The best one test mark will be taken to CIA.	15	10
2.	An end semester Model Written Test of maximum 50 marks for Core, Allied and Elective, and 45 marks for Core and Skill Based Subject respectively of 3 hours duration on University pattern of question paper to be conducted and the marks scored by the candidates will be converted to 15 marks (Core, Allied and Elective) and 10 marks (Core and Skill Based Subject) wherever applicable.	15	10
3.	Seminar	5	3
4.	Two Assignments and Oral Test of Assignment	5	3
5.	Quiz / Group Discussion	5	2
6.	Punctuality, regularity, initiative, conduct, class participation and responsiveness	5	2
	<b>TOTAL CIA MARKS</b>	<b>50</b>	<b>30</b>

**V. Distribution of CIA marks for PRACTICAL PAPER in Semester-VI from 2021-2022 Onwards.**

**Skill Based Subject-IV: Computer Applications in History-II (Fully Practical)**

Computer Practical for minimum 15 Lab/Class	CIA Practical Test-I	CIA Practical Test-II	Best One Practical Test Marks	Record Note	Total



<b>15</b>	10	10	<b>10</b>	<b>5</b>	<b>30</b>
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**VI. QUESTION PAPER PATTERN FOR CIA WRITTEN TESTS 1 AND 2 OF ALL CORE, ALLIED, AND ELECTIVE OF B.A. HISTORY (2021-2022) ONWARDS**

**A. Blue Print of question papers of CIA written test for Core, Allied and Elective with 4 credits (Maximum 15 marks)**

<b>Bloom's Category</b>	<b>Section and allocation of marks</b>	<b>Pattern of questions</b>	<b>Total</b>
Remember (K1)	Section A- 4x1=4 marks	4 Multiple choice questions with four options	Marks scored by students out of 30 will be converted to <b>15 Marks</b>  <b>(30/2=15)</b>
Understanding (K2)	Section B- 2x5=10 marks	2 Short answer questions either (a) or (b) type to be answered in 200 words	
Apply (K3) or Analyze (K4) or Evaluate(K5) or Create (K6)	Section C- 2x8=16 marks	2 Essay type questions either (a) or (b) type to be answered in 500 words.	

**B) Blue Print of Question Papers of CIA written test for Core I & II in SEM-I and Other Skill Based Subject Papers with 3 Credits (Maximum 10 Marks)**

<b>Bloom's Category</b>	<b>Section and allocation of marks</b>	<b>Marks</b>	<b>Total</b>
Remember (K1)	Section A - 4x1 marks	4 Multiple choice questions with four options	Marks scored by students out of 30 will be converted to <b>10 Marks</b>  <b>(30/3=10)</b>
Understanding (K2)	Section B - 2x5 marks (either a or b)	2 Short answer questions either (a) or (b) type to be answered in 200 words	
Apply (K3) or Analyze (K4) or Evaluate(K5) or Create (K6)	Section C - 2x8 marks (either a or b)	2 Essay type questions either (a) or (b) type to be answered in 500 words.	

**VII. QUESTION PAPER PATTERN FOR CORE / ALLIED/ ELECTIVE OF COMPREHENSIVE EXTERNAL EXAMINATION (CEE) WITH 4 CREDITS**

The following question paper pattern shall be followed for OBE pattern syllabi for the candidates admitted from the academic year 2021-2022 onwards. Equal importance to be given to test the course outcomes (K1-Remember; K2- Understand; K3- Apply; K4- Analyze; K5- Evaluate; K6- Create)

**A. CEE- Maximum marks 50 for Core, Allied and Elective Subjects with 4 Credits:**

<b>Bloom's Category</b>	<b>Section and allocation of marks</b>	<b>Marks</b>	<b>Total</b>
Remember (K1)	Section A - 10×1 =10 marks	10 Multiple choice questions with four options- 2 from each unit	<b>50 Marks</b>
Understanding (K2)	Section B - 5×3 =15 marks (either a or b)	5 Short answer questions either (a) or (b) type to be answered in 200 words- 1 from each unit	
Apply (K3) or Analyze (K4) or Evaluate(K5) or Create (K6)	Section C - 5×5 =25 marks (either a or b)	5 Essay type questions either (a) or (b) type to be answered in 500 words- 1 from each unit	

**B. CEE- Maximum marks 45 for Core papers in Semester-I and Skill Based Subjects  
 in Semester III, IV and V with 3 Credits:**

<b>Bloom's Category</b>	<b>Section</b>	<b>Marks</b>	<b>Total</b>
Remember (K1)	Section A - $10 \times 1 = 10$ marks	10 Multiple choice questions with four options- 2 from each unit	<b>45 Marks</b>
Understanding (K2)	Section B - $5 \times 2 = 10$ marks (either a or b)	5 Short answer questions either (a) or (b) type to be answered in 200 words- 1 from each unit	
Apply (K3) or Analyze (K4) or Evaluate(K5) or Create (K6)	Section C - $5 \times 5 = 25$ marks (either a or b)	5 Essay type questions either (a) or (b) type to be answered in 500 words- 1 from each unit	

**Note:**

**K1- Remember:** To test the student's ability to memorize and to recall terms, facts and details without necessarily understanding the concept.

**K2- Understand:** To test the student's ability to describe or summarize in their own words without necessarily relating it to anything.

**Keywords:** Describe, Mention, List out, Point out, Enumerate, Sketch, Give an account of, Distinguish, Explain, Interpret, Predict, Recognize and Summarize.

**K3-Apply:** To test student's ability to apply or transfer learning to their own life or to a context different than one in which it is learned.

**Keywords:** Apply, Compare, Contrast, Demonstrate, Examine, Relate, Solve and Use.

**K4-Analyze:** K4 questions encourage students to break material into parts, describe patterns and relationships among parts, to subdivide information and to show how it is put together.

**Keywords:** Analyze, Differentiate, Distinguish, Trace, Explain, Elaborate, Infer, Relate, Research and Separate.

**K5-Evaluation:** To encourage students to develop opinions and make value decisions about issues based on specific criteria.

**Keywords:** Assess, Critique, Determine, Evaluate, Judge, Justify, Measure and Recommend.

**K6-Create:** K6 order of questions encourages students to create something new by using a combination of ideas from different sources to form a new whole.

**Keywords:** Arrange, Combine, Create, Design, Develop, Formulate, Integrate and Organize.

**(Keywords are mere examples; the question paper setters can use any apt word suitable to test different cognitive development.)**

**BLUE PRINT FOR B.A. HISTORY QUESTION PAPER PATTERN FOR CEE**

**SECTION-A 10x1=10 Marks (Objective Type)**

**SECTION-B 5x3=15 Marks (Short Answer, either or pattern)**

**SECTION-C 5x5=25 Marks (Essay Type, either or pattern)**

BLOOM'S CATEGORY		K1 Remember	K2 Understand (or) K3 Apply		K4 Analyze	K5 Evaluate	K6 Create
UNIT-I	Section-A	2 questions	-	-	-	-	-
	Section-B	-	1 question	1question	-	-	-
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)	-	-
UNIT-II	Section-A	2 questions	-	-	-	-	-
	Section-B	-	1 question	1question	-	-	-
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)	-	-
UNIT-III	Section-A	2 questions	-	-	-	-	-
	Section-B	-	1 question	1question	-	-	-
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)	-	-
UNIT-IV	Section-A	2 questions	-	-	-	-	-
	Section-B	-	1 question	1question	-	-	-
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)	-	-
UNIT-V	Section-A	2 questions	-	-	-	-	-
	Section-B	-	1 question	1question	-	-	-
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)	-	-

**MAX MARKS: 50**

**TIME: 3 Hrs.**

**Note:** Equal importance to be given to test all Ks in section-C

**BLUE PRINT FOR B.A. HISTORY QUESTION PAPER PATTERN FOR CEE**

**(Except SBS Practical Paper)**

**SECTION-A 10x1=10 Marks (Objective Type)**

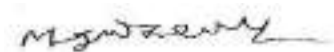
**SECTION-B 5x2=10 Marks (Short Answer, either or pattern)**

**SECTION-C 5x5=25 Marks (Essay Type, either or pattern)**

BLOOM'S CATEGORY		K1 Remember	K2 Understand (or) K3 Apply		K4 Analyze	K5 Evaluate	K6 Create
UNIT-I	Section-A	2 questions	-	-	-		
	Section-B	-	1 question	1question	-		
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)		
UNIT-II	Section-A	2 questions	-	-	-		
	Section-B	-	1 question	1question	-		
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)		
UNIT-III	Section-A	2 questions	-	-	-		
	Section-B	-	1 question	1question	-		
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)		
UNIT-IV	Section-A	2 questions	-	-	-		
	Section-B	-	1 question	1question	-		
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)		
UNIT-V	Section-A	2 questions	-	-	-		
	Section-B	-	1 question	1question	-		
	Section-C	-	-	-	1 questions either a) or b) pattern evaluating (K4, K5, K6)		

**MAX MARKS: 45; TIME: 3 Hrs.**

**Note:** Equal importance to be given to test all Ks in section-C



-Chairperson  
 UG History BOS



**PROVIDENCE COLLEGE FOR WOMEN - COONOOR**  
**PG & RESEARCH DEPARTMENT OF HISTORY**  
**M.A HISTORY SYLLABUS**  
**2022 – 2023 onwards**



**PROGRAM EDUCATIONAL OBJECTIVE (PEOs) are:**

<b>Program Educational Objectives (PEOs)</b>	
<b>THE M.A. HISTORY PROGRAM (Affiliated Colleges)</b> (describe accomplishments that graduates are expected to attain within five to seven years after graduation)	
PEO1	To construct the vision of students to recognize the historical diversity of human experience in time and space without any distinction of countries, ethnicity, religion, caste, class, language, sex etc. and to make them work towards universal brotherhood.
PEO2	To equip the students with a set of professional dispositions and abilities required to be a historian, teacher, professor, archivist, archaeologist, museologist, epigraphist, writer, politician, orator, lawyer, journalist, tourist guide and administrators.
PEO3	To motivate the students to acquire the competencies in the skills and tools of historical research and analysis to take up higher studies of research in the diverse fields of history like political, social, economic, and cultural as well as Archaeology, Museology, Epigraphy etc.
PEO4	To endow the graduates with the knowledge of recent trends and sequence in history and to promote their ability to interpret, analyze, write and communicate historical knowledge in excellence.

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of M.A. History program, the students are expected	
PSO1	To acquire mastery of the knowledge in history and its various political and social structures, cultures, specific events, facts, terminologies, conventions, and methodology.
PSO2	To obtain a deep understanding of history with the ability to comprehend the facts and principles of different historical times and make an advance exploration in specific historical topics.
PSO3	To assess the values of unity in diversity and construct a humanitarian approach towards society to become better citizens of their nation and world.
PSO4	To analyze the history of different societies, civilizations, cultures and their interconnection and classify, compare and contrast the events, facts, concepts, ideas and philosophies.
PSO5	To evaluate and recognize the values of history.
PSO8	To integrate their learning from different fields of history to develop a scientific, secular approach towards history and advance arguments in support of right historical contention.
PSO9	To equip with the essentialities of their choice of chosen career.



<b>Program Outcomes (POs)</b>	
On successful completion of the M.A. History program the learner will:	
PO1	Acquire mastery of the historical knowledge of the diversity of human experience in political, social, cultural, economic, scientific fields and events over a period of time and space.
PO2	Understand the similarities, differences and interconnections of different histories of the world and acquire multicultural sensitivity by exploring the past in different angles.
PO3	Demonstrate mastery of information literacy through writing about the Indian History, World History, History of Tamil Nadu, Archaeology, Museology and Tourism.
PO4	Communicate historical knowledge, interpretations, and arguments clearly in oral presentations and history projects.
PO5	Illustrate an attitude of research of social relevance and develop a secular, scientific approach towards history.
PO6	Analyze the political, social and cultural aspects of different times, regimes and dynasties.
PO7	Compare and contrast different events, ideas, thoughts, philosophies and institutions of history to construct a coherent narrative.
PO8	Identify and appreciate the contributions of civilizations, empires and nation states.
PO9	Recognize and evaluate the achievements of man in history and progress of ideas.
PO10	Develop worthy intellectual attitude and will acquire the modern skills, aptitude and potentialities of most creative mode in history.

**M.A. HISTORY**

(For the students admitted during the academic year 2022– 2023 onwards)

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	CORE – 1 Social and Cultural History of India upto 1206 A.D.	4	5	-	50	50	100
	CORE – 2 History of the Delhi Sultanate from 1206 A.D. to 1526 A.D.	4	5	-	50	50	100
	CORE – 3 History of the Mughals from 1526 A.D. to 1773 A.D.	4	5	-	50	50	100
	CORE – 4 Constitutional History of India from 1773 A.D. to 1950 A.D.	4	5	-	50	50	100
	CORE – 5 History of Indian National Movement since 1885 A.D.	4	5	-	50	50	100
	Elective I -	4	5	-	50	50	100
	<b>Total</b>	24					600
<b>SECOND SEMESTER</b>							
	CORE – 6 Social and Cultural History of Tamil Nadu from Sangam Age to 1800 A.D.	4	5	-	50	50	100
	CORE – 7 Social and Cultural History of Tamil Nadu from 1800 A.D. to 1916 A.D.	4	5		50	50	100
	CORE – 8 Panchayat Raj	4	5	-	50	50	100
	CORE – 9 History of Kongu Nadu	4	5	-	50	50	100
	CORE-10 Contemporary History of India from 1947	4	5	-	50	50	100

	A.D. to 2014 A.D.						
	Elective II –	4	5	-	50	50	100
	<b>Total</b>	24					600
<b>THIRD SEMESTER</b>							
	CORE – 11 History of Ancient Civilization up to 476 A.D. (Excluding India)	4	5	-	50	50	100
	CORE – 12 History of Medieval Civilization from 476 A.D. to 1453 A.D.	4	5	-	50	50	100
	CORE – 13 Historiography: Theory and Methods	4	5	-	50	50	100
	CORE – 14 History of Far East from 1800 A.D. to 1989 A.D.	4	5	-	50	50	100
	CORE – 15 Social and Cultural History of Tamil Nadu from 1916 A.D. to 2001 A.D.	4	5	-	50	50	100
	Elective III –	4	5	-	50	50	100
	<b>Total</b>	24					600
<b>FOURTH SEMESTER</b>							
	CORE – 16 International Relations and Diplomacy from 1914 A.D. to 1991 A.D.	4	6	-	50	50	100
	CORE – 17 Project and Viva Voce***	4	6	-	50	50	100
	Special Elective – 1##	3	6	-	30	45	75
	Special Elective – 2##	3	6	-	30	45	75
	Elective IV –	4	6	-	50	50	100
	<b>Total</b>	18					450
	<b>Grand Total</b>	90					2250
<b>ONLINE COURSES</b>							
	SWAYAM – MOOC – Online Course*@	2	-	-	-	-	50
Non-scholastic with Credits							
*@The students can do any 2 online course in the I and III semester but <b>ITS NOT MANDATORY. A pass or fail of the student in the online courses will in no way affect the regular course.</b>							

**PAPERS FOR ELECTIVES**

(Colleges can choose any ONE elective per semester from the choices)

	Titles of the Elective Courses		
<b>PAPER I/ SEMESTER-I</b>	TOURISM AND TRAVEL MANAGEMENT	<b>(OR)</b>	EPIGRAPHY
<b>PAPER II/ SEMESTER-II</b>	OFFICE AUTOMATION AND APPLICATIONS (Industry 4.0)	<b>(OR)</b>	PRINCIPLES AND METHODS OF ARCHAEOLOGY
<b>PAPER III/ SEMESTER- III</b>	INTERVIEW SKILLS AND TECHNIQUES	<b>(OR)</b>	MUSEOLOGY
<b>PAPER IV/ SEMESTER- IV</b>	GENERAL STUDIES FOR COMPETITIVE EXAMINATIONS	<b>(OR)</b>	TEMPLE ART AND ARCHITECTURE OF TAMIL NADU

**PAPERS FOR SPECIAL ELECTIVE 1 AND 2 OF FOURTH SEMESTER**

**## (Choose any two of the following papers listed 1-4)**

1)	Women's Studies
2)	Human Rights
3)	Introduction to Journalism and Mass Communication
4)	History of U.S.A. from 1865 A.D. to 1974 A.D.

**\*\*\* A Project is to be done in the IV Semester with viva-voce examination at the end of the IV Semester.**

- A Project on any historical topic pertaining to any period of student's interest to be done under the supervision of a guide and submit a project report of not more than 50 pages and not less than 40 pages (The *Times New Roman* font sized 12 (1.5 spaced) in A4 size paper)
- The 50 marks of CIA of the project must be on the basis of the students field visits, collections of sources and his overall performance as a new researcher.
- Project must be related to a topic relevant to the history.
- The Project must be submitted *before* the end of the 4th Semester Examination.
- A viva-voce examination must be conducted at the end of the IV semester. The 50 marks of ESE must be based on Viva-voce. The evaluation of the project shall be done by a panel of examiners not less than two (one External and one Internal).

<b>Weightage of marks for Project CIA</b>	<b>Marks</b>
a. Brief description of the plan of the project and discussions with the guide	10
b. Field visits to Archives, Libraries, Record offices, Historical sites etc.	10
c. Preparation of preliminary report	30
<b>Total Internal marks</b>	<b>50</b>

<b>Weightage of marks for Viva-voce (ESE)</b>	<b>Marks</b>
a. Presentation in completeness in terms of expectation of the project (abstract, introduction, scope, objectives, historical sources, chapters, conclusion findings, suggestions etc.)	30
b. Questions and answer session	20
<b>Total External marks</b>	<b>50</b>

# First Semester

COURSE CODE	SOCIAL AND CULTURAL HISTORY OF INDIA UPTO 1206 A.D.	L	T	P	C
<b>CORE-1</b>	.	4	-	-	4
<b>Pre-requisite</b>	A basic historical knowledge about Indian history at undergraduate level	<b>Syllabus</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>					
The main objectives of this course are :					
1. To understand the social structure, religion and culture of India.					
2. To learn about the birth of new religions in ancient India and importance of social harmony.					
3. To devote greater attention to non-political aspects of history by introducing concepts with a view to enabling comprehension rather than the retention of facts					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember and follow clues, traces left by people who lived in the past.				K1
2	Understand the problems of their times, their legacy, literature, inventions and discoveries that slowly transformed human societies.				K2
3	Apply the concepts for contemplation and promoting universal brotherhood and harmony.				K3
4	Analyze the impact of foreign invasions on society and culture.				K4
5	Evaluate the contribution of Jainism and Buddhism to Indian Culture				K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create					
<b>Unit:I</b>	<b>SOCIAL AND CULTURAL LIFE OF HARAPPANS AND DRAVIDIANS</b>	<b>15-- hours</b>			
Pre-historic culture-Socio - Cultural life of the Indus Valley people –Indus Script- Religion – Economy and Trade- Causes for the decline of the Indus Valley Civilization- Dravidian Society and Culture.					
<b>Unit:II</b>	<b>SOCIAL INSTITUTIONS UNDER ARYANS</b>	<b>15-- hours</b>			
The Advent of the Aryans - Social and cultural life of the Rig Vedic and Later Vedic Aryans – Religious ideas, rituals and practices- Evolution of Social Institutions-Origin and growth of caste system and its impact on society-Position of women.					
<b>Unit:III</b>	<b>RELIGIOUS UNREST AND ITS IMPACT</b>	<b>15-- hours</b>			
Religious unrest in 6th Century B.C.–Racial, Social, Economic and Religious factors- Jainism and Buddhism-Contribution to Indian culture-Language, Literature, Art and Architecture-Persian and Greek influence-The Rise of Urban Centres-Cultural interaction between India and neighboring countries (Central Asia, South East Asia, China)					
<b>Unit:IV</b>	<b>LEGACY OF MAURYAS AND SATAVAHANAS</b>	<b>14-- hours</b>			
Mauryan Legacy-Asoka and his Policy of Dharma-Asokan Edicts-Brahmi and Kharosthi scripts-Spread of Buddhism –Mauryan Art and Architecture- Transformation of Buddhism –Rise of Mahayanism -Gandhara School of Art- Cultural legacy of the Satavahanas.					
<b>Unit:V</b>	<b>AGE OF GUPTAS DOWN TO HARSHA</b>	<b>14-- hours</b>			

Golden Age of the Guptas-Revival of Hinduism during the Gupta period - Its impact on Society - Progress of Science and Literature-Art and Architecture-Paintings-Coinage of Guptas- Great Educational Centres- Nalanda and Vikramasila- Age of Harsha- Society and Culture.		
<b>Unit:VI</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Jayapalan, N., <i>History of Indian Culture</i> , Atlantic Publishers & Distributors, New Delhi, 2001.	
2	Kosambi,D.D., <i>The Culture and Civilisation of Ancient India in Historical Outline</i> , Vikas Publishing House Pvt.Ltd., New Delhi, 1977.	
3	Mahajan, V.D., <i>The History of India upto 1206 A.D</i> , S Chand & Co New Delhi, 1970.	
<b>Book(s) for Reference</b>		
1	Basham,A.L, <i>Cultural History of India</i> , Ed. Oxford University Press, New Delhi, 1975.	
2	Nilakantasastri,K.A., <i>History of India</i> , Oxford University Press,New Delhi,.1950	
3	Smith, V.A., <i>Oxford History of India</i> , OUP, New Delhi.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_India">https://en.wikipedia.org/wiki/History_of_India</a>	
2	<a href="https://ndl.iitkgp.ac.in/homestudy/humanities">https://ndl.iitkgp.ac.in/homestudy/humanities</a>	
3	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a>	
4	<a href="http://egyankosh.ac.in/handle/123456789/53713">http://egyankosh.ac.in/handle/123456789/53713</a>	
Course Designed By: <b>Prof. R.PRAKASH</b> , Assistant Professor in History, Sri Vasavi College , Erode. E- mail ID <a href="mailto:prakashero80@gmail.com">prakashero80@gmail.com</a>		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	S	M	M	S	M	M
CO2	M	S	S	M	S	M	M	S	S	M
CO3	S	S	M	M	S	M	M	S	M	S
CO4	S	S	S	S	M	M	M	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	<b>HISTORY OF THE DELHI SULTANATE FROM 1206 A.D. TO 1526 A.D.</b>		L	T	P	C
<b>CORE-2</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Knowledge of Indian History at U.G. level</b>		<b>Syllabus rsion</b>		<b>2021- 2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are :						
1. To acquaint students with the new developments in the different spheres of life during the period of Delhi Sultanate						
2. To provide students with a comprehensive understanding of the events between 1206 A.D. to 1526 A.D.						
3. To create awareness among students about the socio-political and cultural changes India had undergone during the medieval period.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students will be able to:						
1	Continue to enhance their knowledge through independent work and practice.					K1
2	Understand the administration and disintegration of Delhi Sultanate.					K2
3	Apply their knowledge and critical understanding of history to a greater extent.					K3
4	Act autonomously for planning and executing research and writing.					K4
5	Critically evaluate the current research, practice, and debate in Medieval history of India					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:I</b>	<b>SLAVE DYANASTY</b>				<b>15- hours</b>	
Sources - India on the eve of the Muslim conquest - Arab, Ghaznavid and Ghorid Invasions: Nature and Impact -Qutb-ud-din-Aibek - Iltutmish -Nobles – Ulema – The Forty- Raziya – Balban-Theory of Kingship-Successors of Balban.						
<b>Unit:II</b>	<b>KHILJI DYNASTY</b>				<b>15-- hours</b>	
The Khilji Revolution- Jalal-ud-din-Khilji- Ala-ud-din-Khilji- Theory of kingship- Conquests and Territorial Expansion- Administrative System- Price Control and Market Regulations- Agrarian measures –Military reforms- Foreign policy- southern conquest- Mongol invasions and its effects.						
<b>Unit:III</b>	<b>TUGHLUQ DYNASTY</b>				<b>15 hours</b>	
Ghiyas-ud-din Tughluq- Mohammed-bin-Tughluq –Administrative experiments – The disorders of his reign - Firoz Tughluq –Foreign policy-Administration- Humanitarian measures- Timur's invasion of India and its impact.						
<b>Unit:IV</b>	<b>SAYYID AND LODI DYNASTY</b>				<b>14-- hours</b>	
Khizr Khan - Mubarak Shah - Alam Shah -Bahlol Lodi- Sikander Lodi - Ibrahim Lodi- Decline and disintegration of the Delhi Sultanate- Administration of Delhi Sultanate						
<b>Unit:V</b>	<b>SOCIETY AND CULTURE</b>				<b>14- hours</b>	
Social life of the people -Slavery and Non-Muslims subjects under the sultanate - Agrarian relations and taxation during the Sultanate period –Bhakthi Movement- Art and Architecture - Rise of urban economy -Trade and commerce						
<b>Unit:VI</b>	<b>Contemporary Issues</b>				<b>2- hours</b>	

Expert lectures, online seminars – webinars	
	<b>Total Lecture hours</b>
	<b>75- hours</b>
<b>Book(s) for Study</b>	
1	Mahajan V.D., History of Medieval India, S Chand publication, Delhi, 1991.
2	Mukerjee L, A study of History of India: Medieval Period, Surjeet Publications, Delhi, 2018.
3	Prasad Iswari, History of Medieval India, India Press, Allahabad, 1940.
<b>Book(s) for Reference</b>	
1	Colonel Sir Wolsley Haig, <i>Cambridge History of India. Volume III, Turks and Afghans</i> , The University Press, Macmillan, New York, 1928.
2	Ishwari Prasad, <i>History of Medieval India (from 647 to 1526 A. D.)</i> , Surjeet publications Delhi - 110 052, 2018
4	Majumdar R.C., <i>Delhi Sultanate</i> , Vol- VI, Bharathi Vidya Bhavan, 1967.
5	Maqbul Ahmad, S., <i>Indo-Arab Relations: An Account of India's Relations with the Arab World from Ancient Up to Modern Times</i> , Indian Council for Cultural Relations, New Delhi-2, 1969.
6	Mehta J. L., <i>Advanced Study in the History of Medieval India</i> , Volume- I, Sterling Publications Private Limited, Delhi, 110020, 2019.
7	Rizvi S.A.A., <i>The Wonder that was India</i> , Vol-2, Pan Macmillan Publishing India Private Limited, New Delhi -1, 2005.
8	Sathis Chandra, <i>History of Medieval India (800-1700A.D.)</i> , Orient Blackswan, Delhi- 02, 2007.
9	Srivastava A.L., <i>The Sultanate of Delhi (711-1526 A.D)</i> , Shivalal Agarwala & Company, Agra, 1977.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_hs27/preview">https://swayam.gov.in/nd2_cec20_hs27/preview</a>
2	<a href="https://nptel.ac.in/courses/124/106/124106009/">https://nptel.ac.in/courses/124/106/124106009/</a>
3	<a href="https://ndl.iitkgp.ac.in/">https://ndl.iitkgp.ac.in/</a>
4	<a href="http://www.indohistory.com/">http://www.indohistory.com/</a>
5	<a href="https://www.wikipedia.org/">https://www.wikipedia.org/</a>
Course Designed By: <b>MR.C.GURUCHANDRAPADMAN</b> , Assistant Professor, Department of History, Chikkanna Government Arts College, Tirupur-2. E-mail ID guruchandrapadman@gmail.com	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	S	M	S	S	M	S
CO2	M	S	S	S	M	S	M	S	S	S
CO3	S	S	S	S	M	M	M	M	M	M
CO4	M	M	M	M	S	S	S	S	S	S
CO5	M	M	M	M	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	HISTORY OF THE MUGHALS FROM 1526 A.D TO 1773 A.D.	L	T	P	C
CORE-3		5	1	-	6
Pre-requisite	Basic knowledge of History at U.G. level	Syllabus rsion		2021- 2022	
<b>Course Objectives:</b>					
The main objectives of this course are:					
<ol style="list-style-type: none"> <li>To understand the Mughal era warfare, religious condition, cultural variables and Indian responses to the challenges faced from outside.</li> <li>To understand the contribution of Babur for the foundation of the Mughal Rule.</li> <li>To explain the reign of Akbar the Great in Consolidation of the Mughal Rule.</li> <li>To appreciate the growth of art and architecture under the Mughals.</li> <li>To acquaint the learners the policies of Aurangzeb and its impact.</li> <li>To acquire knowledge about the socio, economic and cultural condition during the Mughal rule.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Recall the political condition of India as gleaned from Babur Nama.				K1
2	Summarize the contribution of Sher Shah to Mughal administration.				K2
3	Recognize the importance of Akbar's Policy in consolidation of the Mughal Rule.				K3
4	Understand the development of Art and Architecture during the period of Shah Jahan.				K2
5	Evaluate Aurangzeb and his policies.				K5
6	Analyse the factors leading to the establishment of British rule in India.				K4
<b>K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create</b>					
<b>Unit-1</b>	<b>SOURCES OF THE MUGHAL EMPIRE</b>	<b>15- hours</b>			
Sources – Literary sources-Archaeological, epigraphic and numismatic materials- Foreigner's Accounts – Political condition of India on the eve of Babur's invasion – The foundation of Mughal Empire –Babur- Babur Nama- Humayun – Causes for his failure- Shershah and his Administrative Reforms.					
<b>Unit-2</b>	<b>AKBAR THE GREAT</b>	<b>15-- hours</b>			
Akbar – Conquest and consolidation of empire – Religious policy-Rajput Policy – Revenue Administration-Raja Todarma-The Mansabdari System					
<b>Unit-3</b>	<b>ART AND ARCHITECTURE OF MUGHAL EMPIRE</b>	<b>15-- hours</b>			
Jahangir– The Nurjahan Junta – Shahjahan – War of succession – Art and Architecture under the Mughals-Mughal school of Paintings-Sikhism –AdiGranth-The Khalsa					
<b>Unit-4</b>	<b>AURANGAZEB AND HIS POLICIES</b>	<b>14-- hours</b>			
Aurangazeb – Religious policy – Deccan policy – Rise of Marathas –Shivaji- Maratha administration-Astapradan, Chauth and Sardeshmukhi					
<b>Unit-5</b>	<b>SOCIETY AND CULTURE UNDER MUGHALS</b>	<b>14-- hours</b>			
Later Mughals – Society, economy and culture during Mughal period –Social classifications- Position of women –System of Education-Divine Decline of Mughal Empire- Causes- Legacy of Mughals.					

Unit-6	Contemporary Issues	2 hours
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Gomathinayagam.P, <i>History of India</i> Prem Publications, Rajapalayam, 1999.	
2	Mahajan, V.D., <i>Modern Indian History</i> , S.Chand & Company Ltd, New Delhi, 2012.	
3	Ramalingam T. S, <i>History of India TSR Publication</i> , Madurai, 1994	
4	Swaminathan, A., <i>History of India</i> , Deepa Pathippagam, Chennai, 2002.	
<b>Book(s) for Reference</b>		
1.	Animesh Mullick, <i>Medieval Indian History</i> , Dominant Publishers, New Delhi, 2011.	
2.	Athar Ali, M., <i>Mughal India</i> , Oxford University Press.	
3.	Choudhary, B.P., <i>History of India</i> , Abhijeet Publication, New Delhi, 2012.	
4.	Goalen Paul, <i>India from Mughal Empire to British Raj</i> , Cambridge University Press, 1993.	
5.	Majumdar, R.C., <i>The Mughal Empire</i> , Vol VII, Bharathi Vidya Bhavan,1977.	
6.	Majumdar, R.C. & Raychoudri, H.C., <i>An Advanced History of India</i> , Macmillian Publishers, India Ltd, New Delhi, 1978.	
7.	Sharma, S.R., <i>Mughal Empire in India</i> , Lakshmi Naraian Agarwal, Educational Publishers,Agra,1934.	
8.	Smith V.A., <i>Akbar the Great Moghul</i> , Chand & Company Ltd, Ram Nagar, New Delhi,1966.	
9.	Srivastava, A. L., <i>Mughal Empire</i> , Shivalal Agarwala & Company, Educational Publishers,Agra,1977.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Mughal_Empire">https://en.wikipedia.org/wiki/Mughal_Empire</a>	
2	<a href="https://www.britannica.com/topic/Mughal-dynasty">https://www.britannica.com/topic/Mughal-dynasty</a>	
3	<a href="http://ndl.iitkgp.ac.in/document/L0RkbGVmMkU0aVJCdjN3WnpQSUh6QWhJd3ZEemVFSEgxRIN5TUU3WWtDZzd3aXdHWktRdVVxMFFPVUZId0VtYg">http://ndl.iitkgp.ac.in/document/L0RkbGVmMkU0aVJCdjN3WnpQSUh6QWhJd3ZEemVFSEgxRIN5TUU3WWtDZzd3aXdHWktRdVVxMFFPVUZId0VtYg</a>	
4	<a href="http://ndl.iitkgp.ac.in/document/R0w0dG1TM1N1ZmlyRDNXUFRLNFhpazQ2eml1SFphNlVmS2YydHVkUXpCTklpcjVCZ2pXbmZycHdsZXNrdlRHaQ">http://ndl.iitkgp.ac.in/document/R0w0dG1TM1N1ZmlyRDNXUFRLNFhpazQ2eml1SFphNlVmS2YydHVkUXpCTklpcjVCZ2pXbmZycHdsZXNrdlRHaQ</a>	
5	<a href="https://www.youtube.com/watch?v=TqbJCUJi_Ak">https://www.youtube.com/watch?v=TqbJCUJi_Ak</a> <a href="https://www.youtube.com/watch?v=9CTF0smmfVg">https://www.youtube.com/watch?v=9CTF0smmfVg</a>	
Course Designed By: <b>Mrs. S.PANDIYALAKSHMI</b> , Assistant Prof. in History, Sri Vasavi College, Erode. E- mail <a href="mailto:ID_sarveskavishs@gmail.com">ID_sarveskavishs@gmail.com</a>		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	S	S	S
CO2	S	S	S	M	M	S	S	S	S	M
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	S	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	CONSTITUTIONAL HISTORY OF INDIA FROM 1773 A.D. TO 1950 A.D.		L	T	F	C
CORE-4			5	-	-	5
Pre-requisite	Basic knowledge of Constitutional development at U.G. level		Syllabus		2021-2022	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To enable the students to learn the fundamental concepts of the constitution and understand the evolution of Indian constitution.						
2. To acquaint the students about their rights and responsibilities as citizens of India.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the provisions of Charter Acts and Government of India Acts passed by the British government and learn about the historical evolution of the Indian Constitution of 1950.					K1
2	Understand the origin and development Republican Government of India.					K2
3	Analyze the historical background of the constitution.					K4
4	Evaluate the importance of Fundamental Rights and Duties.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>CONSTITUTIONAL DEVELOPMENT DURING EAST INDIA COMPANY (1773-1857)</b>				<b>15-- hours</b>	
Regulating Act (1773) – Pitt’s India Act (1784)-Causes, Provisions and Significance-Charter Acts of 1813, 1833, 1853-Provisions and Significance.						
<b>Unit:2</b>	<b>CONSTITUTIONAL DEVELOPMENT UNDER BRITISH CROWN (1857-1919)</b>				<b>15-- hours</b>	
Government of India Act 1858- Indian Council Acts of 1861 and 1892- Minto-Morley Reforms, (1909) and Montague Chelmsford Reforms (1919).						
<b>Unit:3</b>	<b>GOVERNMENT OF INDIA ACT 1935</b>				<b>15-- hours</b>	
Government of India Act (1935): Salient features-Nature of Federal Government-Provincial Autonomy-Its meaning and working-Indian Reactions.						
<b>Unit:4</b>	<b>NATIONAL MOVEMENT AND CONSTITUTION</b>				<b>14-- hours</b>	
Developments during World War II-Cripps Proposals (1942)-Wavell Plan (1945) - Cabinet Mission Plan (1946)-Mountbatten Plans (1947)-Indian Independence Act of 1947.						
<b>Unit:5</b>	<b>FRAMING OF INDIAN CONSTITUTION</b>				<b>14-- hours</b>	
Formation of Constituent Assembly-Drafting Committee-Salient Features of Indian Constitution-Preamble-Fundamental Rights and Duties-Directive Principles of State Policy-Legislature-Judiciary-Judicial Review-Executive.						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars						
Forms of Governments: Monarchy, Anarchy, Aristocracy, Oligarchy, Republicanism, Federalism, Feudalism, Socialism, Totalitarianism, Theocracy, Dictatorship, Bureaucracy, and Democracy						
					<b>Total Lecture hours</b>	
					<b>75-- hours</b>	
<b>Book(s) for study</b>						

1	Agarwal, R.C., <i>Constitutional Development of India and National Movement</i> , S.Chand and Company Ltd, New Delhi, 1999.
2	Austin, Granville., <i>The Indian Constitution</i> , New Delhi, Oxford University Press, 1966.
<b>Book(s) for Reference</b>	
1	Rao, B Shiva., (Ed)., <i>The Framing of India's Constitution: Select Documents</i> , Volume 1, Delhi, Universal Law Publishing Company, 1967.
2	Vishnu Bhagavan, <i>Indian Constitutional Development: 1600 to 1947</i> , Sterling Publishers, Pvt.Ltd, New Delhi, 2001.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	SAKSHAT ( <a href="https://sakshat.ac.in/">https://sakshat.ac.in/</a> )
2	e-PG Pathshala ( <a href="https://epgp.inflibnet.ac.in/">https://epgp.inflibnet.ac.in/</a> )
4	SWAYAM( <a href="https://swayam.gov.in/">https://swayam.gov.in/</a> )
Course Designed By: <b>DR.K.MADHUSUDHARSANAN</b> , Assistant Prof. & HOD of History, Chikkaiah Naicker College, Erode. E-mail ID <a href="mailto:sudharsancnc@gmail.com">sudharsancnc@gmail.com</a>	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>C01</b>	S	S	M	M	M	S	M	M	M	M
<b>C02</b>	S	S	S	S	M	S	M	M	M	M
<b>C03</b>	S	M	M	M	M	S	S	M	M	M
<b>C04</b>	S	M	M	M	M	S	S	M	S	M

\*S-Strong; M-Medium; L-Low

Course code	HISTORY OF INDIAN NATIONAL MOVEMENT SINCE 1885 A.D	L	T	P	C
CORE-5		5	-	-	5
Pre-requisite	Basic knowledge of Indian History at U.G. level	Syllabus		2021-2022	
<b>Course Objectives:</b>					
<ol style="list-style-type: none"> <li>To acquaint the students about the Freedom movement in India since A.D.1885.</li> <li>To understand the factors leading to the rise of Nationalism.</li> <li>To acquire the knowledge of the role of Indian National Congress and the nature of the different movements.</li> <li>To evaluate the role of freedom fighters and their contribution.</li> </ol>					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Acquire in depth knowledge of freedom struggle in India.				K1
2	Understand the factors leading to the rise of nationalism and trace the emergence of Indian National Congress.				K2
3	Contribute to the society by learning principles of non-violence, sathyagraha, service, sacrifice and patriotism.				K3
4	Analyse the implications of Colonialism and Communalism.				K4
5	Evaluate the importance of communal harmony.				K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>EMERGENCE OF NATIONLISM AND THE INDIAN NATIONAL CONGRESS</b>	<b>15-- hours</b>			
Rise of Indian Nationalism –Causes- Birth of the Indian National Congress –various theories- Moderates (1885 to 1905) – Gopala Krishna Gokhale –Birth of Extremist movement- Swadeshi Movement-B.G.Tilak.					
<b>Unit:2</b>	<b>FORMATION OF MUSLIM LEAGUE – REVOLUTIONARY MOVEMENT</b>	<b>15—hours</b>			
Muslim League – Communal Representation-Political Impact-Revolutionaries in Freedom Movement: V.D.Savarkar-Ram Prasad Bismil- Ashfaq Ullah Khan-Sardar Bhagat Singh-Mrs. Annie Besant and Home Rule Movement- Ghadar Movement -Rowlatt Act- Jallianwalabagh Tragedy.					
<b>Unit:3</b>	<b>GANDHIAN ERA</b>	<b>15-- hours</b>			
Khilafat Question-Gandhiji and Non-Co-operation Movement-Swarajist Interlude-Civil Disobedience Movement – Simon Commission -Round Table conferences –Communal Award - Gandhi - Irwin Pact.					
<b>Unit:4</b>	<b>INDIA'S FREEDOM STRUGGLE (1930 – 1940)</b>	<b>14-- hours</b>			
Two Nation Theory - Second World War and the resignation of Congress Ministries in 1939 - Indian National Army - Subash Chandra Bose- August Declaration of 1940					
<b>Unit:5</b>	<b>TOWARDS INDEPENDENCE</b>	<b>14-- hours</b>			
Cripps Mission - Quit India Movement - Cabinet Mission – Direct Action of Muslim League- Communal Strife - Mountbatten Plan – Indian Independence Act - Partition of India and its impact on Indian History.					
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>			

Expert lectures, online seminars – webinars	
	<b>Total Lecture hours</b>
	<b>75-- hours</b>
<b>Book(s) for study</b>	
1	Bipan Chandra, <i>India's struggle for Independence</i> .
2	Mahajan, V.D., <i>Indian Freedom Struggle</i> .
<b>Book(s) for Reference</b>	
1	Ayesha Jalal, <i>Jinnah: The Sole Spokesman</i> , Cambridge University Press.
2	Bipan Chandra, <i>Communalism in Modern India</i> .
3	Bipan Chandra, <i>India's Struggle for Independence</i> , Penguin, 1989.
4	Chattarjee, A.C., <i>India's Struggle for Freedom</i> , Chattarjee & Co., Ltd., Calcutta 1947
5	Desai, A.R., <i>Social Background of Indian Nationalism</i> , Popular Prakashan, Bombay.
6	Gandhi. M.K., <i>The Selected Works of Mahatma Gandh</i> , Ahmedabad, Navajivan Publishing House, 1968.
7	Majumdar, R.C., <i>Three Phases of India's Freedom Struggle</i> , Bombay, Bharatiya Vidya Bhavan, 1961.
8	Mushirul Hasan, <i>Nationalism and Communal Politics in Modern India, 1885-1930</i> , Manohar, Delhi (revised & updated edition).
9	Sekhar Bandyopadhyay, <i>From Plassey to Partition and After</i> .
10	Sumit Sarkar, <i>Modern India 1885-1947</i> (1983).
11	Sumit Sarkar, <i>Swadeshi Movement</i> .
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.swayamprabha.gov.in/index.php/program/archive/2">https://www.swayamprabha.gov.in/index.php/program/archive/2</a> <a href="https://www.youtube.com/embed/AqVh0i8aEwo">https://www.youtube.com/embed/AqVh0i8aEwo</a> <a href="https://www.youtube.com/watch?v=VpIdd5QVpGU&amp;feature=emb_rel_pause">https://www.youtube.com/watch?v=VpIdd5QVpGU&amp;feature=emb_rel_pause</a> <a href="https://www.youtube.com/embed/bD3-OuNNyEk">https://www.youtube.com/embed/bD3-OuNNyEk</a> <a href="https://www.youtube.com/embed/pE_tIQIS9m8">https://www.youtube.com/embed/pE_tIQIS9m8</a> <a href="https://www.youtube.com/embed/N9hwVFI925c">https://www.youtube.com/embed/N9hwVFI925c</a> <a href="https://www.youtube.com/embed/N9hwVFI925c">https://www.youtube.com/embed/N9hwVFI925c</a>
2	<a href="https://www.classcentral.com/course/swayam-history-of-indian-independence-1857-1950-17634">https://www.classcentral.com/course/swayam-history-of-indian-independence-1857-1950-17634</a> <a href="https://nios.ac.in/media/documents/SecSocSciCour/English/Lesson-08.pdf">https://nios.ac.in/media/documents/SecSocSciCour/English/Lesson-08.pdf</a>
3	<a href="https://nios.ac.in/media/documents/SecSocSciCour/English/Lesson-08.pdf">https://nios.ac.in/media/documents/SecSocSciCour/English/Lesson-08.pdf</a>
Course Designed By: <b>K.RADHIKA</b> , Assistant Professor in History, Chikkaiah Naicker College, Erode..E-mail ID <a href="mailto:thiyanesradhika@gmail.com">thiyanesradhika@gmail.com</a>	

Mapping with Programme Outcomes										
Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	L	S	S
CO2	S	M	S	S	M	S	S	L	S	M
CO3	S	S	S	S	M	S	S	L	S	S
CO4	S	S	S	S	M	S	S	L	M	M
CO5	M	S	M	M	M	M	S	L	M	S

\*S-Strong; M-Medium; L-Low



# Second Semester

Course code	SOCIAL AND CULTURAL HISTORY OF TAMIL NADU FROM SANGAM AGE TO 1800 A.D.			L	T	P	C	
<b>CORE-6</b>				5	-	-	5	
<b>Pre-requisite</b>	<b>Basic knowledge of the History of Tamil Nadu</b>			<b>Syllabus rsion</b>		<b>2021- 2022</b>		
<b>Course Objectives:</b>								
The main objectives of this course are:								
<ol style="list-style-type: none"> <li>To learn Ancient History of Tamil Nadu.</li> <li>To know the ethnology of the Tamils and their socio-cultural activities.</li> <li>To provide the knowledge on trade and commerce of the ancient Tamil people.</li> <li>To acquaint the learners about the development of art and architecture in Tamil Nadu.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, students will be able to:								
1	Infer the sources available to study the ancient Tamil History and discuss the cultural life during Sangam Age.						K1	
2	Outline the development of education, religion and architecture during Pallava period.						K2	
3	Assess the influence of temple on social and cultural life of Cholas.						K3	
4	Evaluate the economic life of Pandiyas and spread of Islam in Tamil Nadu.						K5	
5	Compare, contrast and inspect the changes in architecture and development of literature during Pallava, Chola, Pandya, Vijayanagar and Nayaks periods.						K4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>SOURCES AND THE AGE OF SANGAM</b>					<b>15-- hours</b>		
Sources: Archaeology, Epigraphy, Numismatics and Literature – Ethnography-Geography- Sangam Age: Tamil Society and Culture, Position of Women, Religious life, Trade and Commerce, Literature.								
<b>Unit:2</b>	<b>SOCIAL AND CULTURAL LIFE UNDER KALABHRAS AND PALLAVAS</b>					<b>15-- hours</b>		
Kalabhra Interregnum - Influence of Jainism and Buddhism - Pallavas: Social life under the Pallavas, Progress of Education, Contribution of Pallavas to Art and Architecture - Cave Temples: Mamallapuram - Bhakti Movement: Alvars and Nayanmars.								
<b>Unit:3</b>	<b>SOCIETY AND CULTURE UNDER CHOLAS</b>					<b>15-- hours</b>		
Cholas: Society and Culture - Idankai Valankai divisions - Religion-Art and Architecture: Brahadiswa Temple, Role of Temple in Society, Economic Life - Segmentation of lands, Trade Inland and Foreign , Trade Guilds.								
<b>Unit:4</b>	<b>SOCIETY AND CULTURE UNDER PANDIYAS</b>					<b>14-- hours</b>		
Second Pandiya Empire: Society, Art and Architecture, Economic life: Land Classification, Ownership of Land, Features of Feudalism, Coinage and Urbanization - Accounts of Marcopolo - Social and cultural impact of Muslim invasion.								
<b>Unit:5</b>	<b>TAMIL SOCIETY UNDER VIJAYANAGAR AND NAYAKS</b>					<b>14-- hours</b>		
Tamilagam under Vijayanagar and Nayaks: Social and Religious condition, Economic Life: Agriculture and Trade, Contribution to Art and Architecture, Literature.								

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Recent Excavation, Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for study</b>		
1	Pillay K.K., <i>Social History of the Tamils</i> , Madras University, Madras, 1975	
2	Subramanian, N., <i>Social and Cultural History of TamilNad</i> , 9 <sup>th</sup> ed, Ennes Publications, Udumalpet, 2005.	
3	<i>Monographs</i> , (Alvars, Nayanmars) Sahitya Academi (National Academy of Letter), An Autonomous Organisation of Government of India, Ministry of Culture.	
<b>Book(s) for Reference</b>		
1	Burton Stein, <i>Peasant state and society in Medieval South India</i> , Oxford University Press, Delhi, 1999.	
2	Mahalingam T.V., <i>Economic life in the Vijayanagar Empire</i> , Madras University, Madras, 1951.	
3	Minakshi C., <i>Administration and social life under the Pallavas</i> , Madras, 1977.	
4	Neelakanta Sastri K.A., <i>The Colas</i> , University of Madras, 1975	
5	Neelakanta Sastri K.A., <i>Social History of South India</i> , Oxford university press Madras, 1980.	
6	Sathyanatha Aiyar R., - <i>History of the Tamils</i> , Madras University, Madras, 1975.	
7	Shanmugam P., <i>The Revenue System under the Cholas</i> , New Era, Madras, 1924.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/History_of_Tamil_Nadu">https://en.wikipedia.org/wiki/History_of_Tamil_Nadu</a>	
Course Designed By: <b>DR.R.SHANGAMESWARAN</b> , Assistant Professor in History, Chikkanna Government Arts College, Tirupur. E-mail ID <a href="mailto:Shangamesh75@gmail.com">Shangamesh75@gmail.com</a>		

Course code	SOCIAL AND CULTURAL HISTORY OF TAMIL NADU FROM 1800A.D. TO 1916 A.D.		L	T	P	C
CORE-7			3	1	-	4
Pre-requisite	Basic knowledge of history of Tamil Nadu at U.G. level.		Syllabus revision		2021-2022	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1. To acquire the knowledge about sources, facts, events, ideas and thoughts of the period.						
2. To develop an understanding of the social issues, disgusting customs and the social reforms in Tamil Nadu.						
3. To inculcate the ability of critical and rational thinking.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Recall the sources, facts, events, ideas and personalities.					K1
2	Understand and acquire an indepth knowledge of the social life in Tamil Nadu during 19 <sup>th</sup> Century.					K2
3	Apply a humanitarian approach towards all social problems.					K3
4	Analyze the impact of western system of education in Tamil Nadu.					K4
5	Evaluate and appreciate the role of reforms movements.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>TAMIL SOCIETY IN 19<sup>TH</sup> CENTURY</b>				<b>15-- hours</b>	
Sources: Archival- Institutional papers –Private papers –Literature –Folklore-Newspapers and Journals-Social condition-Caste system and conflicts-Social Evils-Position of Women-Devadasi System-Impact of Western Culture-Religion in 19 <sup>th</sup> century Tamil Nadu-Hinduism, Islam and Christianity.						
<b>Unit:2</b>	<b>UNDERSTANDING ECONOMY IN SOCIAL TERMS</b>				<b>15-- hours</b>	
Land Tenure- Zamindari and Ryotwari Systems – Economic conditions- Agriculture and Industry during colonial period –Landlords –Peasants-Small tenant–Trading classes-Rise of Indigenous Commercial Elite –the Dubashies-Labourers-Commercialization of Agriculture-Famine of 1876 and its impact.						
<b>Unit:3</b>	<b>EDUCATION IN TAMIL NADU</b>				<b>15-- hours</b>	
Indigenous Institutions of learning –Introduction of Western Education –Munro’s Scheme of Education – Contribution of Christian Missionaries in field of Education -Education of Depressed classes-University of Madras.						
<b>Unit:4</b>	<b>SOCIO-RELIGIOUS REFORM MOVEMENTS</b>				<b>14-- hours</b>	
St. Ramalinga and his teachings-Sudha Sanmarga Sangam- Vaikundasamy and his teachings-Theosophical Society-Ramakrishna Mission- Ayothidasar						
<b>Unit:5</b>	<b>LITERATURE AND POLITICAL ASSOCIATIONS</b>				<b>14-- hours</b>	
Vedanayagam Pillai-U. V. Swaminatha Iyer-Robert Caldwell-G. U. Pope-Emergence of political association-Madras Native Association-Madras Mahajana Sabha.						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars						

	Total Lecture hours	75-- hours
<b>Book(s) for study</b>		
1	Devanesan, A., <i>History of Tamilnadu</i> , Renu Publication, Marthandam, 1997.	
2	Jayabalan, N., <i>Social and Cultural History of Tamil Nadu</i> .	
3	Nadarajan.C., <i>Social History of Modern Tamilnadu</i> , Ulaga Tamizhppadaippalar Nool Veliyeetagam, Trichy, 2013.	
4	Nilakanta Sastri, K.A., <i>A History of South India: From Prehistoric Times to the Fall of Vijayanagar</i> , New Delhi: Oxford University Press, 2000.	
5	Rajjayan, K., <i>A Real History of Tamil Nadu, Upto 2004 A.D.</i> , Trivandrum, 2005.	
6	Subramanian, N., <i>Social and Cultural History of Tamilnadu, 1336 to 1984</i> , Ennes Publication, Udumalpet.	
<b>Book(s) for Reference</b>		
1	Berekley Beck, B.E.F, "The Right –left Division of South Indian Society" journal of Asian studies xxix:4, 1970.	
2	Beteille, Acaste, <i>Class And Power: Changing Patterns Of Stratification In A Thanjavur Village</i> , 1965.	
3	Jeevanandam, S., & Rekha Pande, <i>Devadasis in South India: A Journey from sacred to a Profane Spaces</i> .	
4	Kumar, D., <i>Land And Caste In South India, Agriculturallabour In The Madras Presidency During Nineteenth Century</i> , Cambridge, (1965).	
5	Mahalingam, A., <i>Land, Society and Art in Tamil Nadu</i> .	
6	Mepheron, K.(1969) "The Social Background And Politics Of The Muslims Of Tamilnadu 1901-1937", Indian Social and Economic History Review, Vol 4.	
7	Mohan ,P.E., <i>Scheduled Castes:History of Elevation</i> ,Tamil Nadu 1900-1995, Madras, New Era, 1993.	
8	Paramarthalingam, C., <i>Social Reform Movement in Tamil Nadu in the 19th Century with Special Reference to St. Ramalinga</i> , Rajakumari Publications, Tamil Nadu, 1995.	
9	Pillay, K.K., <i>Social History of the Tamils</i> , University of Madras, 1975.	
10	Rajendran,N., <i>Agitation Politics and State Coercion</i> , National Movement in Tamilnadu, 1905-1914, Oxford University Press, Madras, 1994.	
11	Saskia C.Kersenboom, <i>Nityasumangali: Devadasi Tradition in South India</i> .	
12	Sivagnanam, M.P., <i>Vallalar Kanda Orumaipadu (Tamil)</i> , Inba Nilayam, Madras, 1967.	
13	Sobhanan, <i>Temple Entry Movement and Sivakasi Riots</i> , Madurai.	
14	V.T.Chellam, <i>History and Culture of Tamilnadu</i> , Manivasagar Publication, Chennai, 2006.	
15	Varghese Jeyaraj, S., <i>Socio-Economic History of Tamilnadu</i> .	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	Devadasis- <a href="http://www.samarthbharat.com/files/devadasihistory.pdf">http://www.samarthbharat.com/files/devadasihistory.pdf</a> <a href="https://en.wikipedia.org/wiki/Devadasi#External_links">https://en.wikipedia.org/wiki/Devadasi#External_links</a> ,	
2	<a href="https://en.wikipedia.org/wiki/Periyar_E._V._Ramasamy">https://en.wikipedia.org/wiki/Periyar_E._V._Ramasamy</a> <a href="https://en.wikipedia.org/wiki/Iyothee_Thass">https://en.wikipedia.org/wiki/Iyothee_Thass</a>	
	<a href="https://en.wikipedia.org/wiki/Rettamalai_Srinivasan">https://en.wikipedia.org/wiki/Rettamalai_Srinivasan</a>	
4	<a href="http://egyankosh.ac.in/handle/123456789/21055">http://egyankosh.ac.in/handle/123456789/21055</a> Theosophical Society- <a href="https://www.ts-adyar.org/">https://www.ts-adyar.org/</a> Ramakrishna mission - <a href="https://chennai.math.org/">https://chennai.math.org/</a>	

1. Course Designed By: **DR. S.Z NIAZUDEEN**, Assistant Professor in History, Sri Vasavi  
College, Erode. niazudeensz78@gmail.com

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	M	M	S	M	M	M
<b>CO2</b>	S	S	S	S	M	S	M	S	M	S
<b>CO3</b>	M	S	S	S	M	S	S	M	M	S
<b>CO4</b>	S	S	S	S	M	S	S	M	M	M
<b>CO5</b>	S	S	S	S	M	S	S	M	S	S

\*S-Strong; M-Medium; L-Low

Course code	PANCHAYAT RAJ		L	T	P	C
<b>CORE-8</b>			4	-	-	4
<b>Pre-requisite</b>	A basic knowledge local self government in Indian History		<b>Syllabus</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
<ol style="list-style-type: none"> <li>1. To familiarize the students with the self governing Institutions in India.</li> <li>2. To understand the political aspects affecting the rural people.</li> <li>3. To make the students aware of the various local self institutions, their functions, compositions and importance.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, students will be able to:						
1	Remember the facts, terms and history of Panchayat Raj system in Tamilnadu.					K1
2	Understand the origin of Panchayat Raj System in India.					K2
3	Analyse the functioning of Panchayat Raj system in Independent India.					K4
4	Evaluate the contributions of self governing institutions for upliftment of the rural masses.					K5
5	Judge the working of Panchayat Raj system in India at its grass root level and the benefit of welfare schemes.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>ORIGIN OF PANCHAYAT RAJ</b>				<b>15-- hours</b>	
Evolution, Meaning, Features and Significance. – Local Administration under the Mauryas – Manrams and Kuttambalams in Ancient Tamil Nadu – Local self government under the Cholas, the Pandyas and the British .						
<b>Unit:2</b>	<b>PANCHAYAT RAJ AFTER INDEPENDENCE</b>				<b>15-- hours</b>	
Mahatma Gandhi's Concept of Panchayat Raj – Vinobhaji's Views on Gramodhan and Boothan Movement – Committees on Panchayat Raj after independence – 73rd and 74th Constitutional Amendments-Nagar Palikas –. Structures and functions of Village Panchayat, Panchayat Union and District Panchayat – Municipalities and corporation ,Notified Area committee,Town Area Committee ,Cantonment Board, Township						
<b>Unit:3</b>	<b>PANCHAYAT RAJ SYSTEM IN TAMIL NADU</b>				<b>15-- hours</b>	
Panchayat Raj system from 1687 to 1920 – Action of the British Government between 1920 – 1947 Subsequent changes from 1947 to Present day – Constitutional Assembly – Debates on Panchayat Raj – Two Tier system under Kamaraj and Direct Election under MGR .						
<b>Unit:4</b>	<b>CENTRAL RURAL DEVELOPMENT PLANS</b>				<b>14-- hours</b>	
Integrated Rural Development Programme (IRDP) –Training of Rural Youth for Self Employment (TRYSTEM) – Development of Women and children in Rural Areas (DWACRA) – Jawahar Rozhgar Yojana, Jawahar Gram Samridhi Yojana						

<b>Unit:5</b>	<b>STATE RURAL DEVELOPMENT PLANS</b>	<b>14-- hours</b>
Anna Marumalarchi Plan -Namaku Namey Plan - Kalaingar Housing Scheme -Pasumai Housing Plan –Member of State Legislative Assembly Constituency Development Scheme – Samathuvapuram –Ulavar Sandhai – Biogas Plan.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Battacharya, B., <i>Urban Development in India</i> , Shree Publishing House: Delhi, 1979.	
2	Kuldeep Mathur, <i>Panchayati Raj: Oxford India Short Introductions</i> (Delhi: OUP India, 2013)	
3	Maheswari S.R. and Sri Rammaheswari, <i>Local Self Government in India</i> , Orient Longman, New Delhi, 1971.	
4	Raghava Rao, D.V., <i>Panchayat and Rural Development</i> .	
<b>Book(s) for Reference</b>		
1	Gandhi, M.K., <i>Panchayati Raj</i> , Navjeevan Publishing House, Ahmedabad, 1959.	
2	Sivasankaran S., and Selvakumar D., <i>Panchayat Rajyam</i> , New Century Book House Chennai, 2007.	
3	Venkataranagaiah M., and Pattabhiram M., <i>Local Government in India :Select Readings</i> , Allied publications, New Delhi, 1969.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Local_government_in_India">https://en.wikipedia.org/wiki/Local_government_in_India</a>	
2	<a href="http://mospi.nic.in/sites/default/files/Statistical_year_book_india_chapters/local_bodies.pdf?download=1">http://mospi.nic.in/sites/default/files/Statistical_year_book_india_chapters/local_bodies.pdf?download=1</a>	
3	<a href="https://www.youtube.com/watch?v=CuqrIXnbJt4">https://www.youtube.com/watch?v=CuqrIXnbJt4</a>	
Course Designed By: <b>Prof.R.PRAKASH</b> , Assistant Professor in History, Sri Vasavi College ,Erode.E- mail ID prakashero80@gmail.com		

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	M	M	M
CO2	S	M	S	S	M	S	S	M	M	M
CO3	M	M	S	S	M	S	M	M	M	M
CO4	S	M	S	S	M	M	M	M	M	S
CO5	S	M	S	S	M	S	S	M	M	S

\*S-Strong; M-Medium; L-Low



Course code	HISTORY OF KONGU NADU			L	T	P	C	
<b>CORE-9</b>				<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>	
<b>Pre-requisite</b>	<b>Pass in any degree and basic knowledge in regional history</b>			<b>Syllabus</b>		<b>2021-2022</b>		
<b>Course Objectives:</b>								
The main objectives of this course are to:								
1. Impart regional history to the students. 2. Introduce the social and cultural life of the people of KonguNadu. 3. Make the students to understand the economic development in Kongu Nadu.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember the historical events that happened in Kongu region.						K1	
2	Understand the history of Kongu Nadu under the rule of various dynasties.						K2	
3	Construct an idea about Kongu region as a distinct part of Tamil Nadu in its culture.						K3	
4	Identify the important cities and towns and analze their historical significance.						K4	
5	Evaluate and recognize economic development of Kongu Nadu.						K5	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create								
<b>Unit:1</b>	<b>FEATURES OF KONGU NADU</b>					<b>15 hours</b>		
Sources for the study of Kongu Nadu – Pre-historical sites – Literary – Epigraphical sources - Geographical features of Kongu Nadu – Political Geography – Roman Trade - Trade Routes – Trading Centers – Recent Discoveries.								
<b>Unit:2</b>	<b>SANGAM AGE TO VIJAYANAGAR RULERS</b>					<b>15 hours</b>		
History of Kongu Nadu from Sangam Age to Vijayanagar rulers – Cheras – Vira Keralas – Ratta-Ganga – Pallava Pandiya Struggle – Art and Culture of Kongu Cholas – Pandyas and Vijayanagar rulers.								
<b>Unit:3</b>	<b>KONGU NADU UNDER VARIOUS RULERS</b>					<b>15 hours</b>		
Kongu Nadu under Nayak rule –Ketti Mudali - Kongu Nadu under Hyder Ali- Tippu Sultan – British occupation of Kongu Region – Freedom Struggle in Kongu Region – Important Forts.								
<b>Unit:4</b>	<b>SOCIO-ECONOMIC DEVELOPMENT</b>					<b>14 hours</b>		
Socio Economic and Religious Condition of the people of Kongu Nadu through the ages - Growth of Education-Industry in Kongu Nadu.								
<b>Unit:5</b>	<b>AGRICULTURAL DEVELOPMENT</b>					<b>14 hours</b>		
Condition of peasants - Agriculture and Irrigational development - Important cities and towns in Kongu Region in the Modern Period.								
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>		
Expert lectures, online seminars– webinars								

		Total Lecture hours	75 hours
<b>Book(s) for Study</b>			
1	Arokiaswamy M., <i>The Kongu Country</i> , University of Madras, 1956.		
2	Kovaikizhar, <i>Kongu Nattu Varalaru</i> (in Tamil), Centenarycelebrations of Kovaikizhar, Coimbatore, 1987.		
3	Karuppusamy, G., <i>Kongu Nattin Varalaru</i> , (Tamil) Abinaya Press, Chithode, Erode, 2020.		
<b>Book(s) for Reference</b>			
1	Manickam, V., <i>A History of Kongunadu upto 1400 A. D</i> (in English & in Tamil), Makal Veliyeedu, Chennai, 2001.		
2	Rajan K., <i>Archaeology of Coimbatore District</i>		
3	Ramamoothy, V., <i>The History of Kongu, (Part-I Pre-Historic period to 1300 A.D, International Society for the Investigation for Ancient Civilization, Madras, 1986.</i>		
4	Vaidyanathan. K. S., <i>Ancient Geography of the Kongu Country</i> , Govt of India, Department of Culture, 1983.		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>			
1	<a href="https://en.wikipedia.org/wiki/Kongu_Nadu">https://en.wikipedia.org/wiki/Kongu_Nadu</a>		
2	<a href="https://shodhganga.inflibnet.ac.in/bitstream/10603/17424/8/08_chapter%202.pdf">https://shodhganga.inflibnet.ac.in/bitstream/10603/17424/8/08_chapter%202.pdf</a>		
3	<a href="https://www.youtube.com/watch?v=HVIQO9-hVYE">https://www.youtube.com/watch?v=HVIQO9-hVYE</a>		
4	<a href="https://www.youtube.com/watch?v=O0L8kmcGa3c">https://www.youtube.com/watch?v=O0L8kmcGa3c</a>		
Course Designed By: <b>DR. MATHIALAGAN</b> , Associate Prof. of History, Govt. Arts College, Udumalpet. E- mail ID alaganudt@ gmail.com			

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	S	S	M
CO2	S	S	S	S	S	M	M	S	S	M
CO3	S	S	S	S	M	S	M	M	M	M
CO4	S	S	S	S	M	S	M	S	M	M
CO5	S	M	S	S	M	M	M	M	M	M

\*S-Strong; M-Medium; L-Low

Course code	CONTEMPORARY HISTORY OF INDIA FROM 1947 A.D. TO 2014 A.D.		L	T	P	C
CORE-10			4	-	-	4
Pre-requisite	Basic knowledge of Indian History at U.G. level		Syllabus rsion		2021- 2022	
<b>Course Objectives:</b>						
The main objectives of this course are :						
1. To acquaint the learners about the Indian Constitution.						
2. To familiarize with centre - state relations and emergence of regional parties.						
3. To give insight about popular movements and coalition era politics.						
4. To make them understand the major problems faced by Indian Democracy.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Recall the political events since Independence.					K1
2	Understand the Centre - State Relations and rise of regional parties.					K2
3	Assess the significance of popular movements after Independence.					K3
4	Analyse the reservation policy, New Economic policy and the impact of Science & Technology.					K4
5	Evaluate the major issues that challenge Indian democracy.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>NEHRU ERA</b>				<b>15-- hours</b>	
Making of Parliamentary Democracy-Issues and Challenge of Independent India-Integration of India-Sardar Vallabhbhai Patel-Linguistic Re organization of States-Nehruvian Democratic Socialism-Mixed Economy-Planning –Agricultural and Industrial growth –Kashmir issue.						
<b>Unit:2</b>	<b>POLITICAL DEVELOPMENTS IN INDIA</b>				<b>15-- hours</b>	
Political Development in India –Sub Nationalism –Centre –State Relations –Emergence of Regional parties –Dravidian parties –Anti Hindi Agitation –Telugu Desam –Shiromani Akali Dal –Punjab crisis –State Autonomy -Sarkaria Commission-Article 356 of Indian Constitution.						
<b>Unit:3</b>	<b>POPULAR MOVEMENTS</b>				<b>15-- hours</b>	
Popular Movements –Bhoodan Movement –Agrarian Struggles-Zamindari Abolition - Jayaprakash Narayan and Total Revolution –Dalit’s Assertion –Dr.B.R.Ambedkar –Jyothiba Phule –Trade unions and popular strikes –Prohibition movement (Tamilnadu) –Anti Corruption Movement.						
<b>Unit:4</b>	<b>COALITION ERA POLITICS</b>				<b>14-- hours</b>	
Coalition Era Politics –Mandal Commission –New Economic Policy –Globalization and its impact –Emergence of Corporates-Modern Indian Media –Right to Information Act –Intelligentsia –AmartyaSen-Science and Technology –Dr.M.S.Swaminathan –Dr .A.P.J.AbdulKalam.						

<b>Unit:5</b>	<b>CHALLENGES TO INDIAN DEMOCRACY</b>	<b>14-- hours</b>
Challenges to Indian Democracy :Terrorism –Corruption –Pseudo Secularism –Religious Fundamentalism –Communalism and Casteism –Political violence –Water Crisis –Inter –State Water Disputes –Cauvery–problems of Peasants-Population and Problems of Urban Poor-Poverty-Illiteracy-Gender Discrimination.		
<b>Unit:6</b>	<b>CONTEMPORARY ISSUES</b>	<b>2 hours</b>
Water Disputes, Problems of Peasants, Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Bipan Chandra, Mridula Mukherjee and Aditya Mukherjee, <i>India since Independence</i> , Penguin Books India, New Delhi, 2008.	
2	Venkatesan, K., <i>History of Contemporary India</i> , V C Publications, Rajapalayam, 2012	
<b>Book(s) for Reference</b>		
Bates, Crispin, and Subho Basu, <i>The Politics of Modern India since Independence</i> , Routledge/Edinburgh South Asian Studies Series, 2011.		
Bras, Paul., <i>The Politics of India since Independence</i> , 2 <sup>nd</sup> edition, Cambridge University Press, 1994.		
Gopal, S., <i>Jawaharlal Nehru - A Biography</i> , Oxford University Press, 2011.		
Guha, Ramachandra, <i>India After Gandhi ,The History of the World`s Largest Democracy</i> , Pan Macmillan, 2011.		
Kapila, Uma(Ed), <i>Indian Economy Since Independence</i> , 30 <sup>th</sup> ed, Academic Foundation, 2019.		
Subhash C.Kashyap, <i>Our Constitution</i> , 2 <sup>nd</sup> ed, National Book Trust, India, 2011.		

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://swayam.gov.in/nd2_cec20_hs05/preview">https://swayam.gov.in/nd2_cec20_hs05/preview</a>
2	<a href="https://en.wikipedia.org/wiki/History_of_the_Republic_of_India">https://en.wikipedia.org/wiki/History_of_the_Republic_of_India</a>
Course Designed By: <b>DR.R.SHANGAMESWARAN</b> , Assistant Professor of History, Chikkanna Government Arts College, Tirupur. E-mail ID <a href="mailto:Shangamesh75@gmail.com">Shangamesh75@gmail.com</a>	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	L	S	M
CO2	S	M	S	S	M	S	S	L	S	M
CO3	S	S	S	S	M	S	S	L	S	M
CO4	S	S	S	S	M	S	S	L	S	M
CO5	S	M	S	S	M	S	S	L	M	M

\*S-Strong; M-Medium; L-Low

# Third Semester

Course code	<b>HISTORY OF ANCIENT CIVILIZATION UP TO 476 A.D. (EXCLUDING INDIA)</b>		L	T	P	C
<b>CORE-11</b>			4	-	-	4
<b>Pre-requisite</b>	<b>Basic knowledge of World History at U.G. level.</b>		<b>Syllabus rsion</b>		<b>2021- 2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1. To acquaint the learners about the early history of the world.						
2. To understand the Human Evolution.						
3. To study the salient features of Ancient Civilizations.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Acquire the knowledge of the early History of the World.					K1
2	Understand the impact of geographical features on history.					K2
3	Identify and construct and idea about the tools used by the Stone Age men.					K3
4	Compare and contrast the society and culture of different civilization.					K4
5	Recognise the contribution of different civilizations.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>PRE-HISTORIC CIVILIZATION</b>				<b>15 hours</b>	
Origin of the Earth – Human Evolution and Migration – Civilization and Culture – Pre-historic civilization – Paleolithic and Neolithic civilization – Egyptian civilization.						
<b>Unit:2</b>	<b>MESOPOTAMIAN CIVILIZATIONS</b>				<b>15 hours</b>	
Salient features of Sumerian civilization – Babylonian civilization – Hammurabi Code of Law- Assyrian civilization.						
<b>Unit:3</b>	<b>HEBREW CIVILIZATION</b>				<b>15 hours</b>	
Salient features of Hebrew civilization - Phoenician civilization – Persian civilization.						
<b>Unit:4</b>	<b>GREEK &amp; ROMAN CIVILIZATION</b>				<b>14 hours</b>	
Aegean civilization – Greek civilization – Socrates and Aristotle – Roman civilization and its Legacy.						
<b>Unit:5</b>	<b>CHINESE &amp; AMERICAN CIVILIZATION</b>				<b>14 hours</b>	
Chinese civilization – Confucius - Mayan civilization – Azteches and Incas civilization.						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars.						
					<b>Total Lecture hours</b>	<b>75 hours</b>
<b>Book(s) for study</b>						
1	Davis, A.G., <i>History of the World</i> , OUP, Calcutta, 1974.					
2	Joshi, P.S. Pradhan, Kaisre, J.V., <i>Introduction to Asian Civilizations upto A.D.1000</i> , S Chand & Co, Ramnagar, New Delhi.					

<b>Book(s) for Reference</b>	
1	Majumdar, R. K. Srivastava, A.N., <i>History of World Civilizations</i> , SBD Publishers and distributors, 4075, Nai Sarak, Delhi.
2	McNeil and Burns, <i>A World History</i> , OUP, New York, 1965, Ed-I.
3	McNeill, W.H, & Sedler, <i>The Origin of Civilizations</i> , OUP, New York.
4	Ralph, Burns and others, <i>World Civilization</i> , Vol.I, 2011.
5	Swain, J.E., <i>A History of World Civilizations</i> , Eurasia Publishing House, New Delhi.
6	Vishal, Sood, <i>Ancient Civilizations of the World</i> , APH, Publishing Corporation, 2012.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=uHUTbq-j0UU">https://www.youtube.com/watch?v=uHUTbq-j0UU</a>
2	<a href="https://en.wikipedia.org/wiki/sumer">https://en.wikipedia.org/wiki/sumer</a>
3	<a href="https://www.youtube.com/watch?v=JFq0mq-KtaE">https://www.youtube.com/watch?v=JFq0mq-KtaE</a>
Course Designed By: Mr. M. THANGAVEL, Asst. Prof. of History, Sri Vasavi College, Erode. E-mail ID thangavelhistoryvc@gmail.com.	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	M	M	S	M	M
CO2	M	M	S	S	M	M	L	L	L	L
CO3	S	S	S	S	M	S	S	S	S	S
CO4	S	S	S	S	M	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	<b>HISTORY OF MEDIEVAL CIVILIZATION FROM 476 A.D. TO 1453 A.D.</b>		L	T	P	C
<b>CORE – 12</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge of Civilizations</b>		<b>Syllabus rsion</b>		<b>2021- 2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1. To teach and explore the medieval history from the downfall of Imperial Rome to the conquest of Constantinople by Turks covering a variety of historical aspects of the period and cultures, including Roman, Byzantine, Gothic, Frankish, Islamic and others.						
2. To impart the social, cultural and political perceptions and influence of Christianity and Islam on world civilization.						
3. To acquaint the student about the evolution of social hierarchy of rulers, aristocracy, peasants, townspeople, and clergy in the medieval period.						
4. To learn about the growth of cities, economic structures, art and architecture, evolved in medieval Europe.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember and think critically about the development of nationalities and people politically, socially, and economically in medieval times.					K1
2	Understand the changing social and political role of religions in Medieval society and how mixing of religion with politics leads to fragmentation of polity and society.					K2
3	Analyze the assimilation and transformation of culture and science and acquire the historical awareness of human experience in relation to place and time.					K4
4	Trace the evolution of political systems and religions and evaluate their contribution to world civilization.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>BARBARIAN INVASIONS</b>				<b>15-- hours</b>	
Barbarian Invasions – Causes for the fall of Roman Empire – Barbarian settlements in Western Europe – Franks, Visigoths, Ostrogoths- Vandals, Anglo-Saxons – Byzantine Empire – Justinian-Code of Laws- Contribution to culture.						
<b>Unit:2</b>	<b>CHRISTIANITY AND ITS IMPACT</b>				<b>15-- hours</b>	
Rise of Christianity – Teachings of Jesus – Church in the Middle Ages – Monasticism – St. Benedict-Contribution of Christianity to Medieval Civilization.						
<b>Unit:3</b>	<b>THE HOLY ROMAN EMPIRE</b>				<b>15-- hours</b>	
Holy Roman Empire – Charlemagne – Carolingian Renaissance – Struggle between the Empire and the Papacy – Schism – Restoration of the Papacy – John Huss						
<b>Unit:4</b>	<b>BIRTH OF ISLAM AND ITS IMPACT</b>				<b>14-- hours</b>	
Rise of Islam –Contribution of Islam to Medieval Civilization – Crusades –Causes-Results- Muslims in Spain						



<b>Unit:5</b>	<b>MEDIEVAL SOCIETY AND CULTURE</b>	<b>14-- hours</b>
Medieval Society-Feudalism-Merits and Demerit-Growth of cities and towns – Guilds – Education in the middle ages – Rise of Universities – Art and Architecture in the middle ages.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for study</b>		
1	Henri Pirenne, <i>Economic and Social History of Medieval Europe</i> , London, 1949.	
2	Ramalingam, T.S., <i>History of Europe from 476 A.D. to 1453 A.D.</i> ,	
3	Swain J.E., <i>History of World civilization</i> , Eurasia Publishing House Pvt. Ltd., New Delhi, 1984.	
<b>Book(s) for Reference</b>		
1	Davis, A.G., <i>History of the World</i> , OUP, Calcutta, 1974.	
2	Marc Bloch, <i>Feudal Society</i> , London, 1961.	
3	McNeil and Burns, <i>A World History</i> , OUP, New York, 1965, Ed-I.	
4	South Gate, H.W., <i>A History of Europe Vol. I to V</i> , Aldine Press, New Delhi, 1966, Ed.I.	
5	Will Durant, <i>Age of Faith</i> , Simon Publishers, New York , 1966, Ed,II.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.britannica.com/event/Middle-Ages">https://www.britannica.com/event/Middle-Ages</a>	
2	<a href="https://en.wikipedia.org/wiki/Middle_Ages">https://en.wikipedia.org/wiki/Middle_Ages</a>	
2. Course Designed By: <b>Dr.S.ZNIAZUDEEN</b> , Assistant Professor, Sri Vasavi College, Erode  niazudeensz78@ gmail.com		

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	M	M	M	M
CO3	S	S	S	S	M	S	S	M	S	S
CO3	S	S	S	S	M	S	S	S	S	S
CO4	S	S	S	S	M	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	HISTORIOGRAPHY: THEORY AND METHODS	L	T	P	C
CORE-13		4	-	-	4
Pre-requisite	Basic knowledge of history at U.G. level	Syllabus revision		2021-2022	
<b>Course Objectives:</b>					
The main objectives of this course are:					
1. To acquaint the learners about the history of historiography.					
2. To enable the students to learn the major research methods of the discipline.					
3. To acquire proficiency in the art of history writing.					
4. To make students to formulate judgments in terms understanding, analyzing, and evaluating evidence.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Remember the various definitions and terminologies of History.				K1
2	Understand the meaning of history and acquire the knowledge of history of historiography.				K2
3	Apply the concepts of history in future historical research and will offer explanations about analytical historical writings.				K3
4	Able to extract the evidence from primary and secondary sources to evaluate them in historical context.				K4
5	Create an idea of recent trends in historiography.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>					
<b>Unit:1</b>	<b>INTRODUCTION TO HISTORY</b>	<b>15-- hours</b>			
Definition of History – Nature and Scope of History – History –An Art or Science – Uses and abuses of history –Branches of history-Ancillary Sciences-Archaeology-Anthropology-Other aids to History: Palaeography, Epigraphy, Numismatics.					
<b>Unit:2</b>	<b>ANCIENT HISTORIOGRAPHY</b>	<b>15-- hours</b>			
Origins of Historical narrative-Greek historiography – Herodotus and Thucydides – Roman historiography – Livy and Tacitus.					
<b>Unit:3</b>	<b>CONCEPTS OF HISTORY</b>	<b>15-- hours</b>			
Philosophy of History (concepts only) – Historical Materialism-Positivism – Annales School –Structuralism – Subaltern studies – Modernism – Post Modernism.					
<b>Unit:4</b>	<b>METHODOLOGY OF HISTORICAL WRITING</b>	<b>14-- hours</b>			
Methodology : Preliminary operations –Source-Primary and Secondary- Analytical operations – -Objectivity and Subjectivity in historical writing-Methods of Referencing-Foot Notes-Preparation of Bibliography-Concluding operations.					
<b>Unit:5</b>	<b>INDIAN HISTORIOGRAPHY</b>	<b>14-- hours</b>			
Kalhana-Ibn khaldun–Barani-Abul Fazal- R.C. Dutt-D.D Kousambi-Romila Thapar- Ranajit Guha -Krishnasamy Iyengar – K.A.N.Sastri –Sathyathaiyer, N.Subramanian.					

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Internet History-Digital Sources-Authenticity-Environmental History		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
Rajayyan, K., <i>A Study in Historiography: History in Theory and Method</i> , 4 <sup>th</sup> ed. Rathna Publication, Dindugal, 1988.		
Shiek Ali, B., <i>History: Its Theory and Method</i> , 2 <sup>nd</sup> ed. Macmillan, New Delhi, 1981.		
Subrahmanian, N., <i>Historical Research Methodology</i> , ENNES Publications, Madurai, 1980.		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	M	S	M	S	S
<b>CO2</b>	S	S	S	S	S	M	S	L	S	S
<b>CO3</b>	S	S	S	S	S	M	S	L	S	S
<b>CO4</b>	M	M	S	S	S	L	S	L	S	S
<b>CO5</b>	S	L	S	S	S	L	S	L	M	S

\*S-Strong; M-Medium; L-Low

Course code	HISTORY OF FAR EAST FROM 1800 A.D. TO 1989 A.D.			L	T	P	C
CORE-14				4	-	-	4
Pre-requisite	Basic knowledge of world history at U.G. level			Syllabus	2021-2022		
<b>Course Objectives:</b>							
The main objectives of this course are:							
<ol style="list-style-type: none"> <li>To acquaint the learners about the intrusion of the westerners in the east and its repercussions.</li> <li>To know about the ideas and influence of leaders who emerged out during the period.</li> <li>To enable the students to know about Chino-Japanese relations, the rise of Communism, Militarism and its impact on foreign relations.</li> <li>To present the impact of World Wars and the aftermath of atomic bombings of Japan.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the historical events and interpret them in historical context.						K1
2	Understand the impact of world wars on China and Japan, Rise of Communism in China and the ideological impact, emergence of China and Japan in Modern world.						K2
3	Analyze the interconnection of global events and their effect on nations.						K4
4	Evaluate the causalities of wars and the good fortune of peace that made Japan an economic power.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>CHINA AND THE INTRUSION OF WEST</b>					<b>15-- hours</b>	
China under the Manchus –Opium Wars –Causes- Commercial treaties –Sphere of influence- The Taiping Rebellion.							
<b>Unit:2</b>	<b>OPENING OF JAPAN TO THE WEST</b>					<b>15-- hours</b>	
The Tokugawa Shogunates in Japan – The opening of Japan to the West – The Meiji Restoration – Social and economic development of Japan – Japanese Constitution.							
<b>Unit:3</b>	<b>POLITICAL UPHEALS IN FAR EAST</b>					<b>15-- hours</b>	
The Sino – Japanese War of 1894-95 - the Reform Movement in China – the Boxer Rebellion – the Russo – Japanese War of 1904 – 05 – Chinese Revolution of 1911 – Yuan Shikai – Dr. Sunyatsen – Kuomintang party-Nationalism in Burma-Indonesia.							
<b>Unit:4</b>	<b>FIRST WORLD WAR AND ITS IMPACT</b>					<b>14-- hours</b>	
Nationalism in Indo-China-The First World War – Growth of Chinese Nationalism – Rise of Militarism in Japan – Chiangkai Shek – Manchurian Crisis – Sino – Japanese War of 1937-41.							
<b>Unit:5</b>	<b>SECOND WORLD WAR AND IDEOLOGICAL IMPACT</b>					<b>14-- hours</b>	
Role of Japan and China in the Second World War – Allied occupation of Japan –Recovery of Japan – Liberalization & Democratization- The People’s Government of Peking – China under Mao- Tse – Tung - Cultural Revolution- Deng Xiaoping-Tiananmen square, 1989 and the Crisis of Communism.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Alexis Krausse, <i>The Far East: Its History and Its Question, Forgotten Books</i> , 2017.	
2	Harold M. Vinacke, <i>A History of the Far East in Modern Times</i> , Kalyani Publisher, New Delhi 1982.	
3	Jones, F.C., <i>The Far East</i> , Ed. Pergamon, 1966.	
4	Majumdar, R.K., & Srivastva A.N., <i>History of Far East</i> , SBD Publisher's, New Delhi, 2006.	
5	Shivkumar, S., and Jain, <i>History of Modern China</i> , S. Chand & Co Pvt Ltd.,	
<b>Book(s) for Reference</b>		
1	Brown, D.M., <i>Nationalism in Japan</i> .	
2	Claude A Buss, <i>Asia in the Modern World</i> , OUP, New York 1955.	
3	Clyde and Beers, <i>The Far East</i> , Printice Hall of India Pvt. Ltd., New Delhi, 6 <sup>th</sup> ed.,1988.	
4	Crofts & Buchanan, <i>A History of the Far East</i> .	
5	Janet E. Hunter, <i>The Emergence of Modern Japan</i> .	
6	Latourette, <i>A History of Japan</i> OUP 1982.	
7	Marius B. Jansen, Ed., & Peter Duus Ed., <i>Cambridge History of Japan</i> , Volume 5 &6, 2008.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Historiography_of_Japan">https://en.wikipedia.org/wiki/Historiography_of_Japan</a>	
2	<a href="https://en.wikipedia.org/wiki/History_of_China">https://en.wikipedia.org/wiki/History_of_China</a>	
3	<a href="http://necrometrics.com/wars19c.htm">http://necrometrics.com/wars19c.htm</a> White, Matthew. "Statistics of Wars, Oppressions and Atrocities of the Nineteenth Century"	
4. Course Designed By: <b>Dr. S.Z NIAZUDEEN</b> , Assistant Professor in History, Sri Vasavi College, Erode. niazudeensz78@gmail.com		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	M	S	M
<b>CO3</b>	S	S	S	S	M	S	S	L	S	M
<b>CO3</b>	S	S	S	S	M	S	S	L	M	L
<b>CO4</b>	S	S	S	S	M	S	S	S	S	M

Course code	<b>SOCIAL AND CULTURAL HISTORY OF TAMIL NADU FROM 1916 A.D. TO 2000 A.D.</b>			L	T	P	C	
<b>CORE-15</b>				4	-	-	4	
<b>Pre-requisite</b>	<b>Basic knowledge of History of Tamil Nadu at U.G. level</b>			<b>Syllabus</b>		<b>2021-2022</b>		
<b>Course Objectives:</b>								
The main objectives of this course are :								
1. To enable the learners to interpret the social and cultural history of Tamil Nadu. 2. To acquaint the importance of Dravidian movement in promoting social justice. 3. To develop a healthy social attitude by recognizing the historical facts of period.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember the important leaders and reformers of the period of study.						K1	
2	Understand the contribution of Dravidian Movement to establish social justice.						K2	
3	Assess the role of Kamaraj in the field of education and its impact.						K3	
4	Compare and contrast the society and culture of various periods of history in Tamil Nadu.						K4	
5	Judge the importance of social welfare measures.						K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>RADICAL SOCIAL REFORM MOVEMENT</b>					<b>15-- hours</b>		
Causes-Concept of Dravidian Culture –Justice Party and its achievements-Non –Brahmin Movement –Dr. Natesa Mudaliar- Sir P. Thyagaraja Chettiar-T.M. Nair-Periyar E.V.R and the Self –Respect Movement.								
<b>Unit:2</b>	<b>SOCIAL AND POLITICAL MOVEMENTS</b>					<b>15-- hours</b>		
Temple Entry Movement-The Dravida Kazhagam-Dalit movement:- –M.C.Rajah- Erattamalai Srinivasan - Muthulakshmi Reddy-Abolition of Devadasi system-Home Rule Movement in Madras Presidency-Prohibition movement.								
<b>Unit:3</b>	<b>KAMARAJ AND ANNADURAI</b>					<b>15-- hours</b>		
Contributions of Kamaraj-Growth of Education-Mid day Meal Scheme and its impact-Land reforms and Social welfare-Annadurai-Rise of regional politics and it impact-Anti Hindi Agitations.								
<b>Unit:4</b>	<b>SOCIAL WELFARE</b>					<b>14-- hours</b>		
D.M.K and ADMK-Nutritious Meal Scheme-Social Welfare Schemes-Contribution to the growth of Tamil Language-Reservation-Women Welfare Schemes and Social Legislations-Labour Welfare Schemes- Cauvery river water dispute and social implication-Agriculture and Industry.								
<b>Unit:5</b>	<b>EDUCATION, LITERATURE, AND CULTURE</b>					<b>14-- hours</b>		

Education-Growth of Universities-Literature- Subramania Bharathi – Bharathidasan –Namakkal Ramalingam Pillai –Kavimani Desika Vinayagampillai-MaraimalaiAdigal –Growth of Tamil Press since 1916-Cinema: Impact on society and politics-Stage plays-Fan Culture-Impact of Information Technology on Tamil culture and society.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Swaminathan, A., <i>Social and Cultural History of Tamilnadu</i> , Deepa Pathippagam, 1984.	
2	Venkatesan. G., <i>History of Modern Tamilnadu</i> , 2011.	
<b>Book(s) for Reference</b>		
1	Abdul Khader Fakhri, S.M., <i>Dravidian Sahibs and Brahmin Maulanas: The Politics of the Muslims of Tamil Nadu 1930-1967</i> , 2008.	
2	Baker,C.J., <i>The Politics of South India 1920-1937</i> ,Cambridge, 1976.	
3	Geetha ,V., & S.V.Rajadurai, <i>Dalits and Non –Brahmin Consciousness in Tamilnadu</i> , E.P.W., 25,SEP 1993.	
4	Hardgrave, R.L., <i>The Dravidian Movement</i> , Bombay, 1965.	
5	Irschick, E.F., <i>Politics and social conflicts in south India</i> ,Berkeley, 1969.	
6	Jeevanandam, S., & Rekha Pande, <i>Devadasis in South India: A Journey from sacred to a Profane Spaces</i> .	
7	Kumar, D., <i>Land And Caste In South India, Agricultural labour In The Madras Presidency During Nineteenth Century</i> ,Cambridge, 1965.	
8	Mepherson, K., “ <i>The Social Background And Politics Of The Muslims Of Tamilnadu 1901-1937</i> ”,Indian social and economic History Review Vol4, 1969.	
9	Mohan ,P.E., <i>Scheduled Castes:History of Elevation</i> ,Tamil nadu 1900-1995, Madras, New era, 1993.	
10	More, J.B.P., <i>Political Evolution of Muslims in Tamilnadu and Madras 1930–1947</i> .	
11	Paramarthalingam, C., <i>Social Reform Movement in Tamil Nadu in the 19th Century with Special Reference to St. Ramalinga</i> , Rajakumari Publications, Tamil Nadu, 1995.	
12	Rajaraman, P., <i>The Justice Party.Madras</i> , 1985.	
13	Rajendran,N.(1994) <i>Agitation Politics and State Coercion, National Movement in Tamilnadu,1905-1914</i> .Oxford University Press, Madras.	
14	Saskia C., Kersenboom, <i>Nityasumangali: Devadasi Tradition in South India</i> .	
15	Sobhanan, <i>Temple Entry Movement and Sivakasi Riots</i> , Madurai.	
16	The Hindu, <i>Therkilirundu Oru Suriyan</i> , (Tamil) Chennai.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.tn.gov.in/tamilnadustate">https://www.tn.gov.in/tamilnadustate</a>	
2	<a href="https://en.wikipedia.org">https://en.wikipedia.org</a>	
3	Websites of Political Parties and Organizations	

5. Course Designed By: **Dr. S.Z. NIAZUDEEN**, Assistant Professor in History, Sri Vasavi College, Erode. niazudeenz78@gmail.com

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	M	S	S	L	S	M
<b>CO2</b>	S	S	S	S	M	S	S	M	S	M
<b>CO3</b>	S	M	S	S	M	S	S	M	S	M
<b>CO4</b>	S	S	S	S	M	S	S	M	M	S
<b>CO5</b>	S	S	S	S	M	S	S	M	M	S

\*S-Strong; M-Medium; L-Low



# Fourth Semester

Course code	INTERNATIONAL RELATIONS AND DIPLOMACY FROM 1914 A.D. TO 1991 A.D.			L	T	P	C
<b>CORE-16</b>				<b>3</b>	<b>1</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic knowledge of World History at U.G. level</b>			<b>Syllabus rsion</b>		<b>2021- 2022</b>	
<b>Course Objectives:</b>							
The main objectives of this course are:							
1. To make students understand the concept, nature and scope of international relations.							
2. To acquaint the theories and concepts with an emphasis on the dynamics of power in international relations.							
3. To make an understanding about issues in global politics.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recall the political events and their effects on international relations.						K1
2	Understand the concept of balance of power.						K2
3	Explain the rise of dictatorship and its evil effects on world politics.						K3
4	Analyze the historical background of international relations between two World Wars.						K4
5	Evaluate the importance of world peace.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION TO INTERNATIONAL RELATIONS</b>					<b>15-- hours</b>	
International Relations - Definition and Scope –Kinds of Diplomacy-Communism and Nationalism							
<b>Unit:2</b>	<b>FIRST WORLD WAR AND ITS IMPACT</b>					<b>15-- hours</b>	
First World War - League of Nations - Nature of Balance of Power in 20th century - Rise of Nazism and Fascism-Peace Settlements 1919-1923.							
<b>Unit:3</b>	<b>SECOND WORLD WAR AND DIPLOMACY</b>					<b>15-- hours</b>	
Second World War - Causes and effects –UNO and its Achievements- International law and its enforcement – Peace efforts- Specialized Agencies-ILO,FAO,UNESCO,WTO,WHO.							
<b>Unit:4</b>	<b>COLD WAR AND ITS EFFECTS ON FOREIGN RELATIONS</b>					<b>14-- hours</b>	
Cold War : NATO, SEATO, CENTO and WARSAW PACT - EEC (European Economic Community) - The Arab Leagues (OPEC) - The Organization of African Unity (OAU)							
<b>Unit:5</b>	<b>TOWARDS WORLD PEACE</b>					<b>14-- hours</b>	
Disarmament- International law – Non-Alignment Movement - SAARC – ASEAN-EU - The Concept of World State-Unipolar –Bipolar-Multipolar.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	

Expert lectures, online seminars – webinars	
Terrorism, Environment issues, Globalization, Nuclear Proliferation, Energy crisis, Food crisis.	
	<b>Total Lecture hours</b>
	<b>75-- hours</b>
<b>Book(s) for Study</b>	
1	Ghosh.P., <i>International Relations</i> , New Delhi, Learning Pvt.Ltd, 2013.
2	Gomathinayaham. P., <i>International Relations : Politics and Institutions</i> (T).
3	Mahajan V.D., <i>International Relations Since 1900</i> , S.Chand & Company Ltd.,New Delhi.
4	Srivastava, A.L., <i>International Relation from 1945 to Present Day</i> , SBD Publication, New Delhi,1991.
<b>Book(s) for Reference</b>	
1	Carr.E.H., <i>International Relations Between Two World Wars</i> .
2	Palmer and Perkins, <i>International Relations</i> .
3	Pierre Marie Martin, <i>Introduction to International Relations</i> , (Translated from the French by Arti Sharma), ed. J.C.Johari, Sterling Publication, Pvt.Ltd, New Delhi, 1981.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	SAKSHAT ( <a href="https://sakshat.ac.in/">https://sakshat.ac.in/</a> )
2	e-PG Pathshala ( <a href="https://epgp.inflibnet.ac.in/">https://epgp.inflibnet.ac.in/</a> )
3	SWAYAM( <a href="https://swayam.gov.in/">https://swayam.gov.in/</a> )
Course Designed By: <b>DR.K.MADHUSUDHARSANAN</b> , Assistant Professor & HOD of History, Chikkaiah, Naicker College, Erode.	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	M	L	M	M
<b>CO3</b>	S	S	S	S	M	S	S	L	M	M
<b>CO3</b>	S	S	S	S	M	S	S	L	M	M
<b>CO4</b>	S	S	S	S	M	S	S	L	M	M
<b>CO5</b>	S	S	S	S	M	S	S	L	M	S

\*S-Strong; M-Medium; L-Low

**PROJECT AND VIVA-VOCE**

Course code	PROJECT AND VIVA-VOCE				L	T	P	C
CORE-17					2	2	-	4
Pre-requisite	Knowledge of Research Methodology in the previous semester.				Syllabus Version		2021-2022	
<b>Course Objectives:</b>								
The main objectives of this course are:								
1. To learn the research methods practically and acquire the requisites of a researcher. 2. To acquire proficiency in historical writing. 3. To understand, analyze and evaluate the sources collected for the project. 4. To prepare a project in the field of interest in history.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember the process of doing research and acquire knowledge of selection of topic, collection and analysis of sources.						K1	
2	Understand the methodology of research.						K2	
3	Apply the acquired knowledge in future research studies.						K3	
4	Compare and contrast different types of sources.						K4	
5	Evaluate the sources on the basis of their closeness to truth and derive a conclusion.						K5	
6	Document the project.							
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								

- A Project on any historical topic pertaining to any period of students interest to be done under the supervision of a guide and submit a project report of 50 pages (The *Times New Roman* font sized 12 (1.5 spaced) in A4 size paper)
- A viva-voce examination must be conducted at the end of the IV semester.
- The CIA must be on the basis of the students field visits, collections of sources and his overall performance as a new researcher and viva-voce.
- Project must be related to a topic relevant to the history.
- The Project should be submitted *before* the end of the 4<sup>th</sup> Semester Examination.
- **Viva-voce** and the evaluation of the project shall be conducted by a Panel of teachers not less than two (one External and one Internal).

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	M	S	L	M	S
CO3	M	M	S	S	S	S	S	L	S	S
CO3	M	M	S	S	S	S	S	L	S	S
CO4	M	M	S	S	S	L	L	L	L	S
CO5	M	M	S	S	S	S	M	L	L	S

# Elective Course

**ELECTIVE SUBJECTS**

**COLLEGES CAN CHOOSE**

**ANY ONE ELECTIVE FROM THE CHOICES PER SEMESTER**

**ELECTIVE PAPER I / FIRST SEMESTER**

**TOURISM AND TRAVEL MANAGEMENT (OR) EPIGRAPHY**

Course code		TOURISM AND TRAVEL MANAGEMENT	L	T	P	C
<b>Elective-I</b>			4	-	-	4
<b>Pre-requisite</b>		<b>Basic Knowlegde of Touris m.</b>	Syllabus rsion		2021- 2022	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
<ol style="list-style-type: none"> <li>To acquaint the learners about the potentiality of tourism industry in India.</li> <li>To equip the learner with business skills of tourism industry.</li> <li>To know about the national and international organization of Tourism, Travel Agencies,</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the important tourist destinations of India.					K1
2	Understand the role and responsibilities of travel agency, travel agent and the guide.					K2
3	Apply the historical knowledge in the field of Tourism.					K3
4	Analyze the role of tourism organizations in promotion of tourism.					K4
5	Recognize the importance of modern technologies in tourism and travel management.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>TOURISM IN INDIA</b>				<b>15-- hours</b>	
Definition, Meaning and Nature of Tourism-Historical Background of Tourism and Travel-Prospective Indian Tourism Industry-Heritage Monuments-Socio-cultural facets of India-Festivals and fairs of India-Eco tourism in India.						
<b>Unit:2</b>	<b>ORGANISATIONS OF TOURISM</b>				<b>15-- hours</b>	
WTO – IATA – UFTAA – PATA – ICAO – ASTA- TAAI- ITDC – TTDC						
<b>Unit:3</b>	<b>TOURISM BUSINESS</b>				<b>15-- hours</b>	
Travel Agency and Tour Operators – Travel Agency – Structure – Functions – Types of Travel Agency –Setting up of Travel Agency-Source of Income- Wholesaler - Retailer and Tour Operators – Distinction between Wholesale Travel Agency and Tour Operator- Indian Travel Agents-Tour guiding-Role and responsibilities-occupational skills-Group guiding.						
<b>Unit:4</b>	<b>TRAVEL MANAGEMENT</b>				<b>14-- hours</b>	

Definition of Travel Management- Travel procedures- Itinerary-Types-Travel Documentation-Types-Health Regulation, Currency Regulation, Customs-Travel Insurance.		
<b>Unit:5</b>	<b>MODERNIZATION OF TOURISM</b>	<b>14-- hours</b>
Modern Technologies in Tourism-Computer Reservation System - Impact of Internet in Tourism Industry – Mode of Payments- Ticketing-Reservation and Cancellation-Request-Invoicing and Accounts-Online Booking - Airlines, Hotel, Railways and other transportation facilities-Modern media and tourism promotion.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>

<b>Book(s) for Study</b>	
1	Bhatia, A.K., <i>Tourism Development – Principles and Practices</i> , Sterling Publishers Pvt Ltd, New Delhi, 2003
2	Mohinder Chand, <i>Travel Agency Management</i> , Anmol Publications Pvt Ltd, New Delhi, 2000
<b>Book(s) for Reference</b>	
1	Dr. Thandavan & Dr. Revathy Girish, <i>Tourism Product</i> , Volume 1, Dominant Publishers, Delhi, 2005.
2	<i>Fairs and Festivals of India</i> , Hindoology Books, Delhi, 2006.
3	Mario D’Souza, <i>Tourism Development and Management</i> , Mangal Deep Publications, Jaipur, 2003.
4	Pran Nath Seth, <i>An Introduction to Travel and Tourism</i> , Sterling Publishers Pvt Ltd, Delhi, 1998.
5	Pran Nath Seth, <i>Successful Tourism Management</i> , Sterling Publishers Pvt Ltd, Delhi, 1997.
6	Rabindra Seth Om Gupta, <i>Tourism in India</i> , Kalpaz Publications, New Delhi, 2005.
7	Sati, V.P., <i>Tourism Development in India</i> , Pointer Publications, Jaipur, 2001.
8	Sinha P.C., <i>Tourism Marketing</i> , Anmol Publications, Delhi, 2003.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827</a> (Tourism Management)
2	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1827</a> Tour Guiding P-09, Module 1-19.
6. Course Designed By: <b>Dr. S.Z NIAZUDEEN</b> , Assistant Professor in History, Sri Vasavi College, Erode niazudeensz78@gmail.com	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	L	S	L	S
<b>CO2</b>	M	M	S	S	M	S	L	S	M	S
<b>CO3</b>	S	S	S	S	M	S	L	S	M	S
<b>CO4</b>	S	M	S	S	M	M	L	M	M	L
<b>CO5</b>	S	M	S	S	M	M	M	L	M	S

\*S-Strong; M-Medium; L-Low



**ELECTIVE PAPER I / FIRST SEMESTER**

Course code	EPIGRAPHY			L	T	P	C
<b>Elective-I</b>				4	-	0	4
<b>Pre-requisite</b>	<b>Basic knowledge of Archaeology at U.G. level</b>			<b>Syllabus</b>	<b>rsion</b>	<b>2021-2022</b>	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Study about the evolution and development of inscriptions in India.							
2. Teach the knowledge of the art of ancient writing.							
3. Acquaint the students about the various types of scripts and inscriptions.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the important inscriptions of India.						K1
2	Understand the meaning and evolution of Epigraphy.						K2
3	Identify ancient scripts and also find out new inscriptions.						K3
4	Demonstrate the ability to apply his knowledge in recognizing the scripts.						K4
5	Evaluate the importance of inscriptions in the study of history.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>							
<b>Unit:1</b>	<b>EVOLUTION OF INSCRIPTIONS</b>					<b>15 hours</b>	
Meaning and Definition –Evolution, Nature and importance of inscriptions – Types of Inscriptions.							
<b>Unit:2</b>	<b>ANCIENT SCRIPTS</b>					<b>15 hours</b>	
Harappan script - Kharoshti - Brahmi Script - Asokan Edicts.							
<b>Unit:3</b>	<b>ART OF WRITING IN SOUTH INDIA</b>					<b>15 hours</b>	
Art of Writing in South India- Tamil Brahmi, Vatteluttu & Tamizh.							
<b>Unit:4</b>	<b>NORTH INDIAN INSCRIPTIONS</b>					<b>14 hours</b>	
North Indian Inscriptions : (Allahabad Inscriptions of Samudragupta, Hathigumpah Inscriptions of Kharavela)							
<b>Unit:5</b>	<b>SOUTH INDIAN INSCRIPTIONS</b>					<b>14 hours</b>	
South Indian Inscriptions: Pallavas - Kuram Plate, Cholas-Uttiramerur, Pandyas-Velvikudi Plates.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars – webinars							
					<b>Total Lecture hours</b>	<b>75 hours</b>	
<b>Book(s) for Study</b>							
1	Buhler, G., <i>Indian Paleography</i> , Ideological book house, Delhi, 1968.						
2	Sircar D.C., <i>Indian Epigraphy</i> , New Delhi, 1966.						
<b>Book(s) for Reference</b>							
1	Govindaraj, R., <i>Evolution Scripts in Tamilnadu</i> , Tamilnadu Archaeological Society Special Issue, No.1. 1994.						
2	Kasinathan, <i>Natana Kalleluttukalai</i> (in Tamil).						
3	Mahadevan, I., <i>Early Tamil Epigraphy</i> , Cre-A, Chennai, 2003.						

4	Mahalingam, T. V., <i>Early South Indian Paleography</i> , University of Madras, Chennai, 1967.
5	Rajan, K., <i>Kalvetiyal</i> (in Tamil).
6	Sivaramamurthy, <i>Indian Epigraphy and South Indian Scripts</i> ,
7	Subramanian. T.N., <i>Pandaiya Tamil Eluttukkal</i> (in Tamil).
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=d1m5itnOBZM">https://www.youtube.com/watch?v=d1m5itnOBZM</a> >> e-Pathshala
2	<a href="https://www.youtube.com/watch?v=7mEkIpgKSwA">https://www.youtube.com/watch?v=7mEkIpgKSwA</a> >> e-Pathshala
3	<a href="https://www.youtube.com/watch?v=kdotSUbYZQk">https://www.youtube.com/watch?v=kdotSUbYZQk</a> >> e-Pathshala
4	<a href="https://en.wikipedia.org/wiki/Epigraphy">https://en.wikipedia.org/wiki/Epigraphy</a>
5	<a href="https://en.wikipedia.org/wiki/Edicts_of_Ashoka">https://en.wikipedia.org/wiki/Edicts_of_Ashoka</a>
Course Designed By: <b>DR. R. SANTHANAM</b> , Assistant Professor of History, Sri Vasavi College, Erode. E-mail ID <a href="mailto:rsanma86@yahoo.in">rsanma86@yahoo.in</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	M	M	M	M	M
<b>CO3</b>	S	S	M	M	M	S	S	S	S	M
<b>CO3</b>	S	S	M	M	S	S	M	S	S	S
<b>CO4</b>	S	S	M	M	S	S	M	S	S	S
<b>CO5</b>	S	S	M	M	S	S	M	S	S	M

\*S-Strong; M-Medium; L-Low

**SECOND SEMESTER**

**ELECTIVE PAPER II / SECOND SEMESTER**

**OFFICE AUTOMATION AND ITS APPLICATIONS (Industry 4.0)**

**(OR)**

**PRINCIPLES AND METHODS OF ARCHAEOLOGY**

Course code		OFFICE AUTOMATION AND ITS APPLICATIONS (Industry 4.0)	L	T	P	C
<b>Elective-II</b>			4	-	-	4
<b>Pre-requisite</b>		Basic knowledge of computer at U.G. level.	Syllabus		2021-2022	
<b>Course Objectives:</b>						
The main objectives of this course are to:						
1. To acquaint the learners about the office automation and its utility.						
2. To make the learners proficient in the application of MS word, Spread sheet, power point presentation, google applications and the basics of Internet of things.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the important short cut key operations and formulas in operating computer.					K1
2	Understand the uses of computer in the field of history.					K2
3	Apply the knowledge of computer in learning, writing, documentation, power point presentation, project preparation and thesis writing of history.					K3
4	Evaluate the recent trends in Industry 4.0.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>WINDOWS AND MS WORD</b>				<b>15-- hours</b>	
<b>Windows:</b> Definition of Operating System, Functions of OS, types of OS. Desktop icons and their functions: My computer, My documents, My Network Place, Recycle Bin, Files, Folder, Local Disk Drive, CD/DVD Drive, Pen Drive.						
<b>MS Word:</b> Features, creating, saving and opening documents in word, interface, toolbars, ruler, menus, keyboard shortcut keys, Editing, previewing, printing and formatting a document, advanced features of MS Word, find and replace..						
<b>Unit:2</b>	<b>SPREAD SHEET</b>				<b>15-- hours</b>	
Creating worksheet, entering and editing text, Saving, modifying worksheet, range selection, copying and moving data, inserting and deleting rows and columns, naming Worksheet. Setting Formula: Finding total in a column or row, mathematical operations like addition, subtraction, multiplication, division using formulas. Printing worksheet, Creating charts, Pivot tables.						
<b>Unit:3</b>	<b>POWER POINT PRESENTATION</b>				<b>14-- hours</b>	
Basic of power point, creating and editing slides, formatting slides, Master slides, Templates, coloring text and objects, Transitions, heading slides, using clip art gallery, chart creations, managing files.						

<b>Unit:4</b>	<b>GOOGLE APPLICATIONS</b>	<b>14-- hours</b>
Basics of Google Play store, Google Calendar, Google Contacts, Google Docs, Google Sheets, Google Slides, Google Drive, Google Meet.		
<b>Unit:5</b>	<b>INTERNET OF THINGS</b>	<b>15-- hours</b>
Introduction, Definition & characteristics of IOT, IOT in everyday life, Internet of everything. IOT Applications: Intelligent Traffic systems, Smart Parking, Smart cities and location sharing, Smart Agriculture, IOT in education. Development of India in IOT: Aadhaar Card System, IOT in health care industry, IOT in financial sectors, IOT in rural empowerment. Challenges in IOT: Big Data Management, Connectivity challenges. <b>Social Media Applications:</b> About WhatsApp, Facebook, Twitter, YouTube, Instagram.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for study</b>		
1	Joyce Cox & Polly Urban, <i>Quick Course in Microsoft Office-GOLGOTIA</i> Publications.	
2	Arshdeep Bahga, Vijay Madiseti, <i>Internet of Things-A hands on Approach</i> Authors, Universities press.	
<b>Book(s) for Reference</b>		
1	Taxali, R.K., <i>PC Software for Windows Made Simple</i> , Tata McGrawHill Publishing Company, 1998.	
2	Srinivasa, K.G., Siddesh G.M., Hanumantha Raju R., <i>“Internet of Things”</i> Cengage Learning India Pvt. Ltd., 2018.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	Word : <a href="https://www.youtube.com/watch?v=d1cm4frzNEQ">https://www.youtube.com/watch?v=d1cm4frzNEQ</a>	
2	Excel : <a href="https://www.youtube.com/watch?v=rwbho0CgEAE">https://www.youtube.com/watch?v=rwbho0CgEAE</a>	
3	PowerPoint : <a href="https://www.youtube.com/watch?v=8ovm_qUX7yE">https://www.youtube.com/watch?v=8ovm_qUX7yE</a>	
4	Google Sheet : <a href="https://www.youtube.com/watch?v=FIkZ1sPmKNw">https://www.youtube.com/watch?v=FIkZ1sPmKNw</a>	
5	Google Drive : <a href="https://www.youtube.com/watch?v=YPbWTG6LM84">https://www.youtube.com/watch?v=YPbWTG6LM84</a>	
6	IOT : <a href="https://www.youtube.com/watch?v=UrwbeOIk68">https://www.youtube.com/watch?v=UrwbeOIk68</a>	
Course Designed By: <b>DR. S. PRASATH</b> , Coordinator & Assistant Professor in Computer Science, Centre for E-Learning and Development, Nandha Arts and Science College, Erode. E- mail ID.prasath.sivasankaran@nandhaarts.org		

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	M	M	L	L	S	S	S	S
CO2	M	L	M	M	L	M	S	M	S	S
CO3	S	L	M	M	L	L	S	M	S	S
CO4	S	L	S	S	L	L	S	M	S	S

\*S-Strong; M-Medium; L-Low

**ELECTIVE PAPER II / SECOND SEMESTER**

Course code	PRINCIPLES AND METHODS OF ARCHAEOLOGY		L	T	P	C
<b>Elective-II</b>			<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic Knowledge of History at U.G. level.</b>		<b>Syllabus</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
1. To impart the principles and methods of Archaeology.						
2. To acquaint the learner about the excavations, dating methods and other aspect of Archaeology.						
3. To train the students to understand the importance of archaeology through field visits to excavation sites and heritage monuments.						
Expected Course Outcomes:						
On the successful completion of the course, student will be able to:						
1	Master the archaeological aspects of Pre-historical cultures and contribution of various archaeological experts.					K1
2	Identify and understand key themes and concepts in Archaeology and its development.					K2
3	Apply his knowledge to find out archaeological sites and artifacts.					K3
4	Analyze the origin and nature of National and State Department of Archaeology in India.					K4
5	Evaluate excavation, dating methods and other techniques used in Archaeology.					K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6- Create</b>						
<b>Unit:1</b>	<b>CONTRIBUTION OF VARIOUS ARCHAEOLOGISTS</b>				<b>15 hours</b>	
Contribution of James Princep - Sir William Jones - Alexander Cunningham – Sir John Marshall - Mortimer Wheeler - Archaeological Survey of India.						
<b>Unit:2</b>	<b>EXPLORATION</b>				<b>15 hours</b>	
Exploration methods - Methods and objectives– Sources – Literary - Inscription – Aerial Survey - Scientific instruments in Exploration.						
<b>Unit:3</b>	<b>EXCAVATION</b>				<b>15 hours</b>	
Excavation Methods - Surveying and mapping – Staff – Equipments – Stratigraphy – Analysis – Documentation.						
<b>Unit:4</b>	<b>DATING METHODS</b>				<b>14 hours</b>	
Dating methods: Absolute and Relative dating – Carbon 14 method – Thermoluminescence – Potassium – Argon method – Archaeo Magnetism – Dendro Chronology – Fluorine method.						
<b>Unit:5</b>	<b>FEATURES OF ARCHAEOLOGY</b>				<b>14 hours</b>	
Preservation and Conservation methods in Archaeology - Archaeology in Post Independent India.- Functions of Archaeological Survey of India – State Department of Archaeology						

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Book(s) for Study</b>		
1	Raman K.V., <i>Principle and Methods of Archaeology</i> , Parthajan Publication, Chennai 1998.	
2	Vengatraman, R., <i>Indian Archaeology (A Survey)</i> , Ajanta Achagam, Vadipatty.	
<b>Book(s) for Reference</b>		
1	Barker, Philip, <i>Technics of Archaeological Excavation</i> , London 1977.	
2	Childe, V.Gordon, <i>A Short Introduction to Archaeology</i> , New York, 1960.	
3	Ekambarathan. A., & Ponnusamy. R., <i>Tholliyal Akalaivu Nermuraikal</i> (in Tamil), Chennai, 2002.	
4	Rajan, K., <i>Archaeology, Principle and Methods</i> , Tanjore, 2002.	
5	Shankalia, A.D., <i>New Archaeology – Its Scope and Application in India</i> , OUP, 1954.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=prpnOZhXPrk">https://www.youtube.com/watch?v=prpnOZhXPrk</a>	
2	<a href="https://www.youtube.com/watch?v=FDt9VEX6SNs">https://www.youtube.com/watch?v=FDt9VEX6SNs</a>	
3	<a href="https://www.youtube.com/watch?v=VbgrVMu3TwU">https://www.youtube.com/watch?v=VbgrVMu3TwU</a>	
4	<a href="https://www.youtube.com/watch?v=1pL7NDpWl5Y&amp;feature=emb_title">https://www.youtube.com/watch?v=1pL7NDpWl5Y&amp;feature=emb_title</a>	
Course Designed By: <b>PROF. M. THANGAVEL &amp; DR. R. SANTHANAM</b> , Sri Vasavi College, Erode. E-mail ID <a href="mailto:thangavelhistoryvc@gmail.com">thangavelhistoryvc@gmail.com</a> .		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	S	S	S	S	S	S
<b>CO2</b>	S	M	S	S	S	M	S	S	S	S
<b>CO3</b>	M	M	S	S	S	S	S	S	S	S
<b>CO4</b>	M	M	S	S	M	M	M	M	M	M
<b>CO5</b>	S	S	S	S	S	M	M	M	S	M

\*S-Strong; M-Medium; L-Low

**THIRD SEMESTER**

**ELECTIVE PAPER III/THIRD SEMESTER**

**INTERVIEW SKILLS AND TECHNIQUES  
 (OR)  
 MUSEOLOGY**

Course code	INTERVIEW SKILLS AND TECHNIQUES			L	T	P	C
<b>Elective-III</b>				<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>No Pre-requisite is required</b>			<b>Syllabus rsion</b>		<b>2021- 2022</b>	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. To inculcate the potential skills and techniques in the learners and to prepare them to face interviews confidently.</li> <li>2. To develop the dynamic qualities of enthusiasm, self confidence, sense of responsibility and determination.</li> <li>3. To teach what interviewers expect from an interviewee.</li> <li>4. To facilitate the students to develop their personality.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the etiquette and mannerism.						K1
2	Understand the meaning and nature of interviews.						K2
3	Apply the soft skills and the knowledge acquired in real life situations.						K3
4	Analyse and Identify the strengths and weakness.						K4
5	Recognize the importance of the Interview skills and Techniques.						K5
6	Write a good application and curriculum vitae.						K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION TO INTERVIEW</b>					<b>15-- hours</b>	
Meaning and nature of Interview-Types of Job Interviews-Screening and Selection Interviews-Traditional One to One Interview, Panel Interview, Behavioural Interview, Stress Interview, Follow up interview, Telephone Interview, On Site Interview-Video Conferencing..							
<b>Unit:2</b>	<b>INTERVIEW PREPARATION</b>					<b>15-- hours</b>	
Job application and curriculum vitae-Preparing for interview-Knowing the Organization-Types of interview questions-Common Questions-Behaviour based Questions-Situational Questions-Negative Questions-Expected Questions.							

<b>Unit:3</b>	<b>SKILL DEVELOPMENT</b>	<b>15-- hours</b>
Introduction to Soft skills-Presentation skills-Effective Presentation-Group Discussion-Importance of Communication Skills-Effective Talking-Effective Listening-Body Language-e-Communicative Skills-Etiquette and Mannerism-Cleanliness		
<b>Unit:4</b>	<b>PERSONALITY DEVELOPMENT</b>	<b>14-- hours</b>
Personality-How to Develop the Personality-Positive Attitude-Motivation-Self Motivation- - Leadership Qualities-Life Skills-Self Awareness, Critical and Creative Thinking-Social Adjustment- Social Effectiveness-Initiative- Self-Confidence – Decision Making-Time Management-Self Esteem.		
<b>Unit:5</b>	<b>INTERVIEW TIPS</b>	<b>14-- hours</b>
Checklist-Preparation before Interview-Upon Arrival-Preparation during Interview-Appearance-Power of Expression-Level of Intelligence-Strengths and Weakness-Interview Dos and Don'ts.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
	<b>Total Lecture hours</b>	<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Andrews Sudhir, <i>How to Succeed at Interview</i> , Mc Graw Hill India.	
2	Jain, J.S., & Gupta, <i>Interview and Group Discussion</i> , Upkars.	
3	Madhukar Kumar Bhagat, <i>Civil Service Interview How to Excel</i> , Mc Graw Hill Education.	
4	Paul, D.S., & Manpreet Kaur, <i>Interview Skills A Practical Guide for the Interviewer and Interviewee</i> , Goodwill, 2019.	
<b>Book(s) for Reference</b>		
1	Ameer Ali, P., <i>Sizzling Soft Skills for Spectacular Success: A Practical Guide on Personality Development</i> , Notion Press, Chennai, 2017.	
2	Julie Gray, <i>Interview Success: Get the Edge: A Teach Yourself Guide. Teach Yourself.</i> New York, McGraw-Hill editions, 2012.	
3	Nitin Bhatnagar & Mamta Bhatnagar, <i>Effective Communication and Soft Skills Strategies for success</i> , Pearson, Kindle Edition.	
4	Philip Charsley, <i>Interview Preparation: Deconstructing the Interview Process</i> , CreateSpace Independent Publishing Platform, 2014.	
5	Verma, <i>Enhancing Employability @ Soft Skills</i> .	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1610">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1610</a> Human Resource Management, Paper 16- Skill Development and Social Entrepreneurship, Module 1 to 9.	



2	<a href="http://egyankosh.ac.in/bitstream/123456789/60110/1/Unit-24%20Personality%20Development%20And%20Communicating%20Skills.pdf">http://egyankosh.ac.in/bitstream/123456789/60110/1/Unit-24%20Personality%20Development%20And%20Communicating%20Skills.pdf</a>
4	<a href="http://egyankosh.ac.in/handle/123456789/35099">http://egyankosh.ac.in/handle/123456789/35099</a> communication skills
5	<a href="https://ndl.iitkgp.ac.in">https://ndl.iitkgp.ac.in</a>
7. Course Designed By: <b>Dr. S.Z NIAZUDEEN</b> , Assistant Professor in History, Sri Vasavi College, Erode niazudeensz78@gmail.com	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	L	L	L	L	M	M	L	M	S
<b>CO2</b>	M	L	L	L	L	L	M	L	M	S
<b>CO3</b>	L	L	L	L	L	L	L	L	M	S
<b>CO4</b>	L	L	L	L	L	L	L	L	L	S
<b>CO5</b>	L	L	M	M	L	L	L	L	L	S

\*S-Strong; M-Medium; L-Low

**ELECTIVE PAPER III / THIRD SEMESTER**

Course code	MUSEOLOGY		L	T	P	C
<b>Elective-III</b>			<b>3</b>	<b>1</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>A inquisitive interest in artifacts &amp; museum</b>		<b>Syllabus Version</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>						
The main objectives of this course are:						
<ol style="list-style-type: none"> <li>To educate the students about the development and growth of Museum and Museology.</li> <li>To train the students for curatorial work, research and preservation</li> <li>To impart knowledge of conservation of cultural, natural and national heritage.</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the context and concepts of Museum and Museology.					K1
2	Understand the importance of museums and education institutions.					K2
3	Document and classify museum objects and acquire skills to manage and demonstrate them in museum.					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>						
<b>Unit:1</b>	<b>INTRODUCTION TO MUSEUMS</b>				<b>15-- hours</b>	
Definitions and Concepts of Museum- Classification and Types of Museums- Eco Museum, Community Museum, Virtual Museum, Neighbourhood Museum-Functions and role of Museums-Important International and Indian Museums.						
<b>Unit:2</b>	<b>COLLECTION AND DOCUMENTATION</b>				<b>15—hours</b>	
Collection- Types of Collection- Tangible and Intangible Cultural Heritage Modes of Collection: Fieldwork, purchase, donation/gift, loan, exchange etc. Specific issues related to collection. -- Types of documents – entry, accession, classified, and movement registers; Index and Catalogue cards. Digital documentation--Numbering the objects – numbering systems, procedure of applying numbers on objects-Barcoding.						
<b>Unit:3</b>	<b>PREVENTIVE CONSERVATION</b>				<b>14-- hours</b>	
Traditional methods of preventive Conservation --Preventive Conservation measures of inorganic, organic and composite objects: -Monitoring Museum Environment- Relative Humidity and temperature, light, air pollution, and biological agents-Guidelines for handling museum object-Good housekeeping practices-Professional organizations related to conservation e.g. NRLC, INTACH, ICCROM.						
<b>Unit:4</b>	<b>DISPLAY AND EXHIBITIONS</b>				<b>15 -- hours</b>	
Purpose and principles - Display furniture and fixtures: cases, pedestals, stands, panels, mounts, structures, etc. - Lighting fixtures. - Circulation: random, suggestive, directional. - Labels: types, material, size, language, position, execution, evaluation, etc. Visual & verbal aids: charts, graphs/graphics, photographs, film/video, CDROM/DVD. Types of exhibits: original/fabricated, static/movable, models (scale/non-scale, working/non-working), participatory/interactive, diorama/habitat group, tableaux, etc. Types of exhibitions: object-oriented/concept-oriented, thematic, contextual, chronological,						

geographical, integral, comparative, natural, synthetic, didactic, special, permanent/temporary/travelling/circulating/mobile, etc.		
<b>Unit:5</b>	<b>EDUCATION AND PROFESSIONAL ORGANISATIONS</b>	<b>14-- hours</b>
Education programmes and publications related to exhibitions for various audiences-Provisions for people with disabilities. Promotion of exhibitions.-Role of national and international professional organizations – Museums Association (U.K.), Museums Association of India, UNESCO, ICOM, ICCROM, Commonwealth Association of Museums, American Alliance of Museums, IASC, IIC, IUCN, UNESCO-ICOM Museum Information Center, etc.--ICOM code of ethics.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars-Visit to Museums-Case study: Study/Evaluation of any one museum.		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Dilip Kumar Roy, <i>Museology</i> .	
2	Jeyaraj, V., <i>Museology Heritage Management</i> , Chennai museum, 2005.	
3	Vibha Upadhyaya, <i>Archaeology, Museology and Conservation link</i> Ed Vibha Upadhyaya	
<b>Book(s) for Reference</b>		
1	Usha Agarwal, <i>Museums of India</i>	
2	Agrawal, O.P., <i>Care and Preservation of Museum Objects</i> , NRLC, New Delhi, 1977.	
3	Nigam M.L., <i>Fundamentals of Museology</i> , Navahind Prakashan, 1966.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.e-books-chennai-museum.tn.gov.in/chennai-museum/images/152/mobile/index.html#p=20">http://www.e-books-chennai-museum.tn.gov.in/chennai-museum/images/152/mobile/index.html#p=20</a>	
2	<a href="http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/images/UNIT16.pdf">http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CLT/images/UNIT16.pdf</a>	
3	<a href="https://www.youtube.com/watch?v=vNTYe-22MEo&amp;list=RDCMUCCUr096WDp86n62CXBeHlQw&amp;start_radio=1&amp;t=15">https://www.youtube.com/watch?v=vNTYe-22MEo&amp;list=RDCMUCCUr096WDp86n62CXBeHlQw&amp;start_radio=1&amp;t=15</a>	
Course designed by: <b>PROF. R.PRAKASH</b> , Assistant Professor in History, Sri Vasavi College, Erode. E-mail ID <a href="mailto:prakashero80@gmail.com">prakashero80@gmail.com</a>		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	S	S	S	M	S	S	S	S	S
<b>CO2</b>	M	S	S	S	S	S	S	S	S	S
<b>CO3</b>	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

**FOURTH SEMESTER**

**ELECTIVE PAPER IV/ FOURTH SEMESTER  
GENERAL STUDIES FOR COMPETITIVE EXAMINATIONS  
(OR)  
TEMPLE ART AND ARCHITECTURE OF TAMIL NADU**

Course code	GENERAL STUDIES FOR COMPETITIVE EXAMINATIONS	L	T	P	C
<b>Elective-IV</b>		<b>4</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>	<b>Basic General Knowledge</b>	<b>Syllabus</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. To coach the learners in general studies for competitive examinations.					
2. To develop the language skill and general aptitude.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	Recall the Indian Heritage, Culture, Geography and Scientific laws				K1
2	Understand the concepts of science and arthematics.				K2
3	Explain the concepts of Globalization, Liberalization, Social empowerment				K3
4	Analyse the importance of Planning, land reforms, PDS, and social welfare schemes.				K4
5	Identify the geographical features and locations in India				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>					
<b>Unit:1</b>	<b>INDIAN HERITAGE AND CULTURE</b>	<b>14-- hours</b>			
Art Forms-Literature-Architecture (Ancient, Medieval and Modern)- Salient features of Indian Society-Diversity of India-Effects of Globalization on Indian Society.					
<b>Unit:2</b>	<b>GEOGRAPHY</b>	<b>15-- hours</b>			
The Earth and Solar system-Salient features of physical Geography-Land forms-Atmosphere-Climature-Important Geophysical phenomena- Earthquakes, Tsunami, Volcanic activity, Cyclone – Geographical features and their location (India)- Indian flora and fauna –Forests of India-Mineral Resources of India.					
<b>Unit:3</b>	<b>INDIAN ECONOMY</b>	<b>15-- hours</b>			
Planning-Five Year Plans- New Economic Policy (1991)-Liberalization and its effects- Concept of Inclusive Growth-Land Reforms in India-Major Cropping Patterns in India-Types of Irrigation and Irrigation System-Transport-E-Technology in the aid of farmers-PDS (Public Distribution System)-Industry					
<b>Unit:4</b>	<b>SCIENCE AND GENERAL APTITUDE</b>	<b>15-- hours</b>			
<b>Basic Science</b> -Scientific laws-Newton’s Law of Motion-Energy resources- -Classification of living organisms-Systems of Human Body-Diseases- Vitamins and Minerals -Acids, Salts, Elements and Compounds-Achievements of India in the field of Science and Technology.					
<b>General Aptitude</b> -Basic Numeracy-Number Series-Percentage-Simple and Compound Interest-					

Time and Work-Ratio and Proposals.		
<b>Language:</b> Learner to write essay on any general topic, Official Letters		
<b>Unit:5</b>	<b>GENERAL AWARENESS</b>	<b>14-- hours</b>
Poverty-Population Growth and Issues-Urbanization and its problems -Social Empowerment-Welfare Schemes for vulnerable sections of Population by Centre and State-Rural Welfare Programmes-E-Governance-Role of Civil Service in Democracy-Threats to National Security.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>		
1	Agarwal, R.S., Quantitative Aptitude for Competitive Exams, S. Chand, 2017	
2	Indian Heritage and Culture, General Studies-I, Publisher Lexis Nexis.	
3	Krishna Reddy, <i>Indian History for Civil Service Examination</i> , Mc Graw Hill.	
4	Manohar Pandey, <i>General Knowledge</i> , Arihant, 2019.	
5	Sheelwant Singh, Kriti Rastogi & Sarika, NCERT General Studies for Civil Services & Preliminary Examinations, Mc Graw Hill India, 2020.	
<b>Book(s) for Reference</b>		
1	Edgar Thorpe & Showick Thorpe, <i>General Studies for Civil Service Preliminary Exam</i> , Pearson, 2020	
2	Hartshorne & Alexander, <i>Economic Geography</i>	
3	Majid Husain, <i>Agricultural Geography, Human Geography</i>	
4	NCERT Books.	
5	Ramachandran, <i>Urbanization &amp; Urban Systems in India</i>	
6	Ramesh Singh, <i>Indian Economy</i> , Mc Graw Hill, 2020	
7	Romila Thapar, <i>History of India ( Volume-I)</i>	
8	Sathish Chandra, <i>History of Medieval India</i>	
9	Sharma, R.S., Ancient India (NCERT)	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> Indian Culture.	
2	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=17">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=17</a> Geography.	
3	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=453">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=453</a> Population Studies.	
4	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=30">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=30</a> Public Administration, Public Policy.	
	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=11">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=11</a> Economic Planning in India	
8. Course Designed By: <b>Dr. S.Z NIAZUDEEN</b> , Assistant Professor of History, Sri Vasavi College, Erode. niazudeensz78@gmail.com		

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	M	S	S	L	M	M	L	L	S
<b>CO2</b>	M	M	S	S	L	L	L	L	M	S
<b>CO3</b>	S	S	S	S	L	M	S	L	M	M
<b>CO4</b>	S	L	S	S	L	M	M	L	M	M
<b>CO5</b>	S	S	S	S	L	M	L	L	L	M

\*S-Strong; M-Medium; L-Low

**ELECTIVE PAPER IV/ FOURTH SEMESTER**

Course code	TEMPLE ART AND ARCHITECTURE OF TAMILNADU		L	T	P	C
Elective-IV			4	-	-	4
Pre-requisite	Basic knowledge of Art and Architecture of Tamil Nadu at U.G. level.		Syllabus		2021-2022	
<b>Course Objectives:</b> The main objectives of this course are :						
1. To acquaint the learners about richness of the Temple Art and Architecture of Tamil Nadu 2. To enable the students to understand contribution of various dynasties to the development of Art and Architecture. 3. To acquire a deep knowledge of different styles of Temple Art and Architecture						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
1	Remember the important temples of Tamilnadu.					K1
2	Understand the art and architectural features of the temples of various dynasties.					K2
3	Choose temple study as a subject for research.					K3
4	Differentiate the art and architecture of different dynasties and period.					K4
5	Evaluate the skill of artisans in producing the marvels of temple art and architecture.					K5
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>ART AND ARCHITECTURE OF PALLAVAS</b>				<b>15-- hours</b>	
Pallava Architecture-Rock Cut Architecture- Caves-Monoliths and structural Temples of Pallava-PallavaArt.						
<b>Unit:2</b>	<b>ART AND ARCHITECTURE OF PANDYAS</b>				<b>15-- hours</b>	
Pandayas-Caves and Monoliths (Vettuvan Koil) and structural temples.						
<b>Unit:3</b>	<b>CHOLA ART AND ARCHITECTURE</b>				<b>15-- hours</b>	
Chola Architecture-Structural Temples of Cholas-Chola Art						
<b>Unit:4</b>	<b>VIJAYANAGAR ART AND ARCHITECTURE IN TAMILNADU</b>				<b>14-- hours</b>	
Structural temples of Vijayanagar- Architectural contributions at Kanchipuram, Tiruvanamalai, Sri Villiputur, Srirangam.						
<b>Unit:5</b>	<b>TEMPLE ICONOGRAPHY</b>				<b>14-- hours</b>	
Iconographic features of Temples-Pallava Sculptures-Chola Sculptures.						
<b>Unit:6</b>	<b>Contemporary Issues</b>				<b>2 hours</b>	
Expert lectures, online seminars – webinars						
					<b>Total Lecture hours</b>	<b>75-- hours</b>
<b>Book(s) for Study</b>						
1	Balasubramaniam, S.R., <i>Architecture of Early Medieval India.</i>					
2	Percy Brown, Indian Architecture.					
3	Dayalan, D., Early Temples of Tamilnadu: Their Role in Socio-Economic Life (A.D. 550-925), Harman Publishing House, New Delhi.					

<b>Book(s) for Reference</b>	
1	George Michell, <i>The New Cambridge History of India</i> , Cambridge University Press, Cambridge, 1995.
2	Jouveau Dubreuil, G., <i>Iconography of Southern India</i> , Cosmo Publications, New Delhi, 2001.
3	Mohinder Singh Randhawa and Doris Schreier Randhawa, <i>Indian Sculpture</i> , Vakils, Feffers Simons Ltd., Bombay, 1985.
4	Soundara Rajan, K. V., <i>The Art of south India-Tamilnadu and Kerala</i> , SundeepPrakashan, New Delhi, 1978.
5	Soundara Rajan, K. V., <i>Cave Temples of the Deccan, Architectural Survey of Temples</i> , No. 3, Archaeological Survey of India, New Delhi, 1981.
6	Soundara Rajan, K.V., <i>Rock Cut Temple Styles, Early Pandyan Art and the Ellora Shrines</i> , Sowmaiya Publication Pvt. Ltd.
7	Srinivasan, K. R., <i>Cave-Temples of the Pallavas, Architectural Survey of Temples</i> , No. I, Archaeological Survey of India, New Delhi, 1964.
8	Srinivasan, K. R., <i>Temples of South India</i> , National Book Trust, Delhi 1972.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=829</a> (Subject: Indian Culture, Paper Art and Architecture of India, Module 26 to 32, 35 to 36, For Vijayanagar Architecture See-Paper 14 Art and Architecture of India-II, Module-07)
2	<a href="http://kumbakonam.info/index.php?option=com_content&amp;view=category&amp;id=35&amp;Itemid=55">http://kumbakonam.info/index.php?option=com_content&amp;view=category&amp;id=35&amp;Itemid=55</a>
3	<a href="http://whc.unesco.org/en/list/250">http://whc.unesco.org/en/list/250</a>
4	<a href="https://en.wikipedia.org/wiki/Art_and_architecture_of_the_Pallavas">https://en.wikipedia.org/wiki/Art_and_architecture_of_the_Pallavas</a>
9. Course Designed By: <b>Dr. S.Z NIAZUDEEN</b> , Assistant Professor in History, Sri Vasavi College, Erode. niazudeensz78@gmail.com	



**FOURTH SEMESTER**

**PAPERS FOR SPECIAL ELECTIVE 1 AND 2 IN FOURTH SEMESTER**

**(Choose any two of the following from papers listed 1-4)**

1. WOMEN STUDIES
2. HUMAN RIGHTS
3. INTRODUCTION TO JOURNALISM AND MASS COMMUNICATION
4. HISTORY OF THE U.S.A. FROM 1865 A.D. TO 1974 A.D.

**WOMEN STUDIES**

Course code	WOMEN STUDIES			L	T	P	C
Special Elective (Option-1)				3	-	-	3
Pre-requisite	Basic knowledge of Women Studies			Syllabus revision		2021-2022	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. To sensitize men and women to recognize the importance of multidimensional role of women in society.							
2. To inculcate the importance of empowerment of women and to acquaint the students about the Women Rights.							
3. To inspire a positive change in attitude towards the women in social structure.							
4. To learn about the measures and initiative of National Commission of Women.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remember the important social legislations concerning Women.						K1
2	Understand the ideals of feminism.						K2
3	Apply his wisdom in promotion of women's rights.						K3
4	Analyze the importance of the multidimensional role of women in society.						K4
5	Extend support in the creation of an erudite society respecting human rights.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>INTRODUCTION TO WOMEN STUDIES</b>					<b>15-- hours</b>	
Definition -Relevance and purpose of Women Studies-Status of Women through Ages-Women's Movements in the West-Women's Movements in India.							
<b>Unit:2</b>	<b>FEMINISM</b>					<b>15-- hours</b>	
Definition- Origin of Feminism -Types of Feminism: Liberal-Marxist-Socialist-Cultural-Domestic and Philosophical-Women's Liberation Movements-Views of Subramania Bharathi and E.V.R. Periyar on Women's Rights.							
<b>Unit:3</b>	<b>SOCIAL LEGILATIONS</b>					<b>15-- hours</b>	
Social Legislation of Bristish Rule -Women's Rights - Right to Inheritance -Right to Divorce, Right to Remarry-Right to Equality in Education, Training and Employment.							
<b>Unit:4</b>	<b>ISSUES AND SOLUTIONS</b>					<b>14-- hours</b>	
Contemporary issues related to Women-Female infanticide - Dowry – Domestic Violence-Honour Killings-Problems of Rural Women –Legislations and Legal provisions in favour of Women since Independence - National and State Commissions for Women							
<b>Unit:5</b>	<b>WOMEN IN NATION BUILDING</b>					<b>14-- hours</b>	
Role of Women in Nation Building-Vijayalakshmi Pandit - Indira Gandhi-Muthulakshmi Reddy-M.S.Subbulakshmi- Women Entrepreneurs - Women in Modern Society							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars – webinars							
					<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>							

1	Gokilavani, <i>Women Studies, Principles Theories and Methodologies</i> , 1999.
2	Agarwala, S. K., <i>Directory of Women Studies in India</i> , New Delhi – 1991.
<b>Book(s) for Reference</b>	
1	Beteille, A., <i>The Position of Women in Indian Society</i> , Government of India, Ministry of Information and Broadcasting, Publications Division, New Delhi, 1975.
2	<i>Guidelines for the Development of Women Studies in Indian Universities and College</i> , New Delhi UGL 1997.
3	<i>Guidelines for the Development of Women's Studies</i> , New Delhi, UGL, 1993.
4	Jain D., (ed.) <i>Indian Women</i> , Government of India, Ministry of Information and Broadcasting, Publications Division, New Delhi, 1975.
5	Richardson, Diane and Victoria Robinson, <i>Introduction to Women Studies Feminist Theory and Practice</i> , London, 1983.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=456">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=456</a> Paper 01 to 15 (All modules)
2	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=828">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=828</a> Subject-Human Rights and Duties, Paper 1 to 35, Module 1 to 22.
4	<a href="https://shodhganga.inflibnet.ac.in/bitstream/10603/118048/13/13_chapter%203.pdf">https://shodhganga.inflibnet.ac.in/bitstream/10603/118048/13/13_chapter%203.pdf</a> Women Studies its concepts and Growth in India.
10. Course Designed By: <b>Dr. S.ZNIAZUDEEN</b> , Assistant Professor in History, Sri Vasavi College, Erode. niazudeensz78@gmail.com	

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	M	L	L	S
CO2	S	M	S	S	S	S	S	L	S	S
CO3	S	S	S	S	M	S	S	L	M	S
CO4	S	S	S	S	M	S	S	L	S	S
CO5	S	S	S	S	M	S	S	L	S	S

\*S-Strong; M-Medium; L-Low

**SPECIAL ELECTIVE OPTION-2**

**HUMAN RIGHTS**

Course code	HUMAN RIGHTS				L	T	P	C
Special Elective (Option-2)					3	0	0	3
Pre-requisite	Basic knowledge in Human rights				Syllabus revision		2021-2022	
<b>Course Objectives:</b>								
The main objectives of this course are:								
1. To acquaint the students about the concept of human rights and its importance.								
2. To learn the importance of human rights and self respect.								
3. To understand the principles of liberty, equality and social justice.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Remember the concept of natural rights.							K1
2	Understand the historical growth of the idea of human rights.							K2
3	Assess the importance of Human Rights and respect the rights of others.							K3
4	Analyze the issues and challenges of Human Rights.							K4
5	Evaluate the role of various organization in protection of Human Rights.							K6
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create</b>								
<b>Unit:1 THEORIES OF HUMAN RIGHTS &amp; UDHR 18 hours</b>								
Concepts and theories of Human Rights – Universal Declaration of Human Rights – International Covenants on Economic, Social, and Cultural Rights – Optional Protocols.								
<b>Unit:2 INDIAN CONSTITUTION &amp; HUMAN RIGHTS 18 hours</b>								
Indian Constitutional Guarantee on Human Rights – Directive Principles of State Policy – Civil and Political Rights.								
<b>Unit:3 WOMEN’S RIGHTS &amp; RIGHT TO INFORMATION 18 hours</b>								
Women’s rights – Prisoner’s Rights – Children’s Rights – Judiciary and Human Rights- Right to Information.								
<b>Unit:4 NON-GOVERNMENT HUMAN RIGHTS ORGANISATIONS 17 hours</b>								
Human Rights and International organizations: Amnesty International – Asia Watch- Hot Line - Human Rights and National Organizations – Media and Human Rights.								
<b>Unit:5 UNO &amp; NATIONAL HUMAN RIGHTS COMMISSION IN INDIA 17 hours</b>								
United Nations and enforcement of Human Rights – Protection of Human Rights Act 1993 – National Human Rights Commission – State Human Rights Commission - Human Rights Courts.								

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Book(s) for Study</b>		
1	Adil Yasin, Archana Upadhyay, <i>Human Rights</i> , Akansha Publishing House, New Delhi, 2004.	
2	<i>Human Rights</i> , National Book Trust, New Delhi, 1998.	
<b>Book(s) for Reference</b>		
1	Das Jatindra Kumar, <i>Human Rights Law and Practice</i> , PHI, 2016.	
2	Lina Gonsalves, <i>Women and Human Rights</i> , APH Publishing Corporation, 2001.	
3	Nirmal,C.J., <i>Human Rights in India: Historical, social and Political</i> , Oxford & IBH, New Delhi, 2000.	
4	Sudhi Kapoor, <i>Human Rights in the 21st Century</i> , Mangal deep Publications, Jaipur,2003.	

<b>Magazines</b>	
1	<i>Economic and Political Weekly, Bombay.</i>
2	<i>The Lawer, Bombay.</i>
3	<i>Human Rights Today, Colombia University.</i>
4	<i>International Instruments of Human Rights, UN Publication.</i>
5	<i>Dalit Voice.</i>
6	<i>Amnesty International Report</i>
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://en.wikipedia.org/wiki/Human_rights">https://en.wikipedia.org/wiki/Human_rights</a>
2	<a href="http://www.humanrights.is/en/human-rights-education-project/human-rights-concepts-ideas-and-fora/part-i-the-concept-of-human-rights/definitions-and-classifications">http://www.humanrights.is/en/human-rights-education-project/human-rights-concepts-ideas-and-fora/part-i-the-concept-of-human-rights/definitions-and-classifications</a>
3	<a href="https://www.un.org/en/universal-declaration-human-rights/">https://www.un.org/en/universal-declaration-human-rights/</a>
Course Designed By: <b>Prof. THANGAVEL.M</b> , Asst. Prof. of History, Sri Vasavi College, Erode. E-mail ID thangavelhistoryvc@gmail.com.	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	S	M	S	S
<b>CO2</b>	S	S	S	S	M	S	S	L	S	S
<b>CO3</b>	S	S	M	M	M	S	S	L	M	S
<b>CO4</b>	S	S	M	M	M	M	M	L	S	S
<b>CO5</b>	S	S	M	M	M	M	S	L	S	S

\*S-Strong; M-Medium; L-Low

**FOURTH SEMESTER  
 SPECIAL ELECTIVE OPTION-3  
 JOURNALISM AND MASS COMMUNICATION**

Course code	TITLE OF THE COURSE	L	T	P	C
Special Elective (Option-3)	<b>JOURNALISM AND MASS COMMUNICATION</b>	4	-	-	4
<b>Pre-requisite</b>	<b>Basic knowledge about journalism at undergraduate level</b>	<b>Syllabus revision</b>		<b>2021-2022</b>	
<b>Course Objectives:</b>					
The main objectives of this course are to:					
1. To educate the students about development and growth of Journalism and Mass communication.					
2. To train the students for reporting, news writing and editing.					
3. To acquaint about the role of press in freedom struggle and freedom of press.					
<b>Expected Course Outcomes:</b>					
On the successful completion of the course, student will be able to:					
1	To remember the role of press in obtaining, preserving and exercising freedom of expression and thought.				K1
2	To understand the course of Indian journalism.				K2
3	To apply the tools of journalism and mass communication.				K3
4	To analyze the components and genuinity of the news and social media.				K4
5	To create news agency or to take up freelance journalism.				K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>					
<b>Unit:1</b>	<b>EVOLUTION OF INDIAN JOURNALISM</b>	<b>15-- hours</b>			
Basic concepts-History of the press in India.-Role of the Press in Freedom Movement..					
<b>Unit:2</b>	<b>COURSE OF INDIAN JOURNALISM</b>	<b>15-- hours</b>			
Leading Newspapers of India (Tamil - English)-Freedom of the Press- Brief history of Tamil Journalism.					
<b>Unit:3</b>	<b>REPORTING AND EDITING</b>	<b>15-- hours</b>			
Principles of Reporting - Definitions, Components and sources of news. Writing the news - types of Lead, body.Principles of Editing - Editing techniques.					
<b>Unit:4</b>	<b>WRITING AND TRENDS</b>	<b>12-- hours</b>			
Writing Headlines and types of Headlines. Law of Defamation. Recent trends in Indian press-news agencies.					
<b>Unit:5</b>	<b>TOOLS OF MASS COMMUNICATION</b>	<b>12-- hours</b>			
Tools of Mass Communication: Newspapers, Magazines, Radio, TV, Films, Internet, mobiles. Advertising, Public Relations & Public Affairs, Traditional & Folk Media, Media and modern society, Media and democracy.					
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>			
Expert lectures, online seminars – webinars					

	Total Lecture hours	75-- hours
<b>Book(s) for Study</b>		
1	Sinha, K.K., <i>Business Communication</i> , Galgotia Publishing Company.	
2	Mehta, D.S., <i>Mass Communication Journalism in India</i> .	
3	Kamath, M.V., <i>Professional Journalism</i> , Vikas Publishing, New Delhi.	
<b>Book(s) for Reference</b>		
1	MohitMoitra, <i>A History of Indian Journalism</i> , National Book Agency.	
2	Srivastava, K.M., <i>News Reporting and Editing</i> , Sterling Publishers Pvt. Ltd., 2003.	
3	Rangaswamy Parthasarathi, <i>Journalism in India</i> , Sterling Publishing, New Delhi.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://en.wikipedia.org/wiki/Freedom_of_expression_in_India">https://en.wikipedia.org/wiki/Freedom_of_expression_in_India</a>	
2	<a href="http://ndl.iitkgp.ac.in/">http://ndl.iitkgp.ac.in/</a>	
3	<a href="https://www.youtube.com/watch?v=YBC0VBAG9SY&amp;t=43s">https://www.youtube.com/watch?v=YBC0VBAG9SY&amp;t=43s</a>	
4	<a href="https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=24">https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=24</a>	
Course Designed By: <b>PROF. R. PRAKASH</b> , Assistant Professor in History, Sri Vasavi College, Erode. E-mail ID <a href="mailto:prakashero80@gmail.com">prakashero80@gmail.com</a>		

Mapping with Programme Outcomes										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	L	L	L	M	S
CO2	S	M	S	S	M	L	L	L	M	S
CO3	L	L	M	M	L	L	L	L	L	S
CO4	S	S	M	M	L	L	L	L	L	S
CO5	L	L	S	S	L	L	L	L	M	S

\*S-Strong; M-Medium; L-Low

**FOURTH SEMESTER**

**SPECIAL ELECTIVE OPTION-4  
HISTORY OF U.S.A FROM 1865 A.D. TO 1974 A.D.**

Course code	TITLE OF THE COURSE			L	T	P	C
Special Elective(Option-4)	HISTORY OF U.S.A FROM 1865 A.D. TO 1974 A.D.			3	1	-	4
Pre-requisite	Basic knowledge of world history at U.G. level			Syllabus rsion		2021- 2022	
<b>Course Objectives:</b>							
The main objectives of this course are:							
1. To acquaint the learners about the history of the emergence of U.S.A. as a world power.							
2. To give insight about the growth of Big Business.							
3. To learn about the policies of American Presidents and their role in making USA as a powerful nation.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recall the events of Civil War, Reconstruction, Rise of Big Business, Cold War.						K1
2	Understand the impact of Civil War, World War I & II and the Cold War in world history.						K2
3	Explain the American Imperialism and its emergence as a super power.						K3
4	Analyze the policies of the various presidents of USA and its impacts.						K4
5	Evaluate the role of USA in world politics.						K5
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>RECONSTRUCTION</b>					<b>15-- hours</b>	
America after Civil War: Reconstruction – Emancipation of the Negroes.							
<b>Unit:2</b>	<b>RISE OF BIG BUSINESS</b>					<b>15-- hours</b>	
Rise of Big Business: Railroad – Oil – Steel – John D.Rockfeller – Andrew Carnegie – Populist Movement							
<b>Unit:3</b>	<b>AMERICAN IMPERIALISM</b>					<b>15-- hours</b>	
Labour Movement – Urbanization and its impact – Growth of American Imperialism – The Spanish American War.							
<b>Unit:4</b>	<b>PROGRESSIVE ERA</b>					<b>14-- hours</b>	
Theodore Roosevelt – William Howard Taft – Woodrow Wilson – America and First World War – the Great Crash – F.D.Roosevelt and New Deal.							
<b>Unit:5</b>	<b>COLD WAR</b>					<b>14-- hours</b>	
America and Second World War – Cold War- Truman – D.Eisenhower – John F.Kennedy – Nixon – Water Gate Scandal.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
America in World Affairs, Racism, Expert lectures, online seminars - webinars							
					<b>Total Lecture hours</b>		<b>75-- hours</b>
<b>Book(s) for Study</b>							



1	Subrhamanian, N., <i>History of the United States of America</i> , Ennes Publications, Madurai, 1990, 2 <sup>nd</sup> Ed.
2	Majumdar, R.K, & Srivastava, A.N., <i>History of United States of America</i> , SBD Publications & Distributors, New Delhi, 2001
<b>Book(s) for Reference</b>	
1	David, A. Shannon, <i>Twentieth Century America, The Progressive Era Vol.I</i> , Rand McNolly, 1977.
2	Hendry Bamford Parkes, <i>The United States of America: A History</i> , Scientific Book Agency, 1975.
3	Joshi, P.S., Gholkar, <i>History of United States of America, 1900 – 1945</i> . A.D. S. Chand & Co., New Delhi, 1980
4	Richard Hofstadler, Ed, <i>The American Republic Vol. II</i> , Pentice Hal of India, New Delhi, 1965.
5	Richard N. Current, Harry Williams, & Frank Freidel - <i>American History: A Survey Since 1865, Vol II</i> , Scientific Book Society, New Delhi, 1975.

<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://en.wikipedia.org/wiki/History_of_the_United_States">https://en.wikipedia.org/wiki/History_of_the_United_States</a>
2	<a href="https://ocw.mit.edu/courses/history/">https://ocw.mit.edu/courses/history/</a>
Course Designed By: <b>DR.R.SHANGAMESWARAN</b> , Assistant Professor of History, Chikkanna Government Arts College, Tirupur. E-mail ID <a href="mailto:Shangamesh75@gmail.com">Shangamesh75@gmail.com</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	S	S	S	S	M	S	S	M	S	M
<b>CO3</b>	S	S	S	S	M	S	S	M	S	M
<b>CO3</b>	S	S	S	S	M	S	S	M	S	M
<b>CO4</b>	S	S	S	S	M	S	S	M	S	M
<b>CO5</b>	S	S	S	S	M	S	S	M	S	M

\*S-Strong; M-Medium; L-L



# **PROVIDENCE COLLEGE FOR WOMEN**

**(Autonomous)**

**Re-accredited by NAAC with 'A' Grade Coonoor -The  
Nilgiris**

## **DEPARTEMENT OF MATHEMATICS**

**B.Sc Mathematics –Syllabus and Scheme**

**2022-Onwards**

### Program Educational Objectives (PEOs)

The **B. Sc. Mathematics** program describe accomplishments that graduates are expected to attain within five to seven years after graduation

PEO1	Acquire knowledge in functional areas of Mathematics and apply in all the fields of learning.
PEO2	Recognize the need for lifelong learning and demonstrate the ability to explore some mathematical content independently.
PEO3	Employ mathematical ideas encompassing logical reasoning, analytical, numerical ability, theoretical skills to model real-world problems and solve them.
PEO4	Develop critical thinking, creative thinking, self confidence for eventual success in career.
PEO5	Analyze , interpret solutions and to enhance their Entrepreneurial skills, Managerial skill and leadership
PEO6	To prepare the students to communicate mathematical ideas effectively and develop their ability to collaborate both intellectually and creatively in diverse contexts.
PEO7	Rewarding careers in Education, Industry, Banks, MNCs and pursue higher studies

**Program Specific Outcomes (PSOs)**

After the successful completion of **B. Sc. Mathematics** program, the students are expected to

PSO1	Maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for extended learning.
PSO2	Identify the applications of Mathematics in other disciplines and society.
PSO3	Develop an in-depth knowledge in Mathematics appreciating the connections between theory and its applications.
PSO4	Demonstrate their mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
PSO5	Develop mathematical aptitude and the ability to think abstractly.
PSO6	Learn independently and improve one's performance.
PSO7	Students are equipped to appear competitive examinations.

<b>Program Outcomes (POs)</b>	
On successful completion of the <b>B. Sc. Mathematics</b> program	
PO1	Students are empowered with analytical and logical skills-to formulate results and construct mathematical argument.
PO2	Ability to organize, analyze and interpret data accurately in both academic and non -academic context.
PO3	Demonstrate effective communication of mathematical ideas and creative thinking skills to facilitate solving real world problems as a team and independently.
PO4	Appreciate and identify the connections between Mathematics and other disciplines.
PO5	Competency to obtain employment in education, public and private sectors..
PO6	Identify the area of interest for extended learning from the understanding gained from the domain and allied areas of Mathematics.
PO7	Develop mathematical aptitude and make critical observations.
PO8	Garner innovative ideas to face global challenges.
PO9	Instill a sense of responsibility in tackling professional and social issues ethically.
PO10	Trigger their passion for research in unexplored areas of Mathematics.

## Scheme of Mathematics

Part	Title of the Course	Hours/ Week	Examination				Credits
			Duration in Hours	Maximum Marks			
				CIA	CEE	Total	
<b>Semester I</b>							
I	Language – I	6	3	50	50	100	4
II	English – I	6	3	50	50	100	4
III	Core Paper I - Classical Algebra	4	3	50	50	100	4
III	Core Paper II-Calculus	5	3	50	50	100	4
III	Allied A : Paper I Physics I	7	3	50	50	100	4
IV	Environmental Studies	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>	<b>22</b>
<b>Semester II</b>							
I	Language – II	6	3	50	50	100	4
II	English – II	6	3	50	50	100	4
III	Core Paper III - Analytical Geometry	4	3	50	50	100	4
III	Core Paper IV-Trigonometry, Vector Calculus and Fourier Series	5	3	50	50	100	4
III	Allied A: Paper II – Physics II	5	3	30	45	75	3
III	Allied B - Paper II Physics ( PracticalPaper )	2	3	25	25	50	2
IV	Value Education – Human Rights	2	3	-	50	50	2
<b>Total</b>		<b>30</b>		<b>250</b>	<b>300</b>	<b>550</b>	<b>22</b>
<b>Semester III</b>							
I	Language – III	6	3	50	50	100	4
II	English – III	6	3	50	50	100	4
III	Core Paper V- Differential Equations and Laplace Transforms.	3	3	50	50	100	4
III	Core Paper VI- Statics	3	3	50	50	100	4
III	Allied B : Paper I – Chemistry I	7	3	30	45	75	3
IV	Skill based Subject - Operations Research –I	3	3	30	45	75	3
IV	Basic Tamil / Advanced Tamil (OR)Non-major elective - I (Yoga for Human Excellence) / Women’s Rights	2	3		50	50	2
<b>Total</b>		<b>30</b>		<b>260</b>	<b>340</b>	<b>600</b>	<b>24</b>

<b>Semester IV</b>							
I	Language – IV	6	3	50	50	100	4
II	English – IV	6	3	50	50	100	4
III	Core Paper VII-Dynamics	3	3	50	50	100	4
III	Core Paper VIII- Programming in C	2	3	30	45	75	3
III	Core Paper VIII -Programming in C Practical	1	3	10	15	25	1
III	Allied B - Paper II Chemistry II	5	3	30	45	75	3
III	Allied B - Paper II Chemistry (For Practical Paper )	2	3	25	25	50	2
IV	Skill based Subject - Operations Research – Paper II	3	3	30	45	75	3
IV	Tamil /Advanced Tamil (OR) Non-major elective -II (General Awareness)	2	3		50	50	2
<b>Total</b>		<b>30</b>		<b>275</b>	<b>375</b>	<b>650</b>	<b>26</b>
<b>Semester V</b>							
III	Core Paper IX-Real Analysis-I	5	3	50	50	100	4
III	Core Paper X- Complex Analysis-I	6	3	50	50	100	4
III	Core Paper XI- Modern Algebra-I	6	3	50	50	100	4
III	Core Paper XII- Discrete Mathematics	5	3	50	50	100	4
III	Elective I – Numerical Methods I	5	3	30	45	75	3
IV	Skill based Subject - Operations Research - Paper III	3	3	30	45	75	3
<b>Total</b>		<b>30</b>		<b>260</b>	<b>290</b>	<b>550</b>	<b>22</b>
<b>Semester VI</b>							
III	Core Paper XIII - Real Analysis-II	5	3	50	50	100	4
III	Core Paper XIV - Complex Analysis-II	6	3	50	50	100	4
III	Core Paper XV -Modern Algebra-II	6	3	50	50	100	4
III	Elective II – Numerical Methods II	5	3	30	45	75	3
III	Elective III – Programming in C++	5	3	50	50	100	4
IV	Skill Based Subject - Operations Research- Paper IV	3	3	30	45	75	3
V	Extension Activities / Swachh Bharath			50		50	2
<b>Total</b>		<b>30</b>		<b>310</b>	<b>290</b>	<b>600</b>	<b>24</b>
<b>Grand Total</b>		<b>180</b>		<b>1605</b>	<b>1895</b>	<b>3500</b>	<b>140</b>
<b>All computer papers have theory and practical exams #</b>							
<b>Theory</b>				30	45	75	<b>100</b>
<b>Practicals</b>				10	15	25	





**First Semester**



Course code	CLASSICAL ALGEBRA			L	T	P	C
Core/Elective/Supportive	Core Paper – I			4	-	-	4
Pre-requisite	Knowledge of Limits			Syllabus version		2022-onwards	
<b>Course Objectives:</b>							
1. To enable the students to learn Binomial, Exponential, Logarithmic series and their application to summation of series. 2. To study intensively the convergence and divergence of different types of series. 3. To demonstrate the standard methods to solve both polynomial and transcendental type equations.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Know the concept of Binomial, Exponential, Logarithmic series and their application to summation of series.					K1	
CO2	Acquire a clear knowledge regarding methods to find an approximate roots of the equations.					K2	
CO3	Apply the appropriate tests to find the convergence or divergence of an infinite series.					K3	
CO4	Apply Descartes's rule of signs to find the number of positive and negative roots if any in a polynomial equation.					K3	
CO5	Analyze the relation between roots and coefficients of the polynomial equations.					K4	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Summation Of Series Using Binomial And Exponential Theorem</b>					<b>12hours</b>	
Binomial, exponential theorems-their statements only- their immediate application to summation and approximation only.							
<b>Unit:2</b>	<b>Logarithmic Series, Convergence And Divergence Of Series</b>					<b>12 hours</b>	
Logarithmic series theorem-statement and proof-Immediate application to summation and approximation only. Convergency and divergency of series – definitions, elementary results-comparison tests-De -Alembert's and Cauchy's tests.							
<b>Unit:3</b>	<b>Absolute Convergence Of Series</b>					<b>12 hours</b>	
Absolute convergence-series of positive terms-Cauchy's condensation test-Raabe's test.							
<b>Unit:4</b>	<b>Theory Of Equations</b>					<b>12 hours</b>	
Roots of an equation- Relations connecting the roots and coefficients- transformations of equations-character and position of roots- Descarte's rule of signs-symmetric function of roots-Reciprocal equations.							
<b>Unit:5</b>	<b>Multiple Roots</b>					<b>12 hours</b>	
Multiple roots-Rolle's theorem - position of real roots of $f(x) = 0$ – Horner's method.							

		Total Lecture hours	60 hours
<b>Text Book(s)</b>			
1	Algebra- T.K .Manicavachasam Pillai, T.Natarajan& K.S Ganapathy , (S.Viswanatham Printers & Publishers Private Ltd-2006)		
<b>Reference Books</b>			
1	Mathematics for B.Sc. Branch I -Vol. I- P. Kandasamy and K.Thilagavathy (For B.Sc-I semester) (S. Chand and Company Ltd, New Delhi, 2004.)		
2	Algebra - N.P.Bali (Publisher: Laxmi Publications-New Delhi Edition 2010) .		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>			
1	<a href="https://www.brainkart.com/article/Introduction-to-Binomial,-Exponential-and-Logarithmic-series_35107/">https://www.brainkart.com/article/Introduction-to-Binomial,-Exponential-and-Logarithmic-series_35107/</a>		
2	<a href="http://www.jjernigan.com/172/ConvergenceDivergenceNotes.pdf">http://www.jjernigan.com/172/ConvergenceDivergenceNotes.pdf</a>		
3	<a href="http://home.iitk.ac.in/~psraj/mth101/lecture_notes/Lecture11-13.pdf">http://home.iitk.ac.in/~psraj/mth101/lecture_notes/Lecture11-13.pdf</a> <a href="https://maths4uem.files.wordpress.com/2015/09/1028-infinite-series.pdf">https://maths4uem.files.wordpress.com/2015/09/1028-infinite-series.pdf</a> <a href="https://ocw.mit.edu/high-school/mathematics/exam-prep/concept-of-series/series-convergence-divergence/">https://ocw.mit.edu/high-school/mathematics/exam-prep/concept-of-series/series-convergence-divergence/</a>		
Unit 1 : Chapter 3 – Section 1,10,11,14( Section 14 P.No 171-177 omitted Chapter 4 – Section 2,3			
Unit 2: Chapter 4 - Section 5- 7,9-11 Chapter 2 – Section 4.1-4.7( 4.6,4.7 Results only),Section 11 – 14, 16,17.			
Unit 3 : Chapter 2 : Section 15,18,21,22,23,24			
Unit 4: Chapter 6 : Section 15,15.1,15.2,15.3			
Unit 5 : Chapter 6 – Section 25,26,30 ,(29.4- Omitted)			

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	S	S	S	M	S	S
CO2	S	M	M	M	S	S	S	M	M	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	CALCULUS			L	T	P	C
Core/Elective/Supportive	Core Paper – II			5	-	-	4
Pre-requisite	Higher Secondary Level Mathematics.			Syllabus version		2022 onwards	
<b>Course Objectives:</b>							
To orient the students to get an idea of curvatures, Integration of different types of functions, its geometrical applications, double, triple and improper integrals.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Identify areas in Mathematics and other fields where Calculus is useful.						K1
CO2	Understand the concepts of Evolutes and Envelopes, methods to find curvature and evolutes.						K2
CO3	Apply the concept of change of variables in double and triple integrals.						K3
CO4	Apply double, triple integral to find the area and volume respectively.						K3
CO5	Apply the Beta and gamma function to solve the multiple integrals.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Curvature</b>					<b>15hours</b>	
Curvature-radius of curvature in Cartesian and polar forms-evolutes and envelopes- Pedal equations- total differentiation- Euler's theorem on homogeneous functions.							
<b>Unit:2</b>	<b>Integration</b>					<b>15 hours</b>	
Integration of $f'(x)/f(x)$ , $f'(x)\sqrt{f(x)}$ , $[(px+q)/\sqrt{(ax^2+bx+c)}]$ , $1/(\text{acos}x+\text{bsinx}+c)$ , $1/(\text{acos}^2x+\text{bsin}^2x+c)$ , Integration by parts-Bernoulli's Formula.							
<b>Unit:3</b>	<b>Evaluation Of Double And Triple Integrals</b>					<b>15 hours</b>	
Reduction formulae- problems- evaluation of double and triple integrals- applications to calculations of areas and volumes-areas in polar coordinates.							
<b>Unit:4</b>	<b>Change Of Variables In Double And Triple Integrals</b>					<b>15 hours</b>	
Change of order of integration in double integral- Jacobians- Change of variables in double and triple integrals.							
<b>Unit:5</b>	<b>Beta And Gamma Functions</b>					<b>15 hours</b>	
Beta and Gamma integrals-their properties, relation between them- evaluation of multiple integrals using Beta and Gamma functions - Improper Integrals.							
					<b>Total Lecture hours</b>	<b>75 hours</b>	
<b>Text Book(s)</b>							
1	Calculus Vol 1 - S. Narayanan and T.K.M. Pillai. (Viswanathan Publishers 2008)						
2	Calculus Vol 2- S. Narayanan and T.K.M. Pillai.( Viswanathan Publishers 2008)						
Unit 1 : Chapter 8, Chapter 10 - Vol 1 Unit 2 : Chapter 1 - Vol 2 Unit 3 : Chapter 1, Chapter 2,Chapter 5 – Vol 2 Unit 4 : Chapter 6 – Vol 2 Unit 5 : Chapter 7 – Vol 2							

<b>Reference Books</b>	
1	Mathematics for BSc – Vol I and. II - P. Kandasamy & K.Thilagarathy (S.Chand and Co-2004 )
2	A Text book of calculus- Shanthi Narayanan & J.N. Kapoor (S. Chand& Co.2014)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://ocw.mit.edu/resources/res-18-006-calculus-revisited-single-variable-calculus-fall-2010/study-materials/">https://ocw.mit.edu/resources/res-18-006-calculus-revisited-single-variable-calculus-fall-2010/study-materials/</a> <a href="https://www.whitman.edu/mathematics/calculus_online/chapter15.html">https://www.whitman.edu/mathematics/calculus_online/chapter15.html</a>
2	<a href="https://www.khanacademy.org/math/calculus-home">https://www.khanacademy.org/math/calculus-home</a>
3	<a href="https://www.sac.edu/FacultyStaff/HomePages/MajidKashi/PDF/MATH_150/Bus_Calculus.pdf">https://www.sac.edu/FacultyStaff/HomePages/MajidKashi/PDF/MATH_150/Bus_Calculus.pdf</a>
4	<a href="http://nptel.ac.in/courses/111104085/29">http://nptel.ac.in/courses/111104085/29</a>
5	<a href="http://www.math.odu.edu/~jhh/Volume-1.PDF">http://www.math.odu.edu/~jhh/Volume-1.PDF</a> <a href="http://www.math.odu.edu/~jhh/Volume-2.PDF">http://www.math.odu.edu/~jhh/Volume-2.PDF</a> <a href="https://www.math.cmu.edu/~wn0g/2ch6a.pdf">https://www.math.cmu.edu/~wn0g/2ch6a.pdf</a>
6	<a href="https://nptel.ac.in/courses/111/105/111105122/http://www.staff.ttu.ee/~lpallas/multipleintegrals.pdf">https://nptel.ac.in/courses/111/105/111105122/http://www.staff.ttu.ee/~lpallas/multipleintegrals.pdf</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	S	S	S
CO2	S	M	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



**Second  
Semester**



Course code	ANALYTICAL GEOMETRY			L	T	P	C
Core/Elective/Supportive	Core Paper – III			4	-	-	4
Pre-requisite	Basic Knowledge In Trigonometry & Vector Algebra.			Syllabus version		2022-onwards	
<b>Course Objectives:</b>							
Emphasis to enhance student knowledge in three dimensional analytical geometry and the geometrical aspects of three dimensional figs, viz, sphere, cone and cylinder.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Gain knowledge about the regular geometrical figures and their properties.						K1
CO2	Describe the geometric concepts.						K2
CO3	Find equation to tangent, normal at a point on a conic						K3
CO4	Analyze condition of tangency and find the tangent plane to the central conicoid						K4
CO5	Analyze conics to explain natural phenomenon						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Straight Lines</b>			<b>12 hours</b>			
Analytical Geometry 3D-Straight lines-coplanarity of straight line-shortest distance (S.D) and equation of S.D between two lines-simple problems.							
<b>Unit:2</b>	<b>Sphere</b>			<b>12 hours</b>			
Sphere: standard equation of sphere-results based on the properties of a sphere-tangent plane to a sphere- equation of a circle.							
<b>Unit:3</b>	<b>System Of Spheres</b>			<b>12 hours</b>			
Tangency of spheres- coaxial system of spheres- radical planes- Orthogonal spheres.							
<b>Unit:4</b>	<b>Cone And Cylinder</b>			<b>12 hours</b>			
Cone whose vertex is at the origin- envelope cone of a sphere-right circular cone-equation of a cylinder-right circular cylinder.							
<b>Unit:5</b>	<b>Conicoid</b>			<b>12 hours</b>			
Nature of a conicoid- standard equation of central conicoid –enveloping cone- tangent plane-condition for tangency –director Sphere- director plane .							
			<b>Total Lecture hours</b>			<b>60 hours</b>	
<b>Text Book(s)</b>							
1	Analytical Geometry - P. Durai Pandian & others (Emerald Publishers 1998). Unit 1:Chapter 4:Section 4.1-4.6 Unit 2 :Chapter 5: Section 5.1-5.5 Unit 4:Chapter 6: Section 6.1-6.3,6.6,6.7,6.11						
2	Solid Geometry- N.P. Bali (Laxmi Publications (P) Ltd, 2015) Unit 3 : Chapter 7 : art 16 – 25						

Unit 5 : Chapter 10 : art 1-9,19	
<b>Reference Books</b>	
1	Solid Geometry- M.L. Khanna (Jainath & Co Publishers, Meerut )
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://www.brainkart.com/article/Three-Dimensional-Analytical-Geometry_6453/">http://www.brainkart.com/article/Three-Dimensional-Analytical-Geometry_6453/</a>
2	<a href="http://egyankosh.ac.in/bitstream/123456789/11990/1/Unit-2.pdf">http://egyankosh.ac.in/bitstream/123456789/11990/1/Unit-2.pdf</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	S	S	S	S	S
CO2	S	M	S	S	S	S	S	M	S	S
CO3	S	M	S	M	M	M	S	S	S	S
CO4	S	M	S	S	M	S	M	S	S	S
CO5	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	TRIGONOMETRY, VECTOR CALCULUS AND FOURIER SERIES			L	T	P	C
Core/Elective/Supportive	Core Paper – IV			5	-	-	4
Pre-requisite	Knowledge In Vector Algebra, Differentiation, Integration			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
To enable the students to learn about the expansion of trigonometric, hyperbolic functions, vector calculus and the expansions of Fourier series .							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Know the expansion of trigonometric functions and hyperbolic functions.						K1
CO2	Acquire the basic knowledge of vector differentiation and vector integration.						K2
CO3	Determine and apply the important quantities associated with vector fields such as the divergence, curl and scalar potential.						K3
CO4	Understand and find Fourier series of a given periodic function.						K3
CO5	Examine line integral, surface integral, volume integral and inter-relations among them .						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Expansion In Series</b>					<b>15 hours</b>	
Expansion in Series – Expansion of $\cos^n \theta$ , $\sin^n \theta$ in a series of cosines and sines of multiples of $\theta$ – Expansions of $\cos n\theta$ , $\sin n\theta$ and $\tan n\theta$ in powers of sines, cosines and tangents – Expansion of $\sin \theta$ , $\cos \theta$ and $\tan \theta$ in powers of $\theta$ – hyperbolic functions and inverse hyperbolic functions.							
<b>Unit:2</b>	<b>Logarithm Of Complex Quantities And Summation Of Series</b>					<b>15 hours</b>	
Logarithm of complex quantities - summation of series – when angles are in arithmetic progression – $C + iS$ , method of summation – method of differences.							
<b>Unit:3</b>	<b>Vector Differentiation</b>					<b>15 hours</b>	
Scalar and vector fields – Differentiation of vectors – Gradient, Divergence and Curl-Solenoidal and irrotational vectors-Laplacian Operator.							
<b>Unit:4</b>	<b>Vector Integration</b>					<b>15 hours</b>	
Integration of vectors – line integral – surface integral – Green's theorem in the plane– (Statements only) – Gauss divergence theorem – (Statements only) – Stoke's theorem – (Statements only) - verification of the above said theorems.							
<b>Unit:5</b>	<b>Fourier Series</b>					<b>15 hours</b>	
Periodic functions – Fourier series of periodicity $2\pi$ .							
<b>Total Lecture hours</b>						<b>75 hours</b>	

<b>Text Book</b>		
1	Mathematics for B.Sc. Branch I, Volume I, II and IV - P. Kandasamy & K. Thilagavathi (S.Chand and Company Ltd, New Delhi, 2004.)	
Unit 1 : Chapter 6,Chapter 7 – Vol I Unit 2 : Chapter 2 - Vol II Unit 3 : Chapter 1, Chapter 2 – Vol IV Unit 4 : Chapter 3 – Vol IV Unit 5 : Chapter 1 (Fourier Series and its Application) – Vol IV		
<b>Reference Books</b>		
1	Vector Analysis -P. Durairandian, Laxmiduraipandian (Revised Edition-Reprint 2005 Emerald Publishers)	
2	Trigonometry -T.K. Manichavasagam Pillai and S.Narayanan (Viswanathan Publishers and Printers Pvt. Ltd 2009. )	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="http://www.math.odu.edu/~jhh/Volume-2.PDF">http://www.math.odu.edu/~jhh/Volume-2.PDF</a> <a href="http://www-math.mit.edu/~djk/18_01/chapter20/section03.html">http://www-math.mit.edu/~djk/18_01/chapter20/section03.html</a> <a href="https://www.whitman.edu/mathematics/calculus_online/chapter16.html">https://www.whitman.edu/mathematics/calculus_online/chapter16.html</a> <a href="http://www.mecmath.net/calc3book.pdf">http://www.mecmath.net/calc3book.pdf</a>	
2	<a href="http://www.nptelvideos.in/2012/11/mathematics-iii.html">http://www.nptelvideos.in/2012/11/mathematics-iii.html</a>	
3	<a href="https://nptel.ac.in/courses/111107108/1">https://nptel.ac.in/courses/111107108/1</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	S	S	M	M	S	S
CO2	S	M	S	S	M	M	M	S	M	S
CO3	S	M	S	S	M	M	M	S	S	S
CO4	S	S	S	S	S	S	S	S	S	M
CO5	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



**Third Semester**



Course code	DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS			L	T	P	C
Core/Elective/Supportive	Core Paper – V			3	-	-	4
Pre-requisite	Knowledge Of Ordinary And Partial Derivatives			Syllabus Version	2022-onwards		
<b>Course Objectives:</b>							
To impart knowledge on the method of solving ordinary differential Equations of First Order and Second Order, Partial Differential equations, Laplace Transforms, its inverse and application of Laplace Transform to solve the first and second Order Differential Equations with constant coefficients.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Acquire knowledge to solve Differential and Partial Differential Equations.						K1
CO2	Solve higher order linear differential equations.						K2
CO3	Expose differential equation as a powerful tool in solving problems in Physical and Social sciences.						K3
CO4	Demonstrate competency to solve linear PDE by Lagrange's method						K3
CO5	Analyze the concepts of Laplace transforms and inverse Laplace transforms to solve ODE with constant coefficients.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Differential Equation Of First Order And Higher Degree.</b>					<b>9hours</b>	
Ordinary Differential Equations: Equations of First Order and of Degree Higher than one – Solvable for p, x, y– Clairaut's Equation – Simultaneous Differential Equations with constant coefficients of the form i) $f_1(D)x + g_1(D)y = \phi_1(t)$ ii) $f_2(D)x + g_2(D)y = \phi_2(t)$ where $f_1, g_1, f_2$ and $g_2$ are rational functions $D=d/dt$ with constant coefficients and $\phi_1, \phi_2$ explicit functions of t and explicit functions of t.							
<b>Unit:2</b>	<b>Higher Order Linear Differential Equation</b>					<b>9hours</b>	
Finding the solution of Second and Higher Order with constant coefficients with Right Hand Side is of the form $Ve^{ax}$ where V is a function of x – Euler's Homogeneous Linear Differential Equations.							
<b>Unit:3</b>	<b>Partial Differential Equations</b>					<b>9 hours</b>	
Partial Differential Equations: Formation of equations by eliminating arbitrary constants and arbitrary functions – Solutions of P.D Equations – Solutions of Partial Differential Equations by direct integration and Lagrange's Linear Equation							
<b>Unit:4</b>	<b>Laplace Transforms</b>					<b>9 hours</b>	
Laplace Transforms: Definition – Laplace Transforms of standard functions – Linearity property – First Shifting Theorem – Transform of $tf(t), f(t)/t, f'(t), f''(t)$ .							

<b>Unit:5</b>	<b>Inverse Laplace Transforms</b>	<b>9 hours</b>
Inverse Laplace Transforms – Applications to solutions of First Order and Second Order Differential Equations with constant coefficients.		
<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Book</b>		
1	Mathematics for B.Sc – Branch – I Volume III- P. Kandasamy & K. Thilagavathi (S. Chand and Company Ltd, New Delhi, 2004.)	
	Unit I	Ordinary Differential Equations : Chapter 1 & Chapter 3
	Unit II	Ordinary Differential Equations : Chapter 2 & Chapter 4
	Unit III	Partial Differential Equations : Chapter 1 section 1.1 -1.13,1.15
	Unit IV	Laplace Transforms : Chapter 1
	Unit V	Laplace Transforms : Chapter 1
<b>Reference Books</b>		
1	Calculus Vol III -S. Narayanan and T.K. Manickavasagam Pillai, (S. Viswanathan Printers and Publishers Pvt. Ltd, Chennai 1991 )	
2	Differential Equations -N.P. Bali( Laxmi Publication Ltd, New Delhi, 2004)	
3	Laplace and Fourier Transforms-Dr. J. K. Goyal and K.P. Gupta (PragatiPrakashan Publishers, Meerut, 2000 )	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111105035/">https://nptel.ac.in/courses/111105035/</a>	
2	<a href="http://www.nptelvideos.in/2012/11/mathematics-iii.html">http://www.nptelvideos.in/2012/11/mathematics-iii.html</a> <a href="https://www.digimat.in/nptel/courses/video/111108081/L02.html">https://www.digimat.in/nptel/courses/video/111108081/L02.html</a>	
3	<a href="https://www.math.ust.hk/~machas/differential_equations.pdf">https://www.math.ust.hk/~machas/differential_equations.pdf</a> . <a href="https://www.ijsr.net/archive/v2i1/ijsrn2013331.pdf">https://www.ijsr.net/archive/v2i1/ijsrn2013331.pdf</a> <a href="https://www.whitman.edu/mathematics/calculus_online/chapter17.html">https://www.whitman.edu/mathematics/calculus_online/chapter17.html</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	S	M	M	S	S
CO2	S	M	S	S	S	S	M	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	M	S	S	S	S	M	S	S	S
CO5	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	STATICS			L	T	P	C
Core/Elective/Supportive	Core Paper – VI			3	-		4
Pre-requisite	Basic Knowledge In Vector Algebra & Trigonometric Functions			Syllabus version		2022 onwards	
<b>Course Objectives:</b>							
1.To enable the students to realize the nature of forces and resultant forces when more than one force acts on a particle. 2.To know about the conditions of equilibrium of couples and coplanar forces.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Remember the various laws.						K1
CO2	Understand the concepts of forces and moments.						K2
CO3	Understand the concepts of equilibrium.						K2
CO 4	Apply the concepts of forces and moments.						K3
CO 5	Analyze the basics of coplanar forces, equilibrium of forces acting on a rigid body and solve the problems.						K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Law Of Forces</b>					<b>9 hours</b>	
Forces acting at a point – Parallelogram law-triangle law –Converse of Triangle law- Polygon Law of Forces- Lami’s Theorem. .							
<b>Unit:2</b>	<b>Resolution And Components Of Forces</b>					<b>9 hours</b>	
$(\lambda - \mu)$ theorem –Resolution of forces- Components of a force- Resultant of any number of Coplanar forces acting at a point- Conditions of equilibrium.							
<b>Unit:3</b>	<b>Parallel Forces, Moment And Couple</b>					<b>9 hours</b>	
Parallel Forces and Moments –Resultant of two parallel forces (Like and unlike)-Conditions of equilibrium of three coplanar forces- Moment of a force- Geometrical representation- Sign of the moment- Unit of moment – couples - Equilibrium of two couples- Equivalence of two couples.							
<b>Unit:4</b>	<b>Forces Acting On A Rigid Body</b>					<b>9 hours</b>	
Moment of a force about a point- Varignon’s Theorem - Coplanar forces acting on a rigid body – Theorem on three coplanar forces in equilibrium.							
<b>Unit:5</b>	<b>General Conditions Of Equilibrium Of A System Of Co-planar Forces</b>					<b>9 hours</b>	
Reduction of a system of coplanar forces to a single force and a couple - necessary & sufficient conditions of equilibrium only – Equation to the line of action of the resultant.							

	<b>Total Lecture hours</b>	<b>45 hours</b>
<b>Text Book</b>		

Statics -M.K.Venkataraman (Agasthiar Publications, Trichy, 1999.)	
Unit I	: Chapter 2 Section 2.1 -2.5,2.7 -2.9
Unit II	: Chapter 2 Section 2.10 -2.12,2.14 -2.16
Unit III	: Chapter 3 section 3.1 - 3.3,3.5,3.7, 3.9 - 3.12 Section 4.1-4.3
Unit IV	: Chapter 5 Section 5.1,5.2
Unit V	: Chapter 6 Section 6.1 -6.3,6.8,6.10

**Reference Books**

1	Statics -A.V.Dharmapadam.(S.Viswanathan Printers and Publishing Pvt., Ltd, 1993.)
2	Mechanics -P.Duraipandian and Laxmi Duraipandian.(S.Chand and Company Ltd, Ram Nagar, New Delhi -55, 1985. )
3	Statics -Dr.P.P.Gupta(Kedal Nath Ram Nath, Meerut, 1983-84)

**Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]**

1	<a href="https://nptel.ac.in/courses/112/105/112105164/">https://nptel.ac.in/courses/112/105/112105164/</a>
2	<a href="https://nptel.ac.in/courses/122/102/122102004/">https://nptel.ac.in/courses/122/102/122102004/</a>
3	<a href="https://www.khanacademy.org/science/ap-physics-1">https://www.khanacademy.org/science/ap-physics-1</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	S	S	M	M	S	S
CO2	S	M	S	S	M	M	M	M	M	S
CO3	S	M	S	S	M	M	M	S	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	Operations Research – Paper I			L	T	P	C
Core/Elective/Supportive	Skill Based Subject			3	-	-	3
Pre-requisite	Knowledge In Basic Mathematical Concepts			Syllabus version		2022-onwards	
<b>Course Objectives:</b>							
To familiarize students with the basic concepts, models and techniques for effective decision making , model formulation and applications.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Understand the basic concepts and application of operations research in various fields.						K1
CO 2	Know principles of construction of mathematical models of conflicting situations.						K2
CO 3	Analyze the relationship between a linear program and its dual.						K3
CO 4	Apply techniques constructively to make effective decisions in business and solve problems in industry.						K3
CO 5	Build and solve transportation problems.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Basics Of Operations Research &amp; Formulation Of L.P.P</b>					<b>9 hours</b>	
Origin and Development of O.R, Nature and Features of O.R–Scientific methods in O.R – O.R and Decision Making – Application of O.R- Uses and limitations of O.R - Linear Programming Problem – Formulation of L.P.P.							
<b>Unit:2</b>	<b>Linear Programming Problem -Simplex method</b>					<b>9 hours</b>	
Graphical solutions of L.P.P – Problems. Simplex Method – Problems.							
<b>Unit:3</b>	<b>Big-M &amp; Two Phase Method</b>					<b>9 hours</b>	
Charne’s Penalty Method (or) Big – M Method - Two Phase Simplex method – Problems.							
<b>Unit:4</b>	<b>Duality In L.P.P</b>					<b>9 hours</b>	
Duality in L.P.P – Concept of duality – Duality and Simplex Method – Problems .							
<b>Unit:5</b>	<b>Transportation Model</b>					<b>9 hours</b>	
The transportation Problems – Basic feasible solution by L.C.M – NWC- VAM- optimum solutions – unbalanced Transportation problems.							
					<b>Total Lecture hours</b>	<b>45 hours</b>	
<b>Text Book</b>							
1	Operations Research – Kantiswarup, P. K. Gupta, Man Mohan(S. Chand & Sons Education Publications, New Delhi, 12th Revised edition-2003) Unit 1: 1.1 – 1.4, 1.6, 1.9, 1.10, 2.2 – 2.4 Unit 2: 3.1 -3.3, 4.3 Unit 3: 4.4 Unit 4: 5.1 ,5.2, 5.3, 5.7, 5.9 Unit 5: 10.1,10.2, 10.8,10.9						



<b>Reference Books</b>	
1	Operations Research – Prem Kumar Gupta D. S. Hira(S. Chand & Company Ltd, Ram Nagar, New Delhi ,2014)
2	Operations Research Principles and Problems- S. Dharani Venkata Krishnan( Keerthi publishing house PVT Ltd.1994)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/111/102/111102012/">https://nptel.ac.in/courses/111/102/111102012/</a>
2	<a href="https://nptel.ac.in/courses/111/104/111104027/">https://nptel.ac.in/courses/111/104/111104027/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	S	M	M	M	S	S
CO2	S	M	S	S	S	S	S	M	M	S
CO3	S	S	S	S	M	M	S	S	S	S
CO4	S	S	S	S	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	M	S	S

\*S-Strong; M-Medium; L-Low



# **Fourth Semester**

Course code	DYNAMICS			L	T	P	C
Core/Elective/Supportive	Core Paper-VII			3	-	-	4
Pre-requisite	Knowledge In Forces And Vector Algebra			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
To impart knowledge about the projectile, Simple Harmonic Motion and understanding the notions of impact between two smooth spheres.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Remember the basic kinematics and dynamic concepts.						K1
CO 2	Describe the differential equation of Central Orbits .						K2
CO 3	Apply the concepts of projectiles to solve problems relating to the motion of a projectile.						K3
CO 4	To understand & apply the concepts of composition of simple harmonic motion in two directions.						K3
CO 5	Understand impulsive forces and analyze loss of K.E due to direct and oblique impact.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Projectiles</b>			<b>9hours</b>			
Path of a projectile-Greatest height-time of flight – Range -range on an inclined plane through the point of projection-Maximum range.							
<b>Unit:2</b>	<b>Central Orbits</b>			<b>9 hours</b>			
Radial and transverse components of velocity and acceleration – areal velocity of central orbits - Differential equation of central orbit in polar coordinates only.							
<b>Unit:3</b>	<b>Simple Harmonic Motion</b>			<b>9 hours</b>			
Amplitude, periodic time, phase-composition of two simple harmonic motions of the same period in a straight line and in two perpendicular lines.							
<b>Unit:4</b>	<b>Collision Of Elastic Bodies-Direct Impact Of Spheres</b>			<b>9hours</b>			
Impulsive force – Newton’s experimental law- Principle of conservation of momentum- Direct Impact on a smooth fixed plane -Direct impact of two smooth spheres- loss of kinetic energy during direct impact.							
<b>Unit:5</b>	<b>Oblique Impact Of Spheres</b>			<b>9 hours</b>			
Oblique impact of a smooth sphere on fixed smooth plane – oblique impact of two smooth spheres - Loss of Kinetic energy during oblique impact.							
			<b>Total Lecture hours</b>	<b>45 hours</b>			
<b>Text Book</b>							
1	Dynamics - M.K. Venkataraman (11th Ed. Agasthiar Publications, Trichy, 1994. )						

Unit I : Chapter VI Section 6.1- 6.8,6.12	
Unit II : Chapter XI Section 11.1-11.10	
Unit III : Chapter X Section 10.1 -10.3,10.6 -10.7	
Unit IV : Chapter VII Section 7.1-7.4 ,Chapter VIII Section 8.1-8.6	
Unit V : Chapter VIII Section 8.7 -8.8	
<b>Reference Books</b>	
1	Dynamics -A.V.Dharamapadam(S.Viswanathan Printers and Publishers Pvt., Ltd, Chennai, 1998 )
2	Dynamics -K.Viswanatha Naik and M.S.Kasi(Emerald Publishers, 1992)
3	Dynamics -Naryanamurthi( National Publishers, New Delhi, 1991 )
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/115/106/115106119/">https://nptel.ac.in/courses/115/106/115106119/</a>
2	<a href="https://www.askiitians.com/iit-jee-physics/mechanics/motion-of-projectile.aspx">https://www.askiitians.com/iit-jee-physics/mechanics/motion-of-projectile.aspx</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	S	S	S	S	S
CO2	M	M	M	M	M	S	M	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	M	M	M	M	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	PROGRAMMING IN C			L	T	P	C
Core/Elective/Supportive	Core Paper-VIII			2	-	-	3
Pre-requisite	Higher Secondary level Mathematics			Syllabus Version	2022-onwards		
<b>Course Objectives:</b>							
To impart the importance of C language, its structure, Data types, Operators of C, Various control statements, Arrays, different types of functions and practical problems.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Remember the importance of C language and datatypes.						K1
CO 2	Understand the basic structure, operators and statements of C language.						K2
CO 3	Understand decision control statements, loop control statements.						K2
CO 4	Apply the concepts of data types, operators, expressions, control statements, arrays, character arrays and strings to write the C code for a given algorithm.						K3
CO 5	Read, understand and trace the execution of programs written in C language.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Constants, Variables &amp; Data Types</b>					<b>6 hours</b>	
Introduction – Importance of C- Basic structure of C programme - Character set -Constants – Keywords and identifiers – Variables Data types – Declaration of variables – Assigning values to variables –Defining symbolic constants.							
<b>Unit:2</b>	<b>Operators &amp; Expressions</b>					<b>6 hours</b>	
Arithmetic operators - Relational operators - logical operators – assignment operators – increment and decrement operators –Conditional operators – Special operators – Arithmetic expressions –Evaluation of expressions –Precedence of arithmetic operators – Some computational problems –Type conversion in expressions – operator precedence and associating mathematical functions.							
<b>Unit:3</b>	<b>Managing Input -Output Operations , Decision Making And Branching</b>					<b>6 hours</b>	
Reading and Writing character – formatted input and output. Decision making with IF statement – Simple IF statement – The if ELSE statement - Nesting of IF ELSE statement – The ELSE IF ladder. The Switch statement –The ? Operator –The GOTO statement.							
<b>Unit:4</b>	<b>Decision Making And Looping</b>					<b>6 hours</b>	
The WHILE statement - the DO statement the FOR statement .							
<b>Unit:5</b>	<b>Arrays And Strings</b>					<b>6 hours</b>	
One, Two dimensional arrays – initializing two dimensional arrays – Multidimensional arrays – Declaring and initializing string variables –reading strings from terminal – Writing strings on the screen – Arithmetic operations on characters.							

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	<b>Total Lecture hours</b>	<b>30 hours</b>
<b>Text Book</b>		
1	Programming in ANSI C -E.Balagurusamy( Tata McGraw –Hill Publishing Company limited, New Delhi, Sixth Edition 2013) Unit 1:Chapter 1: 1.1-1.2,1.8 Chapter 2: 2.2,2.4-2.8,2.10,2.11. Unit 2:Chapter 3:2-3.7 ,3.9-3.16 Unit 3:Chapter 4:4.2-4.5 Chapter 5: 5.2 - 5.9 Unit 4:Chapter 6: 6.2-6.4 Unit 5:Chapter 7: 7.2,7.5-7.7 Chapter 8:8.2-8.5	
<b>Reference Books</b>		
1	Programming with C (Schaum's outline series)- Byron Gottfried (TataMcGrawHill publishing company -1998.)	
2	Programming with Ansi and Turbo C -Ashok N.Kamthane ( Pearson Education publishers, 2002)	
3	The spirit of C -HenryMullish and Herbert L cooper (Jaico publisher , 1996. )	
4	The Ansi C- Brian W. Kernighan, Dennis M.Ritchie (Published by Prentice- Hall of India Private Limited, M-97,New Delhi- 110001 ,Second edition ,October 1992)	
5	Ansi C: With Microsoft C 5.1 and Quick C 2.0 - C. Balasubramanian.( Tata McGraw-Hill Publishing company limited, New Delhi. )	
6	Programming In C - Kris A.Jamsa (Galgotia Publications Pvt.ltd. 1992)	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/104/106104128/">https://nptel.ac.in/courses/106/104/106104128/</a>	
2	<a href="https://nptel.ac.in/courses/106/105/106105171/">https://nptel.ac.in/courses/106/105/106105171/</a>	

<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	M	M	M	S	S	M	M	M	S	S
<b>CO2</b>	S	S	M	M	S	M	M	S	M	S
<b>CO3</b>	S	M	M	M	S	S	M	S	S	S
<b>CO4</b>	S	S	S	S	S	M	S	S	S	M
<b>CO5</b>	S	S	S	S	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

<b>Course code</b>		<b>PROGRAMMING IN C-( PRACTICAL)</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>Core Paper VIII ( Practical)</b>	-	-	1	1
<b>Pre-requisite</b>		<b>Knowledge in C</b>	<b>Syllabus Version</b>		<b>2023 onwards</b>	

### PRACTICAL LIST

1. Write a C program to generate 'N' Fibonacci number.
2. Write a C program to print all possible roots for a given quadratic equation.
3. Write a C program to calculate the statistical values of mean, median.
4. Write a C program to calculate the statistical values of Standard Deviation and variance of the given data .
5. Write a C program to sort a set of numbers.
6. Write a C program to sort the given set of names.
7. Write a C program to find factorial value of a given number 'N' using recursive function call.
8. Write a C program to find the product of two given matrix

Course code	OPERATIONS RESEARCH – PAPER II			L	T	P	C
Core/Elective/Supportive	SKILL BASED SUBJECT			3	-	-	3
Pre-requisite	Knowledge In Basic Mathematical Concepts			Syllabus Version		2022-onwards	
<b>Course Objectives:</b>							
To impart knowledge in Assignment Problems, Game theory, performance measures of queues and optimal use of Inventory.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Identify the importance of stocks, the reasons for holding stock in an organization, determine the optimal order quantity for models .						K1
CO 2	Explain the various costs related to inventory system.						K2
CO 3	Apply game theory concepts to articulate real-world situations by identifying, analyzing and practicing strategic decisions .						K3
CO 4	Apply and extend queueing models to analyze real world systems.						K4
CO 5	Build and solve assignment model.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Assignment Model</b>					<b>9 hours</b>	
The Assignment Problems – Assignment algorithm – optimum solutions – Unbalanced Assignment Problems.							
<b>Unit:2</b>	<b>Game Theory</b>					<b>9 hours</b>	
Game Theory – Two person zero sum game – The Maximin – Minimax principle – problems - Solution of 2 x 2 rectangular Games – Domination Property – (2 x n) and (m x 2) graphical method – Problems.							
<b>Unit:3</b>	<b>Queueing Model</b>					<b>9 hours</b>	
Queueing Theory – Introduction – Queueing system – Characteristics of Queueing system – Symbols and Notations – Classifications of queues – Problems in (M/M/1) : ( $\infty$ /FIFO)							
<b>Unit:4</b>	<b>Multi Channel Queueing Models</b>					<b>9 hours</b>	
Problems in (M/M/1):(N/FIFO); (M/M/C) : ( $\infty$ /FIFO); (M/M/C) : (N/FIFO) Models.							
<b>Unit:5</b>	<b>Inventory Models</b>					<b>-9 hours</b>	
Inventory control – Types of inventories – Inventory costs – EOQ Problem with no shortages – Production problem with no shortages – EOQ with shortages – Production problem with shortages – EOQ with price breaks.							
					<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Book</b>							



1	Operations Research – Kantiswarup, P. K. Gupta, Man Mohan(S. Chand & Sons Education Publications, New Delhi, 12th Revised edition,2003) Unit 1: 11.1,11.2,11.3 Unit 2: 17.1 – 17.6 Unit 3: 21.1 – 21.4, 21.7,(21.9 – Model I) Unit 4 : 21.9 – Model III, Model V , Model VI Unit 5: 19.1, 19.2, 19.6, 19.9, 19.10, 19.11 ,19.12
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<b>Reference Books</b>	
1	Operations Research – Prem Kumar Gupta D. S. Hira(S. Chand & Company Ltd, Ram Nagar, New Delhi, 2014)
2	Operations Research Principles and Problems- S. Dharani Venkata Krishnan (Keerthi publishing house PVT Ltd.1994)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/111/102/111102012/">https://nptel.ac.in/courses/111/102/111102012/</a>
2	<a href="https://youtu.be/zADj0k0waFY">https://youtu.be/zADj0k0waFY</a> <a href="https://youtu.be/xvDdrswAj8M">https://youtu.be/xvDdrswAj8M</a> <a href="https://www.youtube.com/watch?v=xVPoWkkQTrQ">https://www.youtube.com/watch?v=xVPoWkkQTrQ</a> <a href="https://www.youtube.com/watch?v=7kDtTAnvuww">https://www.youtube.com/watch?v=7kDtTAnvuww</a> <a href="https://www.youtube.com/watch?v=IfLsPHKk51w">https://www.youtube.com/watch?v=IfLsPHKk51w</a>
3	<a href="https://nptel.ac.in/courses/109/103/109103021/">https://nptel.ac.in/courses/109/103/109103021/</a>
4	<a href="https://nptel.ac.in/courses/110/105/110105082/">https://nptel.ac.in/courses/110/105/110105082/</a> <a href="https://nptel.ac.in/courses/110/106/110106045/">https://nptel.ac.in/courses/110/106/110106045/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	M	S	M	M	M	S	S
CO2	M	M	M	M	S	S	M	M	M	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	M	S	M	S	M

\*S-Strong; M-Medium; L-Low



**Fifth Semester**

Course code	REAL ANALYSIS - I			L	T	P	C
Core/Elective/Supportive	Core Paper – IX			5	-	-	4
Pre-requisite	Knowledge in the basic properties of real numbers			Syllabus Version	2022-onwards		
<b>Course Objectives:</b>							
Aimed at exposing there a number systems that underpin the development of real analysis and in understanding various physical phenomena.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Remember the basic topological properties of subsets of the real numbers.						K1
CO 2	Understand the fundamental properties of the real numbers and analyze the real number system.						K2
CO 3	Learn the concept of limits, sequence, continuity, convergent sequence in metric spaces appreciating the abstract ideas and their applicability .						K2
CO 4	Have the proficiency in the formulation and construction of proofs of basic results in real analysis.						K3
CO 5	Demonstrate skills in communicating Mathematics and learn basic techniques and examples in analysis to be well prepared for extended learning .						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>The Real And Complex Number Systems</b>					<b>15 hours</b>	
Introduction -the field axioms, the order axioms –integers –the unique Factorization theorem for integers –Rational numbers –Irrational numbers –Upper bounds, maximum Elements, least upper bound –the completeness axiom –some properties of the supremum –properties of the integers deduced from the completeness axiom- The Archimedian property of the real number system –Rational numbers with finite decimal representation of real numbers –absolute values and the triangle inequality –the Cauchy-Schwarz equality –plus and minus infinity and the extended real number system.							
<b>Unit:2</b>	<b>Basic Notions Of A Set Theory.</b>					<b>15 hours</b>	
Notations –ordered pairs –Cartesian product of two sets – Relations and functions – further terminology concerning functions –one–one functions and inverse –composite functions –sequences –similar sets-finite and infinite sets –countable and uncountable sets – uncountability of the real number system –set algebra –countable collection of countable sets.							
<b>Unit:3</b>	<b>Elements Of Point Set Topology</b>					<b>15 hours</b>	
Elements of point set topology: Euclidean space $\mathbb{R}^n$ –open balls and open sets in $\mathbb{R}^n$ . The structure of open sets in $\mathbb{R}^n$ –closed sets and adherent points –The Bolzano –Weierstrass theorem –the Cantor intersection Theorem							
<b>Unit:4</b>	<b>Covering &amp; Compactness</b>					<b>15 hours</b>	
Covering –Lindel of covering theorem –the Heine Borel covering theorem –Compactness in $\mathbb{R}^n$							

–Metric Spaces –point set topology in metric spaces –compact subsets of a metric space – Boundary of a set.		
<b>Unit:5</b>	<b>Limits And Continuity In Metric Spaces</b>	<b>15 hours</b>
Convergent sequences in a metric space –Cauchy sequences –Completeness sequences – complete metric Spaces. Limit of a function –Continuous functions –continuity of composite functions. Continuous complex valued and vector valued functions.		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book(s)</b>		
1	Mathematical Analysis-T.M.Apostol( 2nd ed., Narosa Publishing Company, Chennai, 1990.) Unit I Chapter 1 Sections 1.2, 1.3, 1.6 to 1.16, 1.18 to 1.20 Unit II Chapter 2 Sections 2.2 to 2.15 Unit III Chapter 3 Sections 3.2 to 3.9 Unit IV Chapter 3 Sections 3.10 to 3.16 Unit V Chapter 4 Sections 4.2 to 4.5, 4.8 to 4.10	
<b>Reference Books</b>		
1	Methods of Real Analysis -R.R. Goldberg.(NY, John Wiley, New York 1976. )	
2	Introduction to Topology and Modern Analysis- G.F.Simmons. (McGraw – Hill, New York, 1963.)	
3	A survey of Modern Algebra( 3rd Edition)-G.Birkhoff and MacLane. (Macmillian, New York, 1965. )	
4	Real Analysis - J.N.Sharma and A.R.Vasistha.( Krishna Prakashan Media (P) Ltd, 1997)	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/105/111105069/#">https://nptel.ac.in/courses/111/105/111105069/#</a>	
2	<a href="https://nptel.ac.in/courses/111/101/111101134/">https://nptel.ac.in/courses/111/101/111101134/</a>	
3	<a href="https://www.digimat.in/nptel/courses/video/111105098/">https://www.digimat.in/nptel/courses/video/111105098/</a>	
4	<a href="https://nptel.ac.in/courses/111/106/111106053/">https://nptel.ac.in/courses/111/106/111106053/</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	M	S	S
CO2	S	S	M	M	M	S	S	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	COMPLEX ANALYSIS - I			L	T	P	C
Core/Elective/Supportive	Core Paper – X			6	-	-	4
Pre-requisite	Knowledge in Calculus			Syllabus Version	2023 onwards		
<b>Course Objectives:</b>							
To equip the students with the understanding of the fundamental concepts of complex functions, analyticity, power series and complex integration.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO1	Learn techniques of complex analysis effectively to establish mathematical results.						K1
CO 2	Recognize the simple and multiple connected domains.						K2
CO 3	Investigate a function for its analyticity and find it series development.						K3
CO 4	Examine the relationship between conformal mapping and analytic functions						K4
CO 5	Compute contour integrals directly and by the fundamental theorem.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Complex Plane</b>					<b>18 hours</b>	
Complex number –Field of Complex numbers – Conjugation – Absolute value –Argument – Elementary Transformations i) $w=z + \alpha$ ii) $w = az$ iii) $w = 1/z$ .Fixed points -cross-ratio-invariance of cross-ratio under bilinear transformation –Definition of extended complex plane – Stereographic projection.							
<b>Unit:2</b>	<b>Analytic Functions</b>					<b>18 hours</b>	
Sets of Complex Points- closed sets-open sets- Complex Functions- Limit of a function – continuity –differentiability – Analytical function defined in a region –necessary conditions for differentiability –sufficient conditions for differentiability –Cauchy-Riemann equation in polar coordinates –Definition of entire function.							
<b>Unit:3</b>	<b>Power Series And Elementary Functions</b>					<b>18 hours</b>	
Absolute convergence –circle of convergence –Analyticity of the sum of power series in the Circle of convergence (term by term differentiation of a series) Elementary functions : Exponential, Logarithmic, Trigonometric and Hyperbolic functions.							
<b>Unit:4</b>	<b>Harmonic Functions And Conformal Mapping</b>					<b>18 hours</b>	
Definition and determination. Conformal Mapping: Isogonal mapping –Conformal mapping-Mapping $z \rightarrow f(z)$ , where $f$ is analytic, particularly the mappings. $w = e^z$ ; $w = z^2$ ; $w = \sin z$ ; $w = \cos z$ ; $w = z + 1/z$ .							

<b>Unit:5</b>	<b>Complex Integration</b>	<b>18 hours</b>
Simply and multiply connected regions in the complex plane. Integration of $f(z)$ from definition along a curve joining $z_1$ and $z_2$ . Proof of Cauchy's Theorem (using Goursat's lemma for a simply connected region). Statement of Cauchy's integral formula for higher derivatives -Morera's theorem.		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Complex Analysis -P. Duraipandian and Laxmi Duraipandian. (Emerald Publishers, Chennai –2, 1986. ) Unit I Chapter 1 Sections 1.1 to 1.3, 1.6 to 1.9 Chapter 2 Sections 2.1 to 2.2, 2.6 to 2.9. Chapter 7 Section 7.1 Unit II Chapter 3 Sections 3.1 -3.2 , Chapter 4 Sections 4.1 to 4.10 Unit III Chapter 6 Sections 6.1 to 6.11 Unit IV Chapter 6 Sections 6.12 to 6.13 Chapter 7 Sections 7.4, 7.6 to 7.9 Unit V Chapter 8 Sections 8.1 to 8.9	
<b>Reference Books</b>		
1	Complex Variable and Applications -Churchill and Others.( Tata McGraw Hill Publishing Company Ltd, 1974.)	
2	Theory of functions of Complex Variable –Santhinarayan (S. Chand and Company, Meerut, 1995.)	
3	Functions of Complex Variable -Tyagi B.S( 17th Edition, Pragati Prakasham Publishing Company Ltd, Meerut, 1992-93 )	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/103/111103070/">https://nptel.ac.in/courses/111/103/111103070/</a>	
2	<a href="https://nptel.ac.in/courses/111/107/111107056/">https://nptel.ac.in/courses/111/107/111107056/</a>	
3	<a href="https://nptel.ac.in/courses/122/103/122103012/">https://nptel.ac.in/courses/122/103/122103012/</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	S	M	M	M	S	S
CO2	S	M	M	M	M	S	M	S	S	S
CO3	S	S	M	S	S	S	S	S	S	S
CO4	S	S	M	S	M	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	MODERN ALGEBRA - I			L	T	P	C
Core/Elective/Supportive	Core Paper – XI			6	-	-	4
Pre-requisite	Higher Secondary level Mathematics			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
Focuses on the concepts of algebraic structures which is one of a pillar of modern Mathematics and emphasis on their properties and applications.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Recall the properties and extend group structure to finite permutation groups.						K1
CO 2	Explain the concepts of homomorphism, isomorphism and automorphism.						K2
CO 3	Demonstrate abstract thinking capacity and ability to prove theorems.						K3
CO 4	Compare features of different algebraic structures.						K4
CO 5	Examine the properties of algebraic structures and their role in applied contexts.						K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Groups &amp; its Basic Properties</b>					<b>18 hours</b>	
Sets – mappings – Relations and binary operations – Groups: Abelian group, Symmetric group Definitions and Examples – Basic properties.							
<b>Unit:2</b>	<b>Subgroups &amp; Normal Subgroups</b>					<b>18 hours</b>	
Subgroups – Cyclic subgroup - Index of a group – Order of an element – Fermat theorem - A Counting Principle - Normal Subgroups and Quotient Groups.							
<b>Unit:3</b>	<b>Automorphisms</b>					<b>18 hours</b>	
Homomorphisms (Applications 1 and 2 are omitted) -Automorphisms -Cayley's theorem, permutation groups.							
<b>Unit:4</b>	<b>Rings</b>					<b>18 hours</b>	
Definition and Examples –Some Special Classes of Rings – Commutative ring – Field – Integral domain - Homomorphisms of Rings.							
<b>Unit:5</b>	<b>Ideals &amp; Quotient Rings</b>					<b>18 hours</b>	
Ideals and Quotient Rings – More Ideals and Quotient Rings – Maximal ideal - The field of Quotients of an Integral Domain .							
					<b>Total Lecture hours</b>	<b>90hours</b>	
<b>Text Book</b>							
1	Topics in Algebra -I.N. Herstein (John Wiley & Sons, New York, 2003. )						
	Unit I	Chapter 1 Sections 1.1 to 1.3, Chapter 2 Sections 2.1 to 2.3					
	Unit II	Chapter 2 Sections 2.4 to 2.6					
	Unit III	Chapter 2 Sections 2.7 to 2.10					
	Unit IV	Chapter 3 Sections 3.1 to 3.3					

	Unit V Chapter 3 Sections 3.4 to 3.6.
<b>Reference Books</b>	
1	Modern Algebra -Surjeet Singh and Qazi Zameeruddin.(Vikas Publishing house, 1992.)
2	Modern Algebra- A.R.Vasishtha (Krishna Prakashan Mandir, Meerut, 1994 - 95. )
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/106/104/106104149/">https://nptel.ac.in/courses/106/104/106104149/</a>
2	<a href="https://nptel.ac.in/courses/111/106/111106113/">https://nptel.ac.in/courses/111/106/111106113/</a>
3	<a href="https://www.classcentral.com/course/swayam-modern-algebra-14201">https://www.classcentral.com/course/swayam-modern-algebra-14201</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	M	S	S	M	S	S
CO2	M	M	S	S	M	S	S	S	S	S
CO3	S	M	M	S	S	S	S	S	S	S
CO4	S	M	M	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	DISCRETE MATHEMATICS			L	T	P	C
Core/Elective/Supportive	CORE PAPER XII			5	-	-	4
Pre-requisite	Higher Secondary level Mathematics			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
Prepare students to develop mathematical foundations to understand , create mathematical arguments and focuses on the Formal languages , Automata, Lattices, Boolean Algebra and Graph Theory.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Assimilate various graph theoretic concepts and familiarize with their applications.						K1
CO 2	Know and understand about partially ordered sets, Boolean algebra, lattices and their types.						K2
CO 3	Apply Karnaugh map for simplifying the Boolean expression.						K3
CO 4	Demonstrate the skill to construct simple mathematical proofs and to validate.						K4
CO 5	To achieve greater accuracy, clarity of thought and language.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Mathematical logic</b>			<b>15 hours</b>			
Connectives ,well formed formulas, Tautology, Equivalence of formulas, Tautological implications, Duality law, Normal forms, Predicates, Variables, Quantifiers, Free and bound Variables. Theory of inference for predicate calculus.							
<b>Unit:2</b>	<b>Relations And Functions</b>			<b>15 hours</b>			
Composition of relations, Composition of functions, Inverse functions, one-to- one, onto, one-to-one& onto functions, Hashing functions, Permutation function, Growth of functions. Algebra structures: Semi groups, Free semi groups, Monoids.							
<b>Unit:3</b>	<b>Formal Languages And Automata</b>			<b>15 hours</b>			
Regular expressions, Types of grammar, Regular grammar and finite state automata, Context free and sensitive grammars.							
<b>Unit:4</b>	<b>Lattices And Boolean Algebra</b>			<b>15 hours</b>			
Partial ordering, Poset, Lattices, Boolean algebra, Boolean functions, Theorems, Minimization of Boolean functions (Karnaugh Method only).							
<b>Unit:5</b>	<b>Graph Theory</b>			<b>15 hours</b>			
Directed and undirected graphs, Paths, Reachability, Connectedness, Matrix representation, Euler paths, Hamiltonian paths, Trees.							
			<b>Total Lecture hours</b>			<b>75 hours</b>	

<b>Text Book</b>	
1	Discrete Mathematical Structures with applications to computer science-J.P Tremblay and R.P Manohar (Mc.Graw Hill, 1975. ) Unit 1: Chapter 1. Sections - 1- 2.1 to 1 – 2.4, 1.2.7 to1-2.11,1-3.1 –to1-3.4,1-5.1 ,1-5.4,1.6.4 Unit 2: Chapter 2- Sections - 2-3.7, 2-4.2, 2-4.3, 2-4.6, Chapter 3- Sections-3-2.1 to 3-2.3, Unit 3: Chapter 3- Sections 3-3.1, 3-3.2 Chapter 4- Section 4-6.2 Unit4: Chapter 4- Section 4-1.1, 4-2, 4-3, 4-4.2 Unit 5: Chapter 5- Section 5-1.1, 5-1.2, 5-1.3, 5-1.4
<b>Reference Book</b>	
1	Discrete Mathematics-Oscar Levin(3 <sup>rd</sup> Edition,2016)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/106/106/106106094/">https://nptel.ac.in/courses/106/106/106106094/</a>
2	<a href="https://nptel.ac.in/courses/111/107/111107058/">https://nptel.ac.in/courses/111/107/111107058/</a>
Course Designed By: 1.Dr.C.Janaki 2.Mr.R.Subramanian	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	S	M	M	S	S
CO2	S	M	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	M	S	S	S
CO4	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	OPERATIONS RESEARCH – PAPER III		L	T	P	C
Core/Elective/Supportive	Skill Based Subject		3	-	-	3
Pre-requisite	Knowledge In Basics of O.R		Syllabus version		2022-onwards	
<b>Course Objectives:</b>						
Presents applications and method to solve Integer Programming Problems, Non-linear Programming Problems and Dynamic Programming problems.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
CO 1	Know the concept of simulation and simulate a queueing system					K1
CO 2	Understand the overall approach of dynamic programming.					K2
CO 3	Solve nonlinear programming problems using Lagrange multiplier and using Kuhn-Tucker conditions.					K2
CO 4	Apply concepts in optimal scheduling					K3
CO 5	To formulate a model for solving the intractable problems.					K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create						
<b>Unit:1</b>	<b>Simulation</b>				<b>9 hours</b>	
Introduction-simulation models-Event-Types of simulation- Generation of random numbers-Monte-Carlo simulation- simulation of queueing system.						
<b>Unit:2</b>	<b>Network Scheduling By PERT/CPM</b>				<b>9 hours</b>	
Introduction - Network and basic components- Rules of Network construction- Time calculation in Networks- Concurrent Activities-Critical Path Analysis-Probability considerations in Pert - Resource Analysis in Network Scheduling- Project cost- Time-Cost Optimization Algorithm						
<b>Unit:3</b>	<b>Integer Programming Problem</b>				<b>9 hours</b>	
Integer Programming Problem – Gomory’s fractional cut Method – Branch and Bound Method.						
<b>Unit:4</b>	<b>Non-linear Programming Problems</b>				<b>9 hours</b>	
General NLPP – Constrained Optimization with Equality Constraints– Constrained Optimization with Inequality Constraints – Kuhn Tucker Condition – Problems.						
<b>Unit:5</b>	<b>Dynamic Programming Problem</b>				<b>9 hours</b>	
Dynamic Programming Problem – Recursive equation approach – D.P.P Algorithm – Solution of L.P.P by D.P.P.						
<b>Total Lecture hours</b>					<b>45 hours</b>	
<b>Text Book</b>						
1	Operations Research – Kantiswarup, P. K. Gupta, Man Mohan(S. Chand & Sons Education Publications, New Delhi, 12th Revised edition,2011)					
UNIT-I-Chapter 22: Section-22.1-22.7 &22.9						
UNIT-II- Chapter 25: Section-25.1-25.2, 25.4, 25.6-25.7,26.2,-26.3.						
UNIT- III- Chapter 7: Section-7.1-7.5 & 7.7.						

UNIT-IV- Chapter 27: Section 27.1- 27.5  
 UNIT-V- Chapter 13- Section- 13.1-13.4 & 13.7

### Reference Books

- |   |  |
|---|--|
| 1 | Operations Research – Prem Kumar Gupta & D. S. Hira (S. Chand & Company Ltd, Ram Nagar, New Delhi ,2014)         |
| 2 | Operations Research Principles and Problems- S. Dharani Venkatakrishnan (Keerthi publishing house PVT Ltd ,1994) |

### Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

- |   |   |
|---|---|
| 1 | <a href="https://nptel.ac.in/courses/111/107/111107104/">https://nptel.ac.in/courses/111/107/111107104/</a> |
| 2 | <a href="https://nptel.ac.in/courses/111/102/111102012/">https://nptel.ac.in/courses/111/102/111102012/</a> |
| 3 | <a href="https://nptel.ac.in/courses/111/104/111104027/">https://nptel.ac.in/courses/111/104/111104027/</a> |
| 4 | <a href="https://nptel.ac.in/courses/111/105/111105039/">https://nptel.ac.in/courses/111/105/111105039/</a> |

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	S	S	S	S	S
CO2	S	M	M	M	M	S	S	M	S	S
CO3	S	M	M	S	M	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low



**Sixth Semester**

Course code	REAL ANALYSIS - II			L	T	P	C
Core/Elective/Supportive	Core Paper – XIII			5	-	-	4
Pre-requisite	Knowledge in Mappings & Properties of Real Numbers			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
To present a deeper and rigorous understanding of fundamental concepts like continuity, connectivity, derivative, monotonic functions with properties and Riemann - Stieltjes integral.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Demonstrate the understanding of continuity, uniform continuity, compactness, connectedness.						K1
CO 2	Understand partitions and their refinement.						K2
CO 3	Determine the Riemann integrability and the Riemann-Stieltjes integrability of a bounded function.						K2
CO 4	Examine the derivatives of function.						K3
CO 5	Acquire skills in writing and analyze the proofs that arise in the context of real analysis.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Topological Mappings</b>					<b>15hours</b>	
Examples of continuous functions –continuity and inverse images of open or closed sets – functions continuous on compact sets –Topological mappings –Bolzano’s theorem. .							
<b>Unit:2</b>	<b>Monotonic Functions</b>					<b>15 hours</b>	
Connectedness –components of a metric space – Uniform continuity - Uniform continuity and compact sets –fixed point theorem for contractions –monotonic functions.							
<b>Unit:3</b>	<b>Derivatives</b>					<b>15 hours</b>	
Definition of derivative –Derivative and continuity –Algebra of derivatives – the chain rule –one sided derivatives and infinite derivatives –functions with non-zero derivatives –zero derivatives and local extrema –Rolle’s theorem –The mean value theorem for derivatives – Taylor’s formula with remainder.							
<b>Unit:4</b>	<b>Functions Of Bounded Variation</b>					<b>15 hours</b>	
Properties of monotonic functions –functions of bounded variation –total Variation –additive properties of total variation on $(a, x)$ as a function of $x$ – functions of bounded variation expressed as the difference of increasing functions –continuous functions of bounded variation.							
<b>Unit:5</b>	<b>The Riemann- Stieltjes Integral</b>					<b>15 hours</b>	
Introduction –Notation –The definition of Riemann –Stieltjes integral –linear properties – Integration by parts –change of variable in a Riemann –Stieltjes integral –Reduction to a Riemann integral.							

		Total Lecture hours	75 hours
<b>Text Book</b>			
1	Mathematical Analysis( 2 <sup>nd</sup> ed )-Tom. M. APOSTOL( Addison-Wisely. Narosa Publishing Company, Chennai, 1990.)  Unit I :Chapter 4 Sections 4.11 to 4.15  Unit II :Chapter 4 Sections 4.16, 4.17, 4.19, 4.20, 4.21, 4.23  Unit III: Chapter 5 Sections 5.2 to 5.10 and 5.12  Unit IV :Chapter 6 Sections 6.2 to 6.8  Unit V :Chapter 7 Sections 7.1 to 7.7		
<b>Reference Books</b>			
1	Methods of Real Analysis -R.R.Goldberg( NY, John Wiley, New York 1976.)		
2	Introduction to Topology and Modern Analysis -G.F.Simmons (McGraw – Hill, New York, 1963.)		
3	A survey of Modern Algebra -G.Birkhoff and MacLane (3rd Edition, Macmillan, NewYork, 1965.)		
4	Real Analysis - J.N.Sharma and A.R.Vasistha. (Krishna Prakashan Media (P) Ltd, 1997.)		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>			
1	<a href="https://nptel.ac.in/courses/111/106/111106053/">https://nptel.ac.in/courses/111/106/111106053/</a>		
2	<a href="https://www.math.ucdavis.edu/~emsilvia/math127/chapter7.pdf">https://www.math.ucdavis.edu/~emsilvia/math127/chapter7.pdf</a> <a href="https://www.whitman.edu/Documents/Academics/Mathematics/grady.pdf">https://www.whitman.edu/Documents/Academics/Mathematics/grady.pdf</a>		
3	<a href="https://nptel.ac.in/courses/122/101/122101003/">https://nptel.ac.in/courses/122/101/122101003/</a>		
Course Designed By: 1. Dr. C. Janaki 2.Dr. M.S. Annie Christi			

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	S	S	S	M	S	S
CO2	M	M	M	M	M	S	S	M	S	S
CO3	S	M	M	S	S	S	M	S	S	S
CO4	S	M	M	S	S	S	M	S	S	S
CO5	M	M	S	M	M	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	COMPLEX ANALYSIS - II			L	T	P	C
Core/Elective/Supportive	Core Paper – XIV			6	-	-	4
Pre-requisite	Knowledge In Analytic Functions, Complex Integration .			Syllabus version		2022-onwards	
<b>Course Objectives:</b>							
To familiarise the students with some fundamental theorems, singularity, residues in complex functions, integrations of complex functions, meromorphic functions and their applications.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	To recognize and apply the Liouville's theorem, the mean-value property of a function and the maximum modulus principle.					K1	
CO 2	Demonstrate understanding and appreciation of deeper aspects of complex analysis.					K2	
CO 3	Apply residue theorem to compute integrals.					K3	
CO 4	Ability to think critically by proving mathematical conjectures and establishing theorems from complex analysis.					K4	
CO 5	Classify the nature of singularity, poles and residues .					K2	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Integral Theorems</b>			<b>18 hours</b>			
Results based on Cauchy's theorem (I)-Zeros-Cauchy's Inequality – Liouville's theorem – Fundamental theorem of algebra –Maximum modulus theorem –Gauss mean value theorem – Gauss mean value theorem for a harmonic function on a circle.							
<b>Unit:2</b>	<b>Taylor's Series &amp; Laurent's Series</b>			<b>18 hours</b>			
Results based on Cauchy's theorem (II)-Taylor's series –Laurent's series.							
<b>Unit:3</b>	<b>Singularities And Residues</b>			<b>18 hours</b>			
Isolated singularities (Removable Singularity, pole and essential singularity) –Residues –Residue theorem.							
<b>Unit:4</b>	<b>Real Definite Integrals</b>			<b>18 hours</b>			
Evaluation using the calculus of residues – Integration on the unit circle –Integral with $-\infty$ and $+\infty$ as lower and upper limits with the following integrals: i) $P(x)/Q(x)$ where the degree of $Q(x)$ exceeds that of $P(x)$ at least 2. ii) $(\sin ax).f(x)$ , $(\cos ax).f(x)$ , where $a>0$ and $f(z) \rightarrow 0$ as $z \rightarrow \infty$ and $f(z)$ does not have a pole on the real axis. iii) $f(x)$ where $f(z)$ has a finite number of poles on the real axis. $\infty$ Integral of the type $\int_0^{\infty} x^{a-1}/(1+x) dx$ ; $0 < a < 1$ .							
<b>Unit:5</b>	<b>Meromorphic Functions</b>			<b>18 hours</b>			
Theorem on number of zeros minus number of poles –Principle of argument-Rouche's theorem – Theorem that a function which is meromorphic in the extended plane is a rational function.							



	Total Lecture hours	90 hours
<b>Text Book</b>		
1	Complex analysis -P. Duraipandian and Laxmi Duraipandian (Emerald Publishers, Chennai – 2, 1997.)  Unit I : Chapter 8 Sections 8.10, 8.11  Unit II : Chapter 9 Sections 9.1 to 9.3, 9.13.  Unit III: Chapter 9 Sections 9.5 to 9.12, 9.13. Chapter 10 Sections 10.1, 10.2 and 10.4.  Unit IV: Chapter 10 Sections 10.3 and 10.4.  Unit V: Chapter 11 Sections 11.1 to 11.3 ( <b>Except theorems 11.5 and 11.6</b> )	
<b>Reference Books</b>		
1	Complex Variable and Applications -Churchill and Others( Tata Mc-graw Hill Publishing Company Ltd, 1974.)	
2	Theory of functions of Complex Variable –Santhinarayan (S.Chand and Company ,Meerut, 1995)	
3	Functions of Complex Variable (17 <sup>th</sup> Edition)- Tyagi B.S (PragatiPrakasham Publishing Company Ltd, Meerut, 1992-93. )	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/103/111103070/">https://nptel.ac.in/courses/111/103/111103070/</a>	
2	<a href="https://nptel.ac.in/courses/111/106/111106094/">https://nptel.ac.in/courses/111/106/111106094/</a>	
4	<a href="https://nptel.ac.in/courses/122/103/122103012/">https://nptel.ac.in/courses/122/103/122103012/</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	M	S	S	M	S	S
CO2	S	S	M	S	M	S	M	M	M	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	M	S	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	MODERN ALGEBRA - II			L	T	P	C
Core/Elective/Supportive	Core Paper – XV			6	-	-	4
Pre-requisite	Knowledge in Groups, Rings and Fields			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
To develop understanding in the domain of matrix theory ,vector spaces, linear transformations as well as the principles underlying the subject.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Communicate and understand mathematical ideas and results with the correct use of mathematical definitions, terminology and symbols.						K1
CO 2	Explain the concepts of base and dimension of Vector space.						K2
CO 3	To apply the Gram-Schmidt process to construct an orthonormal set of vectors in an inner product space.						K3
CO 4	Demonstrate competence with the basic ideas of Matrix theory ,Vector spaces, Dual spaces, Linear transformation.						K3
CO 5	Have an insight to analyze a real life problem and solve it.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Matrices</b>					<b>16 hours</b>	
Introduction – Addition and Scalar Multiplication of Matrices – Product of Matrices –Transpose of a Matrix – Matrix Inverse – Symmetric and Skew - Symmetric Matrices.							
<b>Unit:2</b>	<b>Special Matrices</b>					<b>16 hours</b>	
Hermitian and Skew-Hermitian Matrices – Orthogonal and Unitary Matrices – Rank of a Matrix –Characteristic Roots and Characteristic Vectors of a Square Matrix.							
<b>Unit:3</b>	<b>Vector Spaces</b>					<b>20hours</b>	
Elementary Basic Concepts – Subspace of a Vector space - Homomorphism – Isomorphism - Internal and External direct sums - Linear span - Linear Independence and Bases.							
<b>Unit:4</b>	<b>Dual Spaces</b>					<b>20 hours</b>	
Dual Space - Annihilator of a subspace- Inner Product Spaces – Norm of a Vector – Orthogonal Vectors - Orthogonal Complement of a subspace – Orthonormal set.							
<b>Unit:5</b>	<b>Linear Transformations</b>					<b>18 hours</b>	
Algebra of Linear Transformations – Regular, Singular Transformations – Range of T – Rank of T - Characteristic Roots – Characteristic Vectors – Matrices.							
					<b>Total Lecture hours</b>	<b>90 hours</b>	

<b>Text Book(s)</b>	
1	Modern Algebra -R.Balakrishnan and M. Ramabadrn. (Vikas Publishing House Pvt. Ltd, New Delhi, Second Revised Edition 1994) (For Units I & II) .  Unit I :Chapter 1 Sections 1.1 to 1.3, 1.5 to 1.7  Unit II :Chapter 1 Sections 1.8 and 1.9 Chapter 2 Section 2.9 Chapter 3 Section 3.9
2	Topics in Algebra -I.N. Herstein.( John Wiley & Sons, New York, 2003.) (For Units III, IV & V) Unit III: Chapter 4 Sections 4.1 and 4.2 Unit IV :Chapter 4 Sections 4.3 and 4.4 Unit V :Chapter 6 Sections 6.1 , 6.2 and 6.3
<b>Reference Books</b>	
1	Modern Algebra -Surjeet Singh and Qazi Zameeruddin (Vikas Publishing house, 1992. )
2	Modern Algebra -A.R.Vasishtha (Krishna Prakashan Mandir, Meerut, 1994 – 95.)
3	Linear Algebra -Seymour Lipschutz and Marc Lipson (3rd Edition, McGraw Hill, 2001.)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/111/106/111106135/">https://nptel.ac.in/courses/111/106/111106135/</a>
2	<a href="https://nptel.ac.in/courses/115/105/115105097/">https://nptel.ac.in/courses/115/105/115105097/</a>
3	<a href="https://nptel.ac.in/courses/111/101/111101115/">https://nptel.ac.in/courses/111/101/111101115/</a>
4	<a href="https://nptel.ac.in/courses/111/108/111108066/">https://nptel.ac.in/courses/111/108/111108066/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	S	S	M	S	S
CO2	M	M	S	S	M	S	M	M	S	S
CO3	S	M	S	S	M	S	M	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code	OPERATIONS RESEARCH - PAPER -IV		L	T	P	C
Core/Elective/Supportive	Skill Based Subject		3		-	3
Pre-requisite	Knowledge in Basics of O.R		Syllabus version		2022-onwards	
<b>Course Objectives:</b>						
To enhance the students knowledge in decision analysis, sequencing of the jobs to be carried out based on cost optimization, replacement policies and analyze the cases according to their categories.						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
CO 1	Know the principles and applications of information theory.					K1
CO 2	To understand sequencing, replacement problems.					K2
CO 3	Demonstrate skills to achieve their objective using sequencing models.					K3
CO 4	Apply decision making under different business environments.					K4
CO 5	Determine a solution to a rectangular game using simplex method.					K3
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>Decision Analysis</b>				<b>9 hours</b>	
Decision Making environment – Decisions under uncertainty – Decision under risk – Decision – Tree Analysis.						
<b>Unit:2</b>	<b>Sequencing Problems</b>				<b>9 hours</b>	
Introduction-problem of sequencing - basic terms used in sequencing- processing n-jobs through 2 machines - processing n –jobs through k machines - processing 2 jobs through k machines (Problems only).						
<b>Unit:3</b>	<b>Replacement Problems</b>				<b>9 hours</b>	
Introduction - Replacement of equipment / assets that deteriorates gradually - replacement of equipment that fails suddenly and problems.						
<b>Unit:4</b>	<b>Information Theory</b>				<b>9 hours</b>	
Introduction- A measure of Information-Axiomatic Approach to Information- Entropy-The expected information- Some properties of entropy function-Joint and conditional entropies						
<b>Unit:5</b>	<b>Applications</b>				<b>9 hours</b>	

General solution of (mxn) rectangular games using simplex method - Reliability and system failure rates using replacement problems.		
<b>Total Lecture hours</b>		<b>45 hours</b>
<b>Text Book</b>		
1	Operations Research -Kantiswarup, P. K. Gupta , Man Mohan (S.Chand&sons education publications ; New Delhi,2003)	

<b>Reference Books</b>	
1	Operations Research - P K Gupta & D S Hira ( S. Chand and company ltd. Ram Nagar; New Delhi,2014.)
2	Operations Research principles problems - S Dharani Venkatakrisnan(keerthi publishing house Pvt. Ltd.1994)
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/courses/117/104/117104129/">https://nptel.ac.in/courses/117/104/117104129/</a>
2	<a href="https://nptel.ac.in/courses/110/105/110105082/">https://nptel.ac.in/courses/110/105/110105082/</a>
3	<a href="https://nptel.ac.in/courses/110/106/110106045/">https://nptel.ac.in/courses/110/106/110106045/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	S	S	S	M	S	S
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	M
CO5	S	M	M	S	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low



**Elective  
Course**

Course code	NUMERICAL METHODS - I			L	T	P	C
Core/Elective/Supportive	ELECTIVE I – B			5	-	-	3
Pre-requisite	Knowledge In Higher Secondary Level Mathematics			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
It exposes the students to study numerical techniques to find solutions of numerical, algebraic transcendental equations, solution of simultaneous linear algebraic equations and interpolation.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Remember the concepts of errors and its effect on computation.						K1
CO 2	Obtain numerical solutions of algebraic and transcendental equations.						K2
CO 3	Apply the finite difference and interpolation concepts.						K3
CO 4	Develop skills in designing mathematical models for constructing polynomials to the given data and drawing inferences.						K4
CO 5	Analyze the efficiency of iteration methods.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>The Solution Of Numerical Algebraic And Transcendental Equations</b>			<b>15 hours</b>			
Bisection method – Iteration Method – Convergence condition – Regula Falsi Method – Newton – Raphson method - Convergence Criteria – Order of Convergence.							
<b>Unit:2</b>	<b>Solution Of Simultaneous Linear Algebraic Equations</b>			<b>15 hours</b>			
Gauss elimination method – Gauss Jordan method – Method of Triangularization – Gauss Jacobi method – Gauss Seidel method.							
<b>Unit:3</b>	<b>Finite Differences</b>			<b>15 hours</b>			
Differences – operators – forward and backward difference tables – Differences of a polynomial – Factorial polynomial – Error propagation in difference table.							
<b>Unit:4</b>	<b>Interpolation (for equal intervals)</b>			<b>15 hours</b>			
Newton’s forward and backward formulae – equidistant terms with one or more missing values – Central differences and central difference table – Gauss forward and backward formulae – Stirling’s formula.							
<b>Unit:5</b>	<b>Interpolation (for unequal intervals)</b>			<b>15 hours</b>			
Divided differences – Properties -Newton’s divided differences formula – Lagrange’s formula and inverse interpolation.							
			<b>Total Lecture hours</b>	<b>75 hours</b>			
<b>Text Book</b>							
1	Numerical methods -Kandasamy. P, Thilagavathi. K and Gunavathi. K ( S. Chand and Company Ltd, New Delhi – Revised Edition 2007. )(Chapters: 3,4,5,6,7 and 8)						

	Unit I Chapter 3 : Section 3.1 - 3.4 (3.4.4 omitted) Unit II Chapter 4 : Section 4.1 - 4.4, 4.7 - 4.9 Unit III Chapter 5 : Section 5.1 - 5.5 Unit IV Chapter 6 : Section 6.1 - 6.6, Chapter 7 : Section 7.1 - 7.5 Unit V Chapter 8 : Section 8.1 – 8. 3, 8.7 - 8.8
2	Introductory Methods of Numerical Analysis-S.S. Sastry(Prentice Hall of India Pvt. Ltd.New Delhi-110001Fourth Edition,2006)

### Reference Books

1	Numerical Methods in Science and Engineering -Venkataraman M. K.(National Publishing company V Edition 1999. )
2	Numerical Methods for Scientists and Engineers -Sankara Rao K. (2 <sup>nd</sup> Edition Prentice Hall India 2004. )

### Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	<a href="http://www.simumath.com/library/book.html?code=Alg_Equations_Examples">http://www.simumath.com/library/book.html?code=Alg_Equations_Examples</a>
2	<a href="http://jupiter.math.nctu.edu.tw/~smchang/9602/NA_lecture_note.pdf">http://jupiter.math.nctu.edu.tw/~smchang/9602/NA_lecture_note.pdf</a> <a href="http://www.iosrjournals.org/iosr-jm/papers/Vol6-issue6/J0665862.pdf">http://www.iosrjournals.org/iosr-jm/papers/Vol6-issue6/J0665862.pdf</a>
3	<a href="https://nptel.ac.in/courses/122/102/122102009/">https://nptel.ac.in/courses/122/102/122102009/</a> <a href="https://nptel.ac.in/courses/111/107/111107105/">https://nptel.ac.in/courses/111/107/111107105/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	S	M	S	S
CO2	S	S	S	M	S	S	M	M	M	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	M	S
CO5	S	M	S	S	M	S	M	S	S	S

\*S-Strong; M-Medium; L-Low



Course code	Numerical Methods II			L	T	P	C
Core/Elective/Supportive	ELECTIVE II-B			5	-	-	3
Pre-requisite	Knowledge In Higher Secondary Level Mathematics			Syllabus version	2022-onwards		
<b>Course Objectives:</b>							
1. To equip the learners with the powerful tool for numerical differentiation, numerical integration, difference equation, numerical solution to O.D.E.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Familiarize with numerical integration and differentiation, numerical solution of ordinary differential equations.						K1
CO 2	Distinguish methods of Taylor series, Euler's, Modified Euler's and Runge Kutta methods to find solutions of differential equations.						K2
CO 3	Apply the techniques for enormous application in the field of Science and some fields of Engineering.						K3
CO 4	Compute the integrals and derivatives by using the appropriate technique.						K4
CO 5	Find the numerical solution of second order O.D.E by finite difference method.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Numerical Differentiation</b>					<b>15 hours</b>	
Newton's forward and backward formulae to compute the derivatives – Derivative using Stirling's formulae – to find maxima and minima of the function given the tabular values.							
<b>Unit:2</b>	<b>Numerical Integration</b>					<b>15 hours</b>	
Newton – Cote's formula – Trapezoidal rule – Simpson's 1/3 <sup>rd</sup> and 3/8 <sup>th</sup> rules.							
<b>Unit:3</b>	<b>Difference Equation</b>					<b>15 hours</b>	
Order and degree of a difference equation – solving homogeneous and non – homogeneous linear difference equations.							
<b>Unit:4</b>	<b>Numerical Solution Of O.D.E</b>					<b>15hours</b>	
Taylor series method – Euler's method – improved and modified Euler method – Runge Kuttamethod (Second & fourth order Runge Kutta method only)							
<b>Unit:5</b>	<b>Multi Step Methods</b>					<b>15 hours</b>	
Milne's predictor corrector formula – solution of ordinary differential equations by finite difference method (for second order O.D.E).							
					<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book</b>							

1	Numerical methods -Kandasamy. P, Thilagavathi. K and Gunavathi. K ( S. Chand and Company Ltd, New Delhi – Revised Edition 2007. )(Chapters: 9,10,11,Appendix and Appendix E)
2	Introductory Methods of Numerical Analysis-S.S. Sastry(Prentice Hall of India Pvt. Ltd.NewDelhi-110001Fourth Edition,2006)
Unit I Chapter 9 : Section 9.1 – 9.6, Unit II Chapter 9 : Section 9.7 – 9.14 Unit III Chapter 10 : Section 10.1 – 10.7 Unit IV Chapter 11 : Section 11.5 – 11.7,11.9 , 11.11 - 11.15 Unit V Chapter 11 : Section 11.16 – 11.17, Appendix E	

<b>Reference Books</b>	
1	Numerical Methods in Science and Engineering -Venkataraman M. K.( National Publishing company V Edition 1999. )
2	Numerical Methods for Scientists and Engineers -Sankara Rao K. (Prentice Hall India , 2 <sup>nd</sup> Edition2004 )
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://nptel.ac.in/courses/104101002/downloads/lecturenotes/module1/chapter6.pdf">http://nptel.ac.in/courses/104101002/downloads/lecturenotes/module1/chapter6.pdf</a> <a href="https://www.britannica.com/science/difference-equation">https://www.britannica.com/science/difference-equation</a>
2	<a href="https://nptel.ac.in/courses/122/102/122102009/">https://nptel.ac.in/courses/122/102/122102009/</a>
3	<a href="https://nptel.ac.in/courses/111/107/111107063/">https://nptel.ac.in/courses/111/107/111107063/</a>

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	S	S	M	S	S
CO2	M	M	S	S	M	S	M	M	M	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	M	S	M	M	S	M	S	S	S
CO5	S	M	S	M	M	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	PROGRAMMING IN C++			L	T	P	C
Core/Elective/Supportive	ELECTIVE III - C			4	-		3
Pre-requisite	Knowledge in C Programming			Syllabus version		2022-onwards	
<b>Course Objectives:</b>							
To enable the students to learn about the class structure, operators, inheritance, polymorphism, file handling.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
CO 1	Know about class structure, member functions & data members, inheritance types and example problems .						K1
CO 2	Understand how C++ improves C with object-oriented features.						K2
CO 3	Develop programming skills.						K2
CO 4	To make use of objects and classes for developing programs.						K3
CO 5	Build C++ classes.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Tokens, Expressions And Control Structures</b>					<b>12 hours</b>	
Evolution of C++ - applications of C++ - structure of C++ program. Tokens – keywords – identifiers and constants – basic data types – user-defined data types – constant pointers and pointers to constants – symbolic constants –type compatibility – declaration of variables – dynamic initialization of variables – reference variables – operators in C++ - scope resolution operator – memory management operators – manipulators – type cast operator – expressions and their types – special assignment expressions – implicit conversions – operator precedence.							
<b>Unit:2</b>	<b>Functions In C++</b>					<b>12 hours</b>	
The main function – function prototyping – call by reference – return by reference – inline functions – default arguments – const arguments – function overloading. Managing Console I/O Operations: C++ streams – C++ stream classes – unformatted console I/O operations – formatted console I/O operations –managing output with manipulators.							
<b>Unit:3</b>	<b>Classes And Objects</b>					<b>12 hours</b>	
Specifying a class – defining member functions – making an outside function inline – nesting of member functions – private member functions – arrays within a class – memory allocation for objects –arrays of objects – objects as function arguments – friend functions – returning objects – const member functions. Constructors. Introduction – constructors – parameterized constructors – multiple constructors in a class – constructors with default arguments – copy constructor.							
<b>Unit:4</b>	<b>Operator Overloading</b>					<b>12 hours</b>	
Introduction – defining operator overloading – overloading unary operators – overloading binary operators - overloading binary operators using friends – rules for overloading operators.							
<b>Unit:5</b>	<b>Inheritance</b>					<b>12 hours</b>	
Introduction – defining derived classes – single inheritance – making a private member inheritable – multilevel inheritance – multiple inheritance – hierarchical inheritance – hybrid inheritance.							

		Total Lecture hours	60 hours
<b>Text Book(s)</b>			
1	Object Oriented programming with C++- E.Balagurusamy (McGraw Hill 3 <sup>rd</sup> Edition 2006 Sixth Edition 2013.)		
2	Object oriented programming in Turbo C++-Robert Lafore (Galgotia publications Pvt.Ltd, New Delhi- 110002,2002)		
3	The C++ programming language- Bjarne Stroutstrup ( II Edition, Addison Wesley, 1991.)		
Unit I Chapter 2 : Section 2.1 ,2.2,2.6, Chapter 3 : Section 3.2-3.6,3.8-3.22,3.24			
Unit II Chapter 4 : Section 4.1-4.8,4.10 Chapter 10 : Section 10.1-10.6			
Unit III Chapter 5 : Section 5.1,5.3,5.4,5.6-5.10,5.13-5.17			
Unit IV Chapter 4 : Section 7.1 -7.5,7.8 Section 6.1-6.5,6.7.			
Unit V Chapter 8 : Section 8.1 – 8.8			
<b>Reference Books</b>			
1	Programming with C++ - D.Ravi Chandran ( Tata McGraw-Hill publishing company limited, New Delhi 1996)		
2	Object Oriented Programming with ANSI and Turbo C++-AshokN.Kamthane( Pearson Education publishers 2003)		
3	Programming with C++ -John R.Hubbard( 2nd Edition, TMH publishers2002).		
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>			
1	<a href="https://nptel.ac.in/courses/106/105/106105151/">https://nptel.ac.in/courses/106/105/106105151/</a>		
2	<a href="https://nptel.ac.in/courses/106/101/106101208/">https://nptel.ac.in/courses/106/101/106101208/</a>		
3	<a href="https://www.classcentral.com/course/swayam-programming-in-c-6704">https://www.classcentral.com/course/swayam-programming-in-c-6704</a>		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	S	M	S	M	S	S
CO2	M	M	M	M	S	S	S	M	S	S
CO3	S	S	S	S	S	S	M	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S
CO5	S	S	S	M	S	M	S	S	S	M

\*S-Strong; M-Medium; L-Low

Course code		<b>PROGRAMMING IN C++ (PRACTICAL)</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
Core/Elective/Supportive		<b>ELECTIVE III - C( Practical)</b>	-	-	<b>1</b>	<b>1</b>
Pre-requisite		<b>Knowledge in C++</b>	<b>Syllabus Version</b>		<b>2022-onwards</b>	
<b>PRACTICAL LIST</b>						
1. Write a function 'power()' to raise a number 'm' to a power 'n'. The function takes a 'double' value for 'm' and 'int' value for 'n', and returns the result correctly. Use a default value of 2 for 'n' to make the function to calculate squares when this argument is omitted. Write a main() that gets the values of 'm' and 'n' from the user to test the function.						
2. Write a program to compute compound interest of a given amount AMT for 'n' years. Use function overloading so that the program gets input of interest rate RATE in any of the data type 'float' or 'int'						
3. Create a class which consist of employee detail ENO, ENAME, DEPT, BASIC SALARY. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade and display the payslip in a neat format using console I/O						
4. Define two classes POLAR and RECTANGLE to represent points in the polar and rectangle system. Write a program to convert from one system to another.						
5. Create a class FLOAT that contains one float data member. Overload all the four arithmetic operators so that they operate on the objects of FLOAT.						

<b>Course code</b>		<b>INTRODUCTION TO INDUSTRY 4.0</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Core/Elective/Supportive</b>		<b>ELECTIVE III – E</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>4</b>
<b>Pre-requisite</b>		<b>Basic Knowledge Of Computer And Internet</b>	<b>Syllabus Version</b>		<b>2022-onwards</b>	
<b>Course Objectives:</b>						
To impart knowledge on Industry 4.0, need for digital transformation and the following Industry 4.0 tools:						
<ol style="list-style-type: none"> <li>1. Artificial Intelligence</li> <li>2. Big Data and Data Analytics</li> <li>3. Internet of Things</li> </ol>						
<b>Expected Course Outcomes:</b>						
On the successful completion of the course, student will be able to:						
CO 1	Know the reason for adopting Industry 4.0 and Artificial Intelligence.					K1
CO 2	Understand the need for digital transformation.					K2
CO 3	Apply the industry 4.0 tools.					K3
CO 4	Analyze the applications of Big Data .					K4
CO 5	Examine the applications and security of IoT Applications.					K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>						
<b>Unit:1</b>	<b>Industry 4.0</b>				<b>15 hours</b>	
Need – Reason for Adopting Industry 4.0 - Definition – Goals and Design Principles - Technologies of Industry 4.0 – Big Data – Artificial Intelligence (AI) – Industrial Internet of Things - Cyber Security – Cloud – Augmented Reality. .						
<b>Unit:2</b>	<b>Artificial Intelligence</b>				<b>15 hours</b>	
Artificial Intelligence : Artificial Intelligence (AI) – What & Why? - History of AI - Foundations of AI -The AI -environment - Societal Influences of AI - Application Domains and Tools - Associated Technologies of AI - Future Prospects of AI - Challenges of AI .						
<b>Unit:3</b>	<b>Big Data And IoT</b>				<b>15 hours</b>	
Big Data : Evolution - Data Evolution - Data : Terminologies - Big Data Definitions - Essential of Big Data in Industry 4.0 - Big Data Merits and Advantages - Big Data Components : Big Data Characteristics - Big Data Processing Frameworks - Big Data Applications - Big Data Tools - Big Data Domain Stack : Big Data in Data Science - Big Data in IoT - Big Data in Machine Learning - Big Data in Databases - Big Data Use cases Big Data in Social Causes - Big Data for Industry - Big Data Roles and Skills -Big Data Roles - Learning Platforms; Internet of Things (IoT) : Introduction to IoT - Architecture of IoT - Technologies for IoT - Developing IoT Applications - Applications of IoT - Security in IoT .						

<b>Unit:4</b>	<b>Applications And Tools Of Industry 4.0</b>	<b>15 hours</b>
Applications of IoT – Manufacturing – Healthcare – Education – Aerospace and Defense – Agriculture – Transportation and Logistics – Impact of Industry 4.0 on Society: Impact on Business, Government, People. Tools for Artificial Intelligence, Big Data and Data Analytics, Virtual Reality, Augmented Reality, IoT, Robotics.		
<b>Unit:5</b>	<b>Jobs 2030</b>	<b>15 hours</b>
Industry 4.0 – Education 4.0 – Curriculum 4.0 – Faculty 4.0 – Skills required for Future - Tools for Education – Artificial Intelligence Jobs in 2030 – Jobs 2030 - Framework for aligning Education with Industry 4.0 .		
<b>Total Lecture hours</b>		<b>75 hours</b>
<b>Text Book</b>		
1	Higher Education for Industry 4.0 and Transformation to Education 5.0(2022 )- P.Kaliraj& T. Devi	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/105/106105195/">https://nptel.ac.in/courses/106/105/106105195/</a>	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	S	S	S	S	M	S	S
CO2	M	M	M	S	S	S	S	M	M	S
CO3	S	S	S	S	S	S	S	S	S	M
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	M	S	M	S	S	S	S	S	S

\*S-Strong; M-Medium; L-Low

# **PROVIDENCE COLLEGE FOR WOMEN**

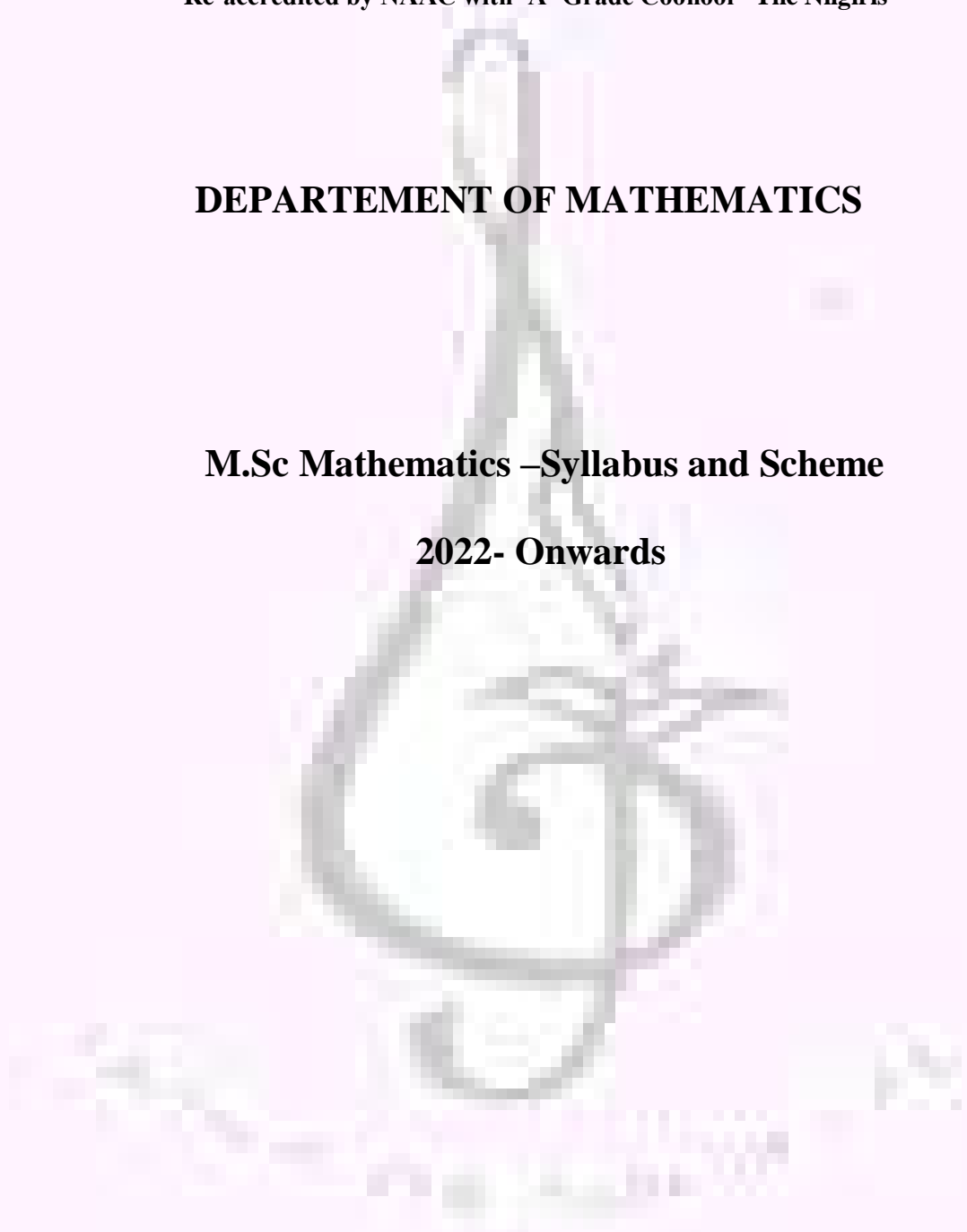
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## **DEPARTEMENT OF MATHEMATICS**

**M.Sc Mathematics –Syllabus and Scheme**

**2022- Onwards**





<b>Program Educational Objectives (PEOs)</b>	
The <b>M. Sc. Mathematics</b> program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	Provide a strong foundation in different areas of Mathematics, so that the students can compete with their contemporaries and excel in the various careers in Mathematics.
PEO2	Motivate and prepare the students to pursue higher studies and research, thus contributing to the ever-increasing academic demands of the country.
PEO3	Enrich the students with strong communication and interpersonal skills, broad knowledge and an understanding of multicultural and global perspectives, to work effectively in multidisciplinary teams, both as leaders and team members.
PEO4	Facilitate integral development of the personality of the student to deal with ethical and professional issues, and also to develop ability for independent and lifelong learning.

<b>Program Specific Outcomes (PSOs)</b>	
After the successful completion of <b>M. Sc. Mathematics</b> program, the students are expected to	
PSO1	Communicate concepts of Mathematics and its applications.
PSO2	Acquire analytical and logical thinking through various mathematical tools and techniques.
PSO3	Investigate real life problems and learn to solve them through formulating mathematical models.
PSO4	Attain in-depth knowledge to pursue higher studies and ability to conduct research. Work as mathematical professional.
PSO5	Achieve targets of successfully clearing various examinations/interviews for placements in teaching, banks, industries and various other organizations/services.

<b>Program Outcomes (POs)</b>	
On successful completion of the M. Sc. Mathematics program, the students will be able to	
PO1	Demonstrate in-depth knowledge of Mathematics, both in theory and application.
PO2	Attain the ability to identify, formulate and solve challenging problems in Mathematics.
PO3	Know the various specialised areas of advanced mathematics and its applications.
PO4	Analyze complex problems in Mathematics and propose solutions using research-based knowledge.
PO5	Obtain the accurate solutions for the community oriented problems via various mathematical models.
PO6	Work individually or as a team member or leader in uniform and multidisciplinary settings.
PO7	Crack lectureship and fellowship exams affirmed by UGC like CSIR-NET and SET.
PO8	Apply the Mathematical concepts, in all the fields of learning including higher research, and recognize the need and prepare for lifelong learning.
PO9	Know the use of computers both as an aid and as a tool to study problems in Mathematics.
PO10	Inculcate the knowledge of formulation and apply the mathematical concepts which are suitable for real life applications.

## M.Sc. MATHEMATICS

(Syllabus for the students those who are admitted from the Academic year 2022 onwards)

### SCHEME OF EXAMINATION - CBCS PATTERN

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
<b>FIRST SEMESTER</b>							
	Abstract Algebra	4	6	–	50	50	100
	Real Analysis	4	7	–	50	50	100
	Ordinary Differential Equations	4	7	–	50	50	100
	Numerical Methods	4	6	–	50	50	100
	Elective-I-MathLab -Theory Practical	3 1	2 -	– 2	30 10	45 15	75 25
		<b>20</b>	30	–	250	250	<b>500</b>
<b>SECOND SEMESTER</b>							
	Linear Algebra	4	6	–	50	50	100
	Complex Analysis	4	7	–	50	50	100
	Partial Differential Equations	4	7	–	50	50	100
	Mechanics	4	6	–	50	50	100
	Elective-II Number Theory	4	4	–	50	50	100
	<b>Total</b>	<b>20</b>	30	–	250	250	<b>500</b>

**SEMESTER III**

	Core Paper – IX Topology	4	7	50	50	100
	Core Paper – X Fluid Dynamics	4	7	50	50	100
	Core Paper – XI Mathematical Statistics	4	6	50	50	100
	Core Paper – XII Graph Theory	4	6	50	50	100
	Elective – III Fuzzy sets and fuzzy logic	4	4	50	50	100
	<b>Total</b>	<b>20</b>	<b>30</b>	<b>300</b>	<b>300</b>	<b>600</b>
	<b>SEMESTER IV</b>					
	Core Paper – XIII Functional Analysis	4	7	50	50	100
	Core Paper- XIV Mathematical Methods	4	7	50	50	100
	Core Practical – IV Optimization Techniques	4	6	50	50	100
	Computer Programming* (C++ Theory)	4	4	50	50	100
	Computer Programming (C++ Practical)	4	-	40	60	100
	Elective – IV Control Theory	4	4	50	50	100
	* Project & <i>viva-voce</i> Examination	6	-	75	75	150
	<b>Total</b>	<b>30</b>	<b>28</b>	<b>225</b>	<b>225</b>	<b>450</b>
	<b>Grand Total</b>	<b>90</b>	<b>118</b>	<b>1125</b>	<b>1125</b>	<b>2250</b>
	-					
	-					

\* Project report- 125 marks; *viva voce* 25 marks

Course code	Paper 1: ABSTRACT ALGEBRA			L	T	P	C
Core/Elective/ Supportive	Core			6	0	0	4
Pre-requisite	Basic knowledge in Modern Algebra at Undergraduate level.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>To provide deep knowledge about various algebraic structures.</li> <li>To introduce Galois Theory and to see its application to the solvability of polynomial equations by radicals.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand Sylows theorem and its applications						K3
2	Formulate some special types of rings and their properties.						K6
3	Acquire knowledge on extension fields and roots of polynomials						K4
4	Analyze the elements of Galois theory and Galois Groups over the rationals						K4
5	Understand the basic concepts of solvability by radicals and finite fields.						K2
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Group Theory</b>					<b>18 hours</b>	
Another Counting Principle, Sylow's Theorem: 1st, 2nd and 3rd parts of Sylow's Theorems – double coset – the normalizer of a group.							
<b>Unit:2</b>	<b>Group Theory (contd) and Ring Theory</b>					<b>17 hours</b>	
Euclidean Rings, A Particular Euclidean Rings, Polynomial rings.							
<b>Unit:3</b>	<b>Ring Theory (contd) and Fields</b>					<b>18 hours</b>	
Polynomials over rational fields – extension fields – roots of polynomials – splitting fields.							
<b>Unit:4</b>	<b>Fields (contd)</b>					<b>18 hours</b>	
More about roots – simple extension – fixed fields – symmetric rational functions – normal extension - Galois group – fundamental theorem of Galois theory.							
<b>Unit:5</b>	<b>Fields (contd) and Selected Topics</b>					<b>17 hours</b>	
Solvability by radicals: Solvable group – the commutator subgroup – Solvability by radicals - Finite fields.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars – webinars							
<b>Total Lecture hours</b>						<b>90 hours</b>	

<b>Text Book(s)</b>	
1	I.N. Herstein, Topics in Algebra, Secnd Edition, John Wiley and Sons, New York, 1975. UNIT I: Chapter 2 : Sections 2.11, 2.12 UNIT II: Chapter 2 : Section 2.13 Chapter 3 : Sections 3.7 - 3.9 UNIT III: Chapter 3 : Section 3.10 Chapter 5 : Sections 5.1,5.3 UNIT IV: Chapter 5 : Sections 5.5,5.6 UNIT V: Chapter 5 : Section 5.7 Chapter 7 : Section 7.1
<b>Reference Books</b>	
1	Serge Lang, Algebra, Third Edition, Addison-Wesley, Mass, 1993.
2	John B. Fraleigh, A First Course in Abstract Algebra, Addison Wesley, Mass, 1982.
3	M. Artin, Algebra, Prentice-Hall of India, New Delhi, 1991.
4	V. K. Khanna and S.K. Bhambri, A Course in Abstract Algebra, Vikas Publishing House Pvt Limited, 1993.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://nptel.ac.in/content/storage2/111/106/111106113/MP4/mod08lec44.mp4">https://nptel.ac.in/content/storage2/111/106/111106113/MP4/mod08lec44.mp4</a>
2	<a href="https://nptel.ac.in/content/storage2/111/106/111106113/MP4/mod08lec45.mp4">https://nptel.ac.in/content/storage2/111/106/111106113/MP4/mod08lec45.mp4</a>
3	<a href="https://nptel.ac.in/content/storage2/111/106/111106131/MP4/mod08lec39.mp4">https://nptel.ac.in/content/storage2/111/106/111106131/MP4/mod08lec39.mp4</a>
4	<a href="https://nptel.ac.in/content/storage2/111/106/111106131/MP4/mod08lec42.mp4">https://nptel.ac.in/content/storage2/111/106/111106131/MP4/mod08lec42.mp4</a>

<b>Mapping with Programme Outcomes</b>											
COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	M	L	L	L	M	S	L	S	M	M	
CO2	S	S	M	L	L	S	L	S	M	S	
CO3	M	L	S	M	S	M	M	L	L	S	
CO4	M	L	S	S	S	M	M	L	L	S	
CO5	L	M	M	S	M	L	S	M	S	M	

\*S-Strong; M-Medium; L-Low

Course code	PAPER 2: REAL ANALYSIS			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Basic knowledge in Undergraduate Analysis.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Evaluate integral of a function of a real variable in the sense of Riemann Stieltjes integral and gain its properties.</li> <li>2. Acquire Knowledge and demonstrate understanding the statement and proof of convergence theorems and its applications.</li> <li>3. Understand the requirement and concept of Lebesgue measure, Measurable functions and Lebesgue integral.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Apply the Riemann Stieltjes integral and bring its properties and rectifiable curves.					K3	
2	Remembering of sequences and series along with its properties					K1	
3	Analyze the concept of linear transformation and find the extreme values of implicit functions.					K4	
4	Understand the fundamental concept of Lebesgue measure.					K2	
5	Evaluate the complex integration and the benefits of Lebesgue Integral					K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Riemann Stiltjes Integral</b>					<b>21 hours</b>	
Definition and Existence of the Integral – properties of the integral – Integration and differentiation –rectifiable curves.							
<b>Unit:2</b>	<b>Sequences and Series of Functions</b>					<b>21 hours</b>	
Uniform convergence and continuity – uniform convergence and integration - uniform convergence and differentiation – equicontinuous families of functions – The Stone Weierstrass theorem.							
<b>Unit:3</b>	<b>Functions of Several Variables</b>					<b>21 hours</b>	
Linear transformation – contraction principle – Inverse function theorem – Implicit function theorem.							
<b>Unit:4</b>	<b>Lebesgue Measure</b>					<b>20 hours</b>	
Outer measure – Measurable sets and Lebesgue measure – Measurable functions –Littlewood’s Theorem.							
<b>Unit:5</b>	<b>Lebesgue Integral</b>					<b>20 hours</b>	
The Lebesgue integral of bounded functions over a set of finite measure – integral of a non – negative function – General Lebesgue Integral.							



<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Convergence in Measure – <a href="https://www.youtube.com/watch?v=_wThvhkiH5M">https://www.youtube.com/watch?v=_wThvhkiH5M</a>		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	Principles of Mathematical Analysis by W.Rudin McGraw Hill, New York, 1976. Unit I &II : Chapter 6 & 7. Unit I 6.23 -6.24 Omitted Unit III : Chapter 9 (Pages 204 to 227)	
2	Real Analysis by H.L. Roydon, Third Edition, Macmillan, New York, 1988. Unit IV : Chapter 3 (except Section – 4) Unit V :Chapter 4 ( Sections 2, 3 , 4)	
<b>Reference Books</b>		
1	R. G. Bartle, Elements of Real Analysis, 2nd Edition, John Wily and Sons, New York, 1976.	
2	Walter Rudin, Real and Complex Analysis, 3rd Edition, McGraw-Hill, New York, 1986.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=DO0Dzz07DNI">https://www.youtube.com/watch?v=DO0Dzz07DNI</a>	
2	<a href="https://nptel.ac.in/courses/111/101/111101100/">https://nptel.ac.in/courses/111/101/111101100/</a>	
3	<a href="https://www.youtube.com/watch?v=Y5yEMXZnzYw">https://www.youtube.com/watch?v=Y5yEMXZnzYw</a>	
4	<a href="https://youtu.be/msIZz8ydzcM">https://youtu.be/msIZz8ydzcM</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>CO3</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>L</b>	<b>L</b>
<b>CO3</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>
<b>CO5</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>

\*S-Strong; M-Medium; L-Low

Course code	<b>ORDINARY DIFFERENTIAL EQUATIONS</b>			L	T	P	C
<b>Core/Elective/ Supportive</b>	<b>Core</b>			<b>7</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Pre-requisite</b>	Basic knowledge in differential equations at Undergraduate level.			<b>Syllabus version</b>	<b>2022- Onwards</b>		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Study Solutions of Linear differential equations with constant and variable coefficients.</li> <li>2. Understand and able to apply various theoretical ideas that underlined in existence and uniqueness theorems, Linear independence and dependence, Wronskian etc.,</li> <li>3. Enables the students to develop the strong background on modeling, formulating, solving and interpreting physical problems.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recall the types of linear homogeneous equations of second order equations with constant coefficients and apply the method to solve.						K1
2	Analyze non-homogeneous ODE using the method of undermined coefficients and annihilator method to solve the same.						K4
3	Understand and Apply the theorems on Initial value problem to ordinary differential equations.						K2 & K3
4	Comprehend the Euler equations, the Bessel's equation and Regular, Singular points at infinity and to evaluate.						K5
5	Identify the research problem where differential equation can be used to model the problem.						K6
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Linear Equations with Constant Coefficients</b>					<b>20 hours</b>	
Introduction - Second order homogenous equations - Initial value problem for second order equations - Linear dependence and independence - A formula for Wronskian..							
<b>Unit:2</b>	<b>Linear Equations with Constant Coefficients (Contd)</b>					<b>21 hours</b>	
The Non- homogenous equations of order two-homogenous and Non - homogenous equations of order n - Initial value problems for n <sup>th</sup> order equations- Annihilator method to solve non-Homogenous equation.							
<b>Unit:3</b>	<b>Linear Equations with Variable Coefficients</b>					<b>21 hours</b>	
Initial value problem - Existence and uniqueness theorem - The Wronskian and linear independence - Reduction of the order of a homogenous equation - The non- Homogenous equation - Homogenous equations with analytic coefficients - The Legendre equations.							
<b>Unit:4</b>	<b>Linear Equations with Regular Singular Points</b>					<b>20 hours</b>	
The Euler equations - Second order equations with regular singular points - Exceptional cases - The Bessel equation.							

<b>Unit:5</b>	<b>Existence and Uniqueness of Solutions to First Order Equations</b>	<b>21 hours</b>
Equations with variable separated - Exact equations - The method of successive approximation - The Lipschitz Condition - Convergence of the successive approximation - Non-local existence of solutions - Approximations and uniqueness of solutions.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	Earl A. Coddington, An Introduction to Ordinary Differential Equations, Prentice-Hall of India Private Limited, New Delhi 2008. UNIT I: Chapter 2 : Sections 2.1 – 2.5. UNIT II: Chapter 2 : Sections 2.6 – 2.8, 2.10,2.11. UNIT III: Chapter 3 : Sections 3.1 – 3.80 UNIT IV: Chapter 4 : Sections 4.1 – 4.4, 4.6 – 4.8 UNIT V: Chapter 5 : Sections 5.1 – 5.5, 5.7, 5.8( 5.6 ommitted)	
<b>Reference Books</b>		
1	Williams E. Boyce and Richard C. Diprima, Elementary Differential Equations and Boundary Value Problems, 10th edition, John Wiley and Sons, New York 2012.	
2	S. G. Deo and V. Raghavendra, Ordinary Differential Equations and Stability Theory, Tata McGraw-Hill, New Delhi 1980.	
3	George F. Simmons, Differential Equations with Application and Historical Notes, Tata McGraw Hill, New Delhi 1974.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/104/111104031/#">https://nptel.ac.in/courses/111/104/111104031/#</a>	
2	<a href="https://nptel.ac.in/courses/122/107/122107037/">https://nptel.ac.in/courses/122/107/122107037/</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>L</b>
<b>CO3</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>CO4</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>S</b>
<b>CO5</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>M</b>

\*S-Strong; M-Medium; L-Low

Course code	Numerical Methods			L	T	P	C
Core/Elective/ Supportive	Core			6	0	0	4
Pre-requisite	Basic Knowledge in numerical methods at Undergraduate level.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. To make the students understand solving Algebraic and Transcendental equations.</li> <li>2. To know about how and when to use various interpolation function finding the various numerical differentiation and integration formulae and using them to solve problems.</li> <li>3. To understand the methods of finding solution to the differential equations of various orders.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Solve problems in numerical differentiation and integration						K3
2	Solve system of equations using various methods.						K3
3	Apply various methods to find numerical solution of first and second order ordinary differential equations.						K3
4	Explain the various methods for solving Boundary Value Problems and Characteristic Value Problems						K2
5	Understand the Explicit method and the Crank Nicolson method for solving partial differential equations.						K2
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Solution of Nonlinear Equations, Numerical Differentiation and Integration</b>					<b>18 hours</b>	
<b>Solution of Nonlinear Equations:</b> Newton's method – Convergence of Newton's method – Bairstow's Method for quadratic factors. <b>Numerical Differentiation and Integration:</b> Romberg integration –, Error in Numerical Differentiation. Booles and Weddles Rules. Euler- Maclaurin Formula							
<b>Unit:2</b>	<b>Solution of System of Equations</b>					<b>17 hours</b>	
Relaxation method . Systems of Nonlinear equations.Singular Value Decomposition. Ill Conditioned Linear System, Crouts Method ., Crouts Method for finding the Inverse of the Matrix							
<b>Unit:3</b>	<b>Solution of Ordinary Differential Equations</b>					<b>17 hours</b>	
Picards Method of Successive Approximation, Error estimates for the Euler Method and Modified Euler Method. Cubic Spine Method.							
<b>Unit:4</b>	<b>Boundary Value Problems and Characteristic Value Problems</b>					<b>18 hours</b>	
Derivative boundary conditions -The shooting method – solution through a set of equations – Characteristic value problems – Eigen values of a matrix by Iteration – The power method.							
<b>Unit:5</b>	<b>Numerical Solution of Partial Differential Equations</b>					<b>18 hours</b>	

Representation as a difference equation – Laplace’s equation on a rectangular region – Iterative methods for Laplace equation – The Poisson equation– Solving the equation for time-dependent heat flow (i) The Explicit method (ii) The CrankNicolson method – solving the wave equation by Finite Differences.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90 hours</b>
<b>Text Books</b>		
1.	S.S. Sastry: Introductory methods of Numerical Analysis, Prentice Hall of India, New Delhi, 1998. Unit 1 :Section : 2.10,2.11,2.12, 5.4.4,5.4.6,5.5 Unit 2: Section : 6.6, 6.3.10 Unit 3: Section : 7.3, 7.4.1, 7.4.2,7.7 Unit 4: Section : 7.10.2 Unit 5: Section : 8.3, 8.4	
2	P. Kandasamy et al., Numerical Methods, S.Chand & Co.Ltd., New Delhi, 2003. Unit 2: Section : 4.5, 4.6, 4.10 Unit 4: Section : 13.1( p.no 4680-475) Unit 5: Section : 12.7,12.9,12.10	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/107/111107105/">https://nptel.ac.in/courses/111/107/111107105/</a>	
2	<a href="https://freevideolectures.com/course/3504/numerical-methods-of-ordinary-and-partial/1">https://freevideolectures.com/course/3504/numerical-methods-of-ordinary-and-partial/1</a>	
3	<a href="https://www.classcentral.com/course/swayam-numerical-methods-for-engineers-14213">https://www.classcentral.com/course/swayam-numerical-methods-for-engineers-14213</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>M</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>L</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>	<b>L</b>

\*S-Strong; M-Medium; L-Low



**Second  
Semester**

Course code	LINEAR ALGEBRA			L	T	P	C
Core/Elective/ Supportive	Core			6	0	0	4
Pre-requisite	A good familiarity with Calculus and Modern Algebra.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Develop a strong foundation in linear algebra that provide a basic for advanced studies.</li> <li>2. Study of Linear Transformations, Algebra of Polynomials, Invariant space and their properties.</li> <li>3. Give particular attention to canonical forms of linear transformations, diagonalizations of linear transformations, matrices and determinants.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand the basic concepts of Linear transformations, characteristic roots and matrices of linear transformation and its applications.						K3
2	Explain about the algebra of polynomials, polynomial ideals and prime factorization of a polynomial.						K4
3	Understand the basic concepts of determinants and its additional properties.						K3
4	Recognize the concepts of Invariant subspaces and diagonalization process.						K2
5	Analyze canonical Form, Jordan Form and Rational canonical Form.						K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Linear Transformations</b>					<b>18 hours</b>	
Linear transformations – Isomorphism of vector spaces – Representations of linear transformations by matrices – Linear functionals.							
<b>Unit:2</b>	<b>Algebra of Polynomials</b>					<b>17 hours</b>	
The algebra of polynomials – Polynomial ideals - The prime factorization of a polynomial - Determinant functions.							
<b>Unit:3</b>	<b>Determinants</b>					<b>18 hours</b>	
,Permutations and the uniqueness of determinants – Classical adjoint of a (square) matrix – Inverse of an invertible matrix using determinants – Characteristic values – Annihilating polynomials.							
<b>Unit:4</b>	<b>Diagonalization</b>					<b>18 hours</b>	
,Invariant subspaces – Simultaneous triangulations – Simultaneous diagonalization – Direct-sum decompositions – Invariant direct sums – Primary decomposition theorem.							
<b>Unit:5</b>	<b>The Rational and Jordan Forms</b>					<b>17 hours</b>	
Cyclic subspaces – Cyclic decompositions theorem (Statement only) – Generalized Cayley – Hamilton theorem - Rational forms – Jordan forms.							

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Inner Product Spaces – <a href="https://www.youtube.com/watch?v=ERfbtPBEYVA">https://www.youtube.com/watch?v=ERfbtPBEYVA</a>		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	Kenneth M Hoffman and Ray Kunze, Linear Algebra, Second Edition, Prentice-Hall of India Pvt. Ltd, New Delhi, 2013. UNIT I: Chapter 3 : Sections 3.1-3.5 UNIT II: Chapter 4 : Sections 4.1, 4.2, 4.4, 4.5 Chapter 5 : Sections 5.1, 5.2 UNIT III: Chapter 5 : Sections 5.3, 5.4 Chapter 6 : Sections 6.1-6.3 UNIT IV: Chapter 6 : Sections 6.4 - 6.8 UNIT V: Chapter 7 : Sections 7.1 – 7.3	
<b>Reference Books</b>		
1	M. Artin, Algebra, Prentice-Hall of India Pvt. Ltd., 2005.	
2	S. H. Friedberg, A. J. Insel and L. E. Spence, Linear Algebra, Fourth Edition, Prentice-Hall of India Pvt. Ltd., 2009.	
3	I. N. Herstein, Topics in Algebra, Second Edition, Wiley Eastern Ltd, New Delhi, 2013.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.khanacademy.org/math/linear-algebra/vectors-and-spaces">https://www.khanacademy.org/math/linear-algebra/vectors-and-spaces</a>	
2	<a href="https://nptel.ac.in/courses/111/106/111106051/">https://nptel.ac.in/courses/111/106/111106051/</a>	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	L	M	S	S	S	M	M
CO2	M	S	S	M	L	S	S	S	M	M
CO3	S	S	M	L	M	S	S	S	M	M
CO4	L	M	L	S	M	S	M	M	L	L
CO5	M	S	S	M	L	S	S	S	M	M

\*S-Strong; M-Medium; L-Low



Course code	COMPLEX ANALYSIS			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Basic knowledge in complex analysis at Undergraduate level.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Define and recognize the basic properties of the complex numbers</li> <li>2. Enable the students to the differentiability of complex functions and the results related on the study.</li> <li>3. Study Cauchy's integral formula, local properties of analytic functions, general form of Cauchy's theorem and evaluation of definite integral.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remembering the concept of Analytic function and as a mapping on the plane and understand Mobius Transformation.					K1	
2	Understand Cauchy's Integral Formula on open sets on the plane and know about poles, residues and singularities.					K2	
3	Apply the Cauchy's integral formula in residue theorems and in evaluation of definite integrals.					K3 & K4	
4	Analyze and represent the sum function of a power series as an Analytic Function.					K5	
5	Study and Understand periodic function, Weierstrass $\wp$ function and its applications.					K6	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Introduction to the Concept of Analytic Function, Conformality, Linear Transformations</b>					<b>20 hours</b>	
<p><b>Introduction to the concept of analytic function:</b> Limits and continuity – Analytic functions – Polynomials – Rational functions.</p> <p><b>Conformality:</b> Arcs and closed curves – Analytic functions in regions – Conformal Mapping – Length and Area.</p> <p><b>Linear Transformations:</b> The Linear group – The Cross ratio – Elementary Riemann Surfaces.</p>							
<b>Unit:2</b>	<b>Complex Integration and Cauchy's Integral Formula</b>					<b>20 hours</b>	
<p><b>Complex Integration:</b> Line Integrals Rectifiable Arcs – Line Integrals as Functions of Arcs – Cauchy's theorem for a rectangle - Cauchy's theorem in a disk.</p> <p><b>Cauchy's Integral formula:</b> The Index of a point with respect to a closed curve – The Integral formula – Higher derivatives Removable singularities, Taylor's Theorem – Zeros and Poles – The Local Mapping – The Maximum principle – chains and cycles.</p>							
<b>Unit:3</b>	<b>The Calculus of Residues and Harmonic Functions</b>					<b>21 hours</b>	
<p><b>The Calculus of Residues:</b> The Residue theorem – The Argument principle – Evaluation of definite integrals.</p> <p><b>Harmonic functions:</b> The Definitions and basic Properties – Mean value property – Poisson's Formula.</p>							

<b>Unit:4</b>	<b>Series and Product Developments, Partial fractions and Factorization</b>	<b>21 hours</b>
<b>Series and Product Developments:</b> Weierstrass Theorem – The Taylor Series – The Laurent Series. <b>Partial fractions and Factorization:</b> Partial Fractions – Infinite Products – Canonical Products.		
<b>Unit:5</b>	<b>Elliptic Functions</b>	<b>21 hours</b>
<b>Simply Periodic Functions:</b> Representation by Exponentials-The Fourier Development - Functions of Finite Order. <b>Doubly Periodic Functions:</b> The Period Module-Unimodular Transformations - The Canonical Basis-General Properties of Elliptic Functions. <b>Weierstrass Theory:</b> The Weierstrass $\wp$ -function.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	L. V. Ahlfors, Complex Analysis, McGraw Hill, New York, 1979. UNIT I: Chapter 2 : Sections 1.1 – 1.4 Chapter 3 : Sections 2.1 – 2.4, 3.1, 3.2 and 4.3 ) UNIT II: Chapter 4 : Sections 1.1 – 1.5, 2.1 – 2.3, 3.1 – 3.4, 4.1 UNIT III: Chapter 4 : Sections 5.1 – 5.3, 6.1 – 6.3 UNIT IV: Chapter 5 : Sections 1.1 – 1.3, 2.1 – 2.2.(2.3 Omitted) UNIT V: Chapter 7 : Sections 1.1 – 1.3	
<b>Reference Books</b>		
1	S. Ponnusamy and H. Silverman, A Complex Variable with applications, Birkhauser, Boston, 2006.	
2	Karunakaran V, Complex Analysis, Narosa Publishing House Pvt. Ltd, Second Edition, New Delhi, 2006.	
3	Roopkumar R, Complex Analysis, Dorling Kinderley Pvt. Ltd, New Delhi, 2015.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/103/111103070/">https://nptel.ac.in/courses/111/103/111103070/</a>	
2	<a href="https://nptel.ac.in/courses/111/106/111106084/">https://nptel.ac.in/courses/111/106/111106084/</a>	
3	<a href="https://youtu.be/sJcpfmF5oHo">https://youtu.be/sJcpfmF5oHo</a>	

<b>Mapping with Programme Outcomes</b>											
COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	S	S	M	L	L	M	M	M	L	M	
CO2	M	S	M	L	M	M	M	M	L	M	
CO3	M	S	M	S	M	M	S	S	M	M	
CO4	M	S	S	S	M	S	S	M	L	S	
CO5	S	M	S	S	M	S	S	M	M	S	

\*S-Strong; M-Medium; L-Low

Course code	<b>PARTIAL DIFFERENTIAL EQUATIONS</b>			L	T	P	C
<b>Core/Elective/ Supportive</b>	<b>Core</b>			<b>7</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Pre-requisite</b>	Knowledge in Undergraduate differential equations.			<b>Syllabus version</b>	<b>2022-Onwards</b>		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. Introduce different methods to solve partial differential equation.							
2. Acquire knowledge in classification of partial differential equations and the methods to solve.							
3. Enables the students to find the solution of Partial Differential Equation of practical application like in Engineering, Physics, etc.,							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand and remember the physical situations with real world problems to construct mathematical models using partial differential equations and study the methods to solve.						K1 & K2
2	Analyze the type of partial differential equations and different methods to solve.						K4
3	Evaluate Laplace equation and analyze its applications.						K5
4	Apply variable separable method to solve Laplace and Diffusion equation						K3
5	Finding the appropriate method to solve the partial differential equations						K6
<b>K1</b> - Remember; <b>K2</b> – Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Partial Differential Equations of the First Order</b>					<b>21 hours</b>	
Partial Differential Equations – Origins of First Order Differential Equations – Cauchy’s Problem for first order equations – Linear Equations of the first order – Nonlinear partial differential equations of the first order – Cauchy’s method of characteristics – Compatible system of First order Equations, Jacobi’s method.							
<b>Unit:2</b>	<b>Partial Differential Equations of the Second Order</b>					<b>21 hours</b>	
The Origin of Second Order Equations – Linear partial Differential Equations with constant coefficients – Equations with variable coefficients – Separation of variables – The method of Integral Transforms – Non – linear equations of the second order.							
<b>Unit:3</b>	<b>Laplace’s Equation</b>					<b>21 hours</b>	
Elementary solutions of Laplace equation – Families of Equipotential Surfaces – Boundary value problems – Separation of variables – Surface Boundary Value Problems – Separation of Variables – Problems with Axial Symmetry – The Theory of Green’s Function for Laplace Equation.							
<b>Unit:4</b>	<b>The Wave Equation</b>					<b>21 hours</b>	
The Occurrence of the wave equation in Physics – Elementary Solutions of the One – dimensional Wave equations – Vibrating membrane, Application of the calculus of variations – Three dimensional problem – General solutions of the Wave equation.							

<b>Unit:5</b>	<b>The Diffusion Equation</b>	<b>19 hours</b>
Elementary Solutions of the Diffusion Equation – Separation of variables – The use of Integral Transforms – The use of Green’s functions.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>105 hours</b>
<b>Text Book(s)</b>		
1	Ian Sneddon, Elements of Partial Differential Equations, McGraw Hill International Book Company, New Delhi, 1983.	
	UNIT I : Chapter 2 : Sections 1 – 4, 7 -9, 13,(omitted 12)	
	UNIT II : Chapter 3 : Sections 1 ,4,5,9,10,11	
	UNIT III : Chapter 4 : Sections 2- 6,8	
	UNIT IV : Chapter 5 : Sections 1,2,4	
	UNIT V : Chapter 7 : Sections 3 - 6	
<b>Reference Books</b>		
1	M. D. Raisinghania, Advanced Differential Equations, S. Chand and Company Ltd., New Delhi, 2001.	
2	K. Sankara Rao, Introduction to Partial Differential Equations, Second edition, Prentice-Hall of India, New Delhi, 2006.	
3	J. N. Sharma and K. Singh, Partial Differential Equations for Engineers and Scientists, Narosa Publishing House, 2001.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://www.youtube.com/watch?v=bPPWp65qpIA">https://www.youtube.com/watch?v=bPPWp65qpIA</a>	
2	When do PDE NOT have solutions? <a href="https://www.youtube.com/watch?v=BmTFbUAOeec&amp;list=PLGCj8f6sgswntUil8yzohR_qazOfYZCg_&amp;index=49">https://www.youtube.com/watch?v=BmTFbUAOeec&amp;list=PLGCj8f6sgswntUil8yzohR_qazOfYZCg_&amp;index=49</a>	

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>
<b>CO2</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>
<b>CO3</b>	<b>L</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>L</b>
<b>CO4</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>L</b>
<b>CO5</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>M</b>

\*S-Strong; M-Medium; L-Low

Course code	MECHANICS			L	T	P	C
Core/Elective/ Supportive	Core	6	0	0	4		
Pre-requisite	Basic knowledge of Statics and Dynamics at Undergraduate level.	Syllabus version	2022-Onwards				
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. understand the concepts of generalized coordinates, virtual work, Lagrange's equations and Hamilton's Principle. To discuss the applications of the above concepts with suitable examples.</li> <li>2. Proficient in derivation and application of Hamilton-Jacobi equations</li> <li>3. gain knowledge about canonical transformations, Lagrange and Poisson brackets.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	understand the basic concepts of the mechanical system, generalized coordinates, work, energy and momentum.					K1	
2	solve and analyze the Lagrange's equations and integrals of motion with examples.					K3	
3	understand the Hamilton's Principle and other variational principles and gain ability to analyze those principles to the problems arising in practical situations					K4	
4	understand and develop the Hamilton's Principal function and Hamilton Jacobi equation					K5	
5	Get familiar with canonical transformations, conditions of canonicity of a transformation in terms of Lagrange and Poisson brackets.					K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Introductory Concepts</b>					<b>18 hours</b>	
Mechanical system – Generalized Coordinates – Constraints – Virtual Work – Energy and Momentum.							
<b>Unit:2</b>	<b>Lagrange's Equations</b>					<b>18 hours</b>	
Derivations of Lagrange's Equations: Derivations of Lagrange's Equations – Examples – Integrals of Motion.							
<b>Unit:3</b>	<b>Hamilton's Equations</b>					<b>17 hours</b>	
Hamilton's Principle – Hamilton's Equations.							
<b>Unit:4</b>	<b>Hamilton – Jacobi Theory</b>					<b>18 hours</b>	
Hamilton's Principle function – Hamilton – Jacobi Equation – Separability.							
<b>Unit:5</b>	<b>Canonical Transformations</b>					<b>17 hours</b>	
Differential forms and Generating Functions – Lagrange and Poisson Brackets.							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Infinitesimal Canonical Transformation – <a href="https://www.youtube.com/watch?v=jSt1RS4QbEk">https://www.youtube.com/watch?v=jSt1RS4QbEk</a>							
<b>Total Lecture hours</b>					<b>90 hours</b>		

<b>Text Book(s)</b>	
1	D. T. Greenwood, Classical Dynamics, Dover Publications, New York, 1997. Unit-I: Chapter 1: Sections 1.1 – 1.5 Unit-II: Chapter 2: Sections 2.1 – 2.3 Unit-III: Chapter 4: Sections 4.1 – 4.2 Unit-IV: Chapter 5: Sections 5.1 – 5.3 Unit-V: Chapter 6: Sections 6.1, 6.3
<b>Reference Books</b>	
1	F. Gantmacher, Lectures in Analytic Mechanics, MIR Publishers, Moscow, 1975.
2	I. M. Gelfand and S. V. Fomin, Calculus of Variations, Prentice-Hall of India, New Delhi, 1963.
3	S. L. Loney, An Elementary Treatise on Statics, Kalyani Publishers, New Delhi, 1979.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="http://math.ucr.edu/home/baez/classical/textfiles/2005/book/classical.pdf">http://math.ucr.edu/home/baez/classical/textfiles/2005/book/classical.pdf</a> .
2	<a href="https://nptel.ac.in/courses/115/103/115103115/">https://nptel.ac.in/courses/115/103/115103115/</a>
4	<a href="https://www.youtube.com/watch?v=G6OX1NpToaw">https://www.youtube.com/watch?v=G6OX1NpToaw</a>

<b>Mapping with Programme Outcomes</b>										
<b>Cos</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>S</b>	<b>L</b>
<b>CO2</b>	<b>M</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>
<b>CO3</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>L</b>
<b>CO4</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>S</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>S</b>

\*S-Strong; M-Medium; L-Low



**Third  
Semester**

Course code	TOPOLOGY			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Basic knowledge of Real Analysis at Undergraduate level.			Syllabus version		2022-Onwards	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. To introduce the concepts of point-set topology with emphasis on continuous functions, homeomorphism, connectedness, compactness, countability and separation axioms.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Acquire knowledge about various types of topological spaces and their properties						K1
2	Discuss connected spaces, the components of a space						K2
3	Apply the properties and derive the proofs of theorems.						K3
4	Construct a variety of examples and counter examples in topology						K3
5	Understand the properties of the compact spaces and analyse the different types of compactness.						K4
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Topological Spaces and Continuous functions</b>					<b>21 hours</b>	
Types of Topological Spaces and Examples - Basics for a topology - The order topology - The product topology on $X \times Y$ - The subspace topology - Closed sets and limit points - Continuous functions.							
<b>Unit:2</b>	<b>Topological Spaces and Continuous functions (Contd) and Connectedness</b>					<b>21 hours</b>	
Connected spaces - Connected subspaces of the real line - Components and Local connectedness.							
<b>Unit:3</b>	<b>Compactness</b>					<b>20 hours</b>	
Compact spaces - Compact subspaces of the real line - Uniform continuity theorem - Limit Point Compactness - complete metric spaces - compactness in metric spaces.							
<b>Unit:4</b>	<b>Countability and Separation Axioms</b>					<b>20 hours</b>	
First and Second countable spaces - Lindeloff and Separable spaces - Countability axioms - The separation axioms - Normal spaces - The Uryshon's lemma.							
<b>Unit:5</b>	<b>Countability and Separation Axioms and Tychonoff Theorem</b>					<b>21 hours</b>	
The Urysohn Metrization Theorem - Tietze Extension Theorem - The Tychonoff theorem - Stone Cech compactifications.							



<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	James R. Munkres, Topology, Second Edition, Prentice-Hall of India, New Delhi, 2006. Unit I: Chapter 2: Sections: 12 – 18. Unit II: Chapter 3: Sections: 23 – 25. Unit III: Chapter 3: Sections: 26 – 28. Unit IV: Chapter 4: Sections: 30– 33. Unit V: Chapter 4: Sections: 34, 35. Chapter 5: Sections: 37,3	
<b>Reference Books</b>		
1	G. F. Simmons, Introduction to Topology and Modern Analysis, Tata McGraw-Hill Edition, New Delhi, 2004.	
2	Fred H. Croom, Principles of Topology, Cengage India Pvt Ltd, New Delhi, 2009.	
3	Seymour Lipschutz, Schaum's Outline of Theory and Problems of General Topology, McGraw-Hill Edition, New Delhi, 2006.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/content/storage2/courses/111106054/Topology%20complete%20course.pdf">https://nptel.ac.in/content/storage2/courses/111106054/Topology%20complete%20course.pdf</a>	
2	<a href="https://www.youtube.com/watch?v=Oe3Qjk3t0go&amp;lc=UghijV07WCAwpHgCoAEC">https://www.youtube.com/watch?v=Oe3Qjk3t0go&amp;lc=UghijV07WCAwpHgCoAEC</a>	
3	<a href="https://www.youtube.com/watch?v=2OMPmrHEO2M">https://www.youtube.com/watch?v=2OMPmrHEO2M</a>	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	M	S	L	M	M	S	L	M	S
CO2	S	M	M	L	L	S	S	M	S	M
CO3	S	M	S	L	M	S	S	S	M	S
CO4	S	S	S	M	L	S	S	S	M	S
CO5	S	M	S	M	M	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	FLUID DYNAMICS			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Knowledge in Kinematics and Differential equations at Undergraduate level.			Syllabus version	2022-Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. able to know the fundamental concepts of fluids and its properties.</li> <li>2. develop the problems solving skill in fluid dynamics.</li> <li>3. know the real-life applications of fluid dynamics.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Recall the basic concepts of velocity, density and curvilinear co-ordinates.						K1
2	Understand the concepts and equations of fluid dynamics						K2
3	Analyze and understand the concepts of the force experienced by a two-dimensional fixed body in a steady irrotational flow.						K2&K4
4	Analyze the approximate solutions of the Navier – Stokes equation.						K4&K5
5	Analyze and apply the appropriate method to solve integral equation of boundary layer, Blasius equation and its series solution.						K3&K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Bernoulli's Equation and Equations of Motion</b>					<b>20 hours</b>	
Introductory Notions – Velocity – Stream Lines and Path Lines – Stream Tubes and Filaments – Fluid Body – Density – Pressure. Differentiation with respect to the time – Equation of continuity – Boundary conditions – Kinematical and physical – Rate of change of linear momentum – Equation of motion of an inviscid fluid.							
<b>Unit:2</b>	<b>Equations of Motion (Contd)</b>					<b>20 hours</b>	
Euler's momentum Theorem – Conservative forces – Bernoulli's theorem in steady motion – energy equation for inviscid fluid – circulation – Kelvin's theorem – vortex motion – Helmholtz equation.							
<b>Unit:3</b>	<b>Two-Dimensional Motion</b>					<b>21 hours</b>	
Two Dimensional Motion – Two Dimensional Functions – Complex Potential – basic singularities – source – sink – Vortex – doublet – Circle theorem. Flow past a circular cylinder with circulation – Blasius Theorem – Lift force. (Magnus effect)							
<b>Unit:4</b>	<b>Dynamics of Real Fluids</b>					<b>21 hours</b>	
Viscous flows – Navier-Stokes equations – Vorticity and circulation in a viscous fluid – Steady flow through an arbitrary cylinder under pressure – Steady Couette flow between cylinders in relative motion – Steady flow between parallel planes.							
<b>Unit:5</b>	<b>The Laminar Boundary Layer in Incompressible Flow</b>					<b>21 hours</b>	
Boundary Layer concept – Boundary Layer equations – Displacement thickness, Momentum thickness – Kinetic energy thickness – integral equation of boundary layer – flow parallel to semi							

infinite flat plate – Blasius equation and its solution in series.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	<b>Units I and II:</b> L. M. Milne Thomson, Theoretical Hydro Dynamics, Macmillan Company, 5th Edition (1968). Chapter I : Sections 1.0 – 1.3., 3.10-3.41 (omit 3.32) Chapter III : Sections 3.42 – 3.53 (omit 3.44)	
2	<b>Units III, IV and V:</b> Modern Fluid Dynamics Volume I, N. Curle and H. J. Davies, D. Van Nostrand Company Limited., London, 1968. Chapter III : Sections 3.1 – 3.7.5 (omit 3.3.4, 3.4, 3.5.2,3.6) Chapter V : Sections 5.2.1– 5.3.3 Chapter VI : Sections 6.1 – 6.3.1 (omit 6.2.2., 6.2.5)	
<b>Reference Books</b>		
1	F. Chorlton, Textbook of Fluid Dynamics, CBS Publishers, New Delhi, 2004.	
2	A. J. Chorin and A. Marsden, A Mathematical Introduction to Fluid Dynamics, Springer-Verlag, New York, 1993.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/112/106/112106200/">https://nptel.ac.in/courses/112/106/112106200/</a>	
2	<a href="https://nptel.ac.in/courses/112/105/112105171/">https://nptel.ac.in/courses/112/105/112105171/</a>	

<b>Mapping with Programme Outcomes</b>											
COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	M	S	M	M	M	L	L	M	M	S	
CO2	M	S	M	M	S	M	S	M	M	S	
CO3	L	M	M	M	S	M	S	S	M	S	
CO4	M	M	S	S	M	M	S	S	M	S	
CO5	L	M	S	M	M	M	S	S	M	S	

\*S-Strong; M-Medium; L-Low

Course code	MATHEMATICAL STATISTICS			L	T	P	C
Core/Elective/ Supportive	Core			6	0	0	4
Pre-requisite	Basic Knowledge in Statistics and Probability theory.			syllabus version		2022-Onwards	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Enables to learn different aspects of statistics.</li> <li>2. Acquire knowledge about moments and properties of theoretical distributions.</li> <li>3. Study unbiasedness and consistency of limiting distributions.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Remembering the understanding the basic concepts such as statistics, probability and random variables.					K1 & K2	
2	Applying the concepts and methods to find the moments of the distributions.					K3	
3	Study multivariate distributions and the independence of random variables. Further evaluating the marginal distributions from bivariate distributions.					K5	
4	Analyze and study the properties of some discrete as well as continuous distributions					K4	
5	Understand the convergence of distributions and central limit theorem.					K2	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Probability and Distributions</b>					<b>18 hours</b>	
Introduction - Set Theory - The Probability Set Function - Conditional Probability and Independence –Random Variables - Discrete Random Variables- Continuous Random Variables.							
<b>Unit:2</b>	<b>Probability and Distributions (continued) and Multivariate Distributions</b>					<b>17 hours</b>	
<b>Probability and Distributions:</b> Expectation of a Random Variables - Some Special Expectations - Important Inequalities.							
<b>Multivariate Distributions:</b> Distributions of Two Random Variables - Transformations: Bivariate Random Variables - Conditional Distributions and Expectations - Independent Random Variables.							
<b>Unit:3</b>	<b>Some Special Distributions</b>					<b>18 hours</b>	
The Binomial and Related Distributions - The Poisson Distribution - The $\Gamma$ , $\chi^2$ , and $\beta$ Distributions - The Normal Distribution.							
<b>Unit:4</b>	<b>Some Special Distributions (continued), Unbiasedness, Consistency and Limiting Distributions</b>					<b>17 hours</b>	
<b>Some Special Distributions (continued):</b> t and F-Distributions.							
<b>Unbiasedness, Consistency and Limiting Distributions:</b> Expectations of Functions -Convergence in Probability - Convergence in Distribution - Central Limit Theorem.							

<b>Unit:5</b>	<b>Some Elementary Statistical Inferences</b>	<b>18 hours</b>
Sampling and Statistics - Introduction to Hypothesis Testing -- Chi-Square Tests – The Method of Monte Carlo.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
	<b>Total Lecture hours</b>	<b>90 hours</b>
<b>Text Book(s)</b>		
1	Robert V. Hogg, Allen T. Craig and Joseph W. McKean, Introduction to Mathematical Statistics, Sixth Edition, Pearson Education, 2005. Unit-I: 1.1 – 1.7 Unit-II: 1.8 – 1.10, 2.1 – 2.3, 2.5 Unit-III: 3.1 – 3.4 Unit-IV: 3.6, 4.1 – 4.4 Unit-V: 5.1, 5.4 – 5.8	
<b>Reference Books</b>		
1	Michael J. Crawley, The R Book, John Wiley & Sons, Second Edition (2013).	
2	Marek Fisz, Probability Theory and Mathematical Statistics, John Wiley.	
3	Vijay K. Rohatgi and A.K. Md. Ehsanes Saleh, An Introduction to Probability and Statistics, Wiley India, Second Edition (2001).	
4	M. Rajagopalan and P. Dhanavanthan, Statistical Inference, PHI Learning Pvt. Ltd., New Delhi (2012).	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/104/111104032/#">https://nptel.ac.in/courses/111/104/111104032/#</a>	
2	<a href="https://nptel.ac.in/courses/111/105/111105090/">https://nptel.ac.in/courses/111/105/111105090/</a>	

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	L	L	M	S	S	S	S
CO2	M	S	M	L	S	S	M	S	S	S
CO3	S	M	S	M	M	S	S	M	L	S
CO4	M	M	S	M	M	S	M	S	M	S
CO5	M	M	L	M	S	M	S	S	S	S

\*S-Strong; M-Medium; L-Low

Course code	GRAPH THEORY				L	T	P	C
Core/Elective/ Supportive	Core				6	0	0	4
Pre-requisite	Self-explanatory course				Syllabus version		2022- Onwards	
<b>Course Objectives:</b>								
The main objectives of this course are to:								
1. To provide deep knowledge about fundamental concepts of Graphs and Trees. 2. To introduce Matchings, Coloring, and Chromatic Number and to see its application in higher order thinking.								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Understand the basic concepts of Graphs and Trees						K2	
2	Analyze vertex and edge connectivity concepts						K4	
3	Acquire knowledge in Matching and Colourings						K4	
4	Apply Chromatic Number						K3	
5	Determining the planar, non-planar, and directed graphs						K3	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>Graphs, Subgraphs and Trees</b>						<b>18 hours</b>	
<b>Graphs, Subgraphs:</b> Graphs and Simple Graphs – Graph Isomorphism – The Incidence and Adjacency matrices, Subgraphs – Vertex Degrees – paths and Connection – Cycles. <b>Trees:</b> Trees – Cut edges and Bonds – cut vertices – Cayley's formula.								
<b>Unit:2</b>	<b>Connectivity, Euler tours and Hamilton Cycles</b>						<b>17 hours</b>	
<b>Connectivity:</b> Connectivity – Blocks. <b>Euler tours and Hamilton Cycles:</b> Euler tours - Hamilton Cycles.								
<b>Unit:3</b>	<b>Matchings and Edge Colourings</b>						<b>18 hours</b>	
<b>Matchings:</b> Matchings coverings in Bipartite Graphs – Perfect Matchings. <b>Edge colourings:</b> Edge chromatic number – Vizing's theorem.								
<b>Unit:4</b>	<b>Independent sets, Cliques and Vertex Colourings</b>						<b>18 hours</b>	
<b>Independent sets, Cliques:</b> Independent sets – Ramsey's theorem. <b>Vertex Colourings:</b> Chromatic Number – Brook's Theorem – Hajo's Conjecture – Chromatic Polynomials –								
<b>Unit:5</b>	<b>Planar Graphs and Directed Graphs</b>						<b>17 hours</b>	
<b>Planar Graphs:</b> Plane and planar Graphs – Dual Graphs – Euler's formula – Bridges – Kuratowski's theorem (Proof omitted) – The Five Colour Theorem and the Four Colour Conjecture. <b>Directed Graphs:</b> Directed Graphs. Simple problems in the exercise of all units can also be included.								

<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Interval graphs, chordal graphs – <a href="https://www.youtube.com/watch?v=Tg2_YO4CCNc">https://www.youtube.com/watch?v=Tg2_YO4CCNc</a>		
<b>Total Lecture hours</b>		<b>90 hours</b>
<b>Text Book(s)</b>		
1	J. A. Bondy and U. S. R. Murty, Graph Theory with Applications, American Elsevier Company Inc., New York, 1976. Unit-I: Sections: 1.1 – 1.7, 2.1 – 2.4 Unit-II: Sections: 3.1 – 3.2, 4.1 – 4.2 Unit-III: Sections: 5.1 – 5.3, 6.1 – 6.2 Unit-IV: Sections: 7.1 – 7.2, 8.1 – 8.4(8.5 omitted) Unit-V: Sections: 9.1 – 9.6, 10.1	
<b>Reference Books</b>		
1	Frank Harary, Graph Theory, Addison-Wesley, Reading, 1969.	
2	M.Murugan, Graph Theory and Algorithms, Second Edition, Muthali Publishing House, Chennai, 2018.	
3	K. R. Parthasarathy, Basic Graph Theory, Tata McGraw Hill, New Delhi, 1994.	
4	Douglas B. West, Introduction to Graph Theory, Prentice Hall of India, 2001.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/106/111106050/">https://nptel.ac.in/courses/111/106/111106050/</a>	
2	<a href="https://nptel.ac.in/courses/106/108/106108054/">https://nptel.ac.in/courses/106/108/106108054/</a>	
Course Designed By: Dr. R. Buvaneswari		

<b>Mapping with Programme Outcomes</b>											
COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	L	M	M	L	M	M	M	S	M	S	
CO2	M	S	S	M	M	L	L	S	M	S	
CO3	S	S	S	M	L	L	L	M	L	M	
CO4	L	M	S	S	M	L	M	S	M	M	
CO5	M	L	S	M	M	M	M	S	M	S	

\*S-Strong; M-Medium; L-Low

Course code	FUNCTIONAL ANALYSIS			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Know the basic concepts of Real Analysis and Linear Algebra at Undergraduate level			Syllabus version		2022-Onwards	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
1. To get an overview of normed spaces and familiarize on Banach space, Hilbert space , conjugate space ,bounded linear operators and spectral theory.							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Familiarize with the concepts of normed linear spaces and operators on normed linear space					K1	
2	Demonstrate an understanding of the concepts of Hilbert spaces and Banach spaces, and their role in mathematics					K2	
3	Apply the theorems.					K3	
4	Obtain Orthogonal complements, Orthonormal sets and conjugate space.					K4	
5	Understand the concepts of linear operators, self adjoint, unitary operators , isometric isomorphism on Hilbert spaces ,Determinants ,the spectrum of an operator, Banach algebra .					K2	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> - Create							
<b>Unit:1</b>	<b>Banach Spaces</b>					<b>21 hours</b>	
Banach spaces – The definition and some examples – Continuous linear transformations – The Hahn-Banach theorem –Dual spaces- The openmapping theorem - Closed Graph theorem.							
<b>Unit:2</b>	<b>Hilbert spaces</b>					<b>21 hours</b>	
- Hilbert spaces – The definition and some simple properties – Orthogonal complements and complements - Orthonormal sets andsequences – Maximal Orthonormal sets.							
<b>Unit:3</b>	<b>Hilbert spaces (Contd)</b>					<b>21 hours</b>	
The Conjugate space $H^*$ - Representation of functional on Hilbert spaces -The adjoint of an operator – Self-adjoint operators – Normal and unitary operators – Projections.							
<b>Unit:4</b>	<b>Finite-Dimensional Spectral Theory</b>					<b>20 hours</b>	
Matrices – Determinants and the spectrum of bounded operator – The spectral theorem.							
<b>Unit:5</b>	<b>General Preliminaries on Banach Algebras</b>					<b>20 hours</b>	
The definition and some examples of Banach algebra – Regular and singular elements – Topological divisors of zero – The spectrum – The formula for the spectral radius.							



<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Commutative Banach Algebras – <a href="https://www.youtube.com/watch?v=SW-GuE0waxM">https://www.youtube.com/watch?v=SW-GuE0waxM</a>		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	G. F. Simmons, Introduction to Topology and Modern Analysis, McGraw-Hill Book Company, London, 1963. Unit I: Sections: 46 – 48,50. Unit II: Sections: 51 – 54. Unit III: Sections: 55 – 59. Unit IV: Sections: 60 – 63. Unit V: Sections: 64 – 68.	
<b>Reference Books</b>		
1	C. Goffman and G. Pedrick, A First Course in Functional Analysis, Prentice Hall of India, New Delhi, 1987.	
2	G. Bachman and L. Narici, Functional Analysis, Academic Press, New York, 1966.	
3	L. A. Lusternik and V.J. Sobolev, Elements of Functional Analysis, Hindustan Publishing Corporation, New Delhi, 1971.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/105/111105037/">https://nptel.ac.in/courses/111/105/111105037/</a>	
2	<a href="https://ocw.mit.edu/courses/mathematics/18-102-introduction-to-functional-analysis-spring-2009/lecture-notes/">https://ocw.mit.edu/courses/mathematics/18-102-introduction-to-functional-analysis-spring-2009/lecture-notes/</a>	

<b>Mapping with Programme Outcomes</b>										
<b>COs</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>
<b>CO1</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>S</b>
<b>CO2</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>
<b>CO3</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO4</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>L</b>	<b>L</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>
<b>CO5</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>L</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>M</b>	<b>S</b>	<b>M</b>

\*S-Strong; M-Medium; L-Low

Course code	MATHEMATICAL METHODS			L	T	P	C
Core/Elective/ Supportive	Core			7	0	0	4
Pre-requisite	Basic Knowledge in Calculus and Differential equations.			Syllabus version	2022-Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. Give an introduction to mathematical methods for solving application-oriented problems</li> <li>2. Able to know the concepts line Integral Transforms, Integral Equations and calculus of variations.</li> <li>3. Develop the alternatives to solve the real-life problems.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand and Apply various transforms and Integral equations to solve problems in all respects.					K2 & K3	
2	Recognize and solve the special cases of Volterra Integral equations by the method of resolvent kernel, method of successive approximations and by using transforms.					K1& K5	
3	Understand the relations between the Hankel, Fourier transform and their applications in evaluating the equations.					K2& K5	
4	Understand the formulation of variational problems, the variation of functional and its properties.					K2	
5	Demonstrate and apply the methods in all application problems in day-today life.					K5& K6	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Integral Equations</b>					<b>21 hours</b>	
Types of Integral equations – Integral Fredholm Alternative – Approximate method – Equation with separable Kernel - Volterra integral equations – Fredholm’s theory.							
<b>Unit:2</b>	<b>Application of Integral Equations to Ordinary Integral Equations and Singular Integral Equations</b>					<b>21 hours</b>	
Initial value problems Boundary value problems – singular integral equations – Abel Integral equation.							
<b>Unit:3</b>	<b>Fourier Transforms</b>					<b>20 hours</b>	
Fourier Transforms, Fourier sine and cosine transforms – Fourier transforms of derivatives - convolution integral – Parseval’s Theorem - Solution of Laplace Equations by Fourier transform.							
<b>Unit:4</b>	<b>Hankel Transforms</b>					<b>20 hours</b>	
Properties of Hankel Transforms – Hankel transformation of derivatives of functions - The Parseval’s relation – relation between Fourier and Hankel transforms.							

<b>Unit:5</b>	<b>Calculus of Variations</b>	<b>21 hours</b>
Variation and its properties – Euler’s(Euler Lagrange’s) equation – functionals dependent on the functions of several independent variables		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Z-transform and inverse Z-transform – <a href="http://www.digimat.in/nptel/courses/video/111107098/L39.html">http://www.digimat.in/nptel/courses/video/111107098/L39.html</a>		
<b>Total Lecture hours</b>		<b>105 hours</b>
<b>Text Book(s)</b>		
1	<b>Units I and II:</b> Ram P. Kanwal, Linear Integral Equations Theory and Technique, Academic Press, New York, 1971. Unit I: Chapter 2: 46 – 50. Unit II: Chapter 3: 51 – 54.	
2	<b>Units III and IV:</b> I. N. Sneddon, The Use of Integral Transforms, McGraw-Hill, New York, 1972. Unit III: Chapter 2: 2.3 – 2.5, Chapter 3: 3.3 – 3.4. Unit IV: Chapter 5: 5.1 – 5.2, 5.10.1 – 5.10.2, 5.6-5.7 omitted, Chapter 8: 8.1 – 8.2.	
3	<b>Unit V:</b> L. Elsgolts, Differential Equations and Calculus of Variations, Mir Publishers, Moscow, 1970. Unit V: Chapter 6: 6.1 – 6.3, 6.4 – 6.7. 6.14,6.15 omitted	
<b>Reference Books</b>		
1	Calculus of Variations, A.S. Gupta, Prentice Hall of India, New Delhi, 2005.	
2	Integral Equations and Boundary value problems, M.D. Raisinghania, S. Chand and Company, 2007.	
3	M.L. Krasnov, Problems and Exercises in Integral Equations, Mir Publication Moscow 1971.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/111/107/111107103/">https://nptel.ac.in/courses/111/107/111107103/</a>	
2	<a href="https://nptel.ac.in/courses/111/107/111107098/(Lec%2051%20to%2055)">https://nptel.ac.in/courses/111/107/111107098/(Lec 51 to 55)</a>	
3	<a href="https://youtu.be/tfRZqIfIEfQ">https://youtu.be/tfRZqIfIEfQ</a>	

<b>Mapping with Programme Outcomes</b>											
COs \ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	M	M	L	M	M	M	M	S	L	S	
CO2	M	M	L	M	M	L	S	M	M	M	
CO3	L	M	M	M	L	L	S	M	M	M	
CO4	L	M	M	L	M	L	M	S	M	S	
CO5	M	M	M	S	M	M	S	S	L	S	

\*S-Strong; M-Medium; L-Low

Course code	OPTIMIZATION TECHNIQUES				L	T	P	C
Core/Elective/ Supportive	Core				6	0	0	4
Pre-requisite	Basic knowledge in Operation Research at Undergraduate level.				Syllabus version		2022-Onwards	
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. To make the students understand solving LPP using various methods.</li> <li>2. To understand the application of Network Routing problems in real life situation and methods of solving related problems.</li> <li>3. To understand the concept of Kuhn tucker method.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Explain various techniques to solve real life problems expressed in terms of LPP.						K2	
2	Solving LPP through Dynamic Programming						K3	
3	Apply the fundamental concept of Inventory control.						K3	
4	Understanding the Network Routing problems.						K2	
5	Solving NLPP using Kuhn–Tucker Method						K3	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>Integer Programming</b>						<b>18 hours</b>	
Introduction – Integer Programming Formulations – Gomory’s construction–Fractional cut method(all integer)–The Cutting – Plane Algorithm – Branch–and–Bound Technique – Zero–One Implicit Enumeration Algorithm.								
<b>Unit:2</b>	<b>Dynamic Programming</b>						<b>18 hours</b>	
Introduction – Application of Dynamic Programming: Capital Budgeting Problem – Reliability Improvement Problem – Stage–coach Problem – Cargo Leading Problem – Minimizing Total Tardiness in Single Machine Scheduling Problem – Optimal Subdividing Problem – Solution of Linear Programming Problem through Dynamic Programming.								
<b>Unit:3</b>	<b>Inventory</b>						<b>17 hours</b>	
Introduction–Inventory Decisions–Cost Associated– with Inventories – Factors Affecting inventory – Economic Order Quantity–Deterministic Inventory Problems with No Shortages– Deterministic inventory Models with shortages–EOQ with Price Breaks–Multi Item Deterministic problems–Inventory Problems with Uncertain Demand.								
<b>Unit:4</b>	<b>NETWORK ROUTING PROBLEMS</b>						<b>17 hours</b>	
NETWORK ROUTING PROBLEMS: Introduction-Network Flow Problems- Minimal spanning tree problem- Shortest route problems.								

<b>Unit:5</b>	<b>Nonlinear Programming</b>	<b>18 hours</b>
Introduction – Lagrangian Method –Jacobi Method– Kuhn–Tucker Method – Quadratic Programming – Separable Programming – Chance–Constrained Programming or Stochastic Programming.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Goal Programming – <a href="https://freevideolectures.com/course/2678/advanced-operations-research/9">https://freevideolectures.com/course/2678/advanced-operations-research/9</a>		
	<b>Total Lecture hours</b>	<b>90 hours</b>
<b>Text Book(s)</b>		
1	Hamdy A. Taha, Operations Research, Sixth edition, Prentice–Hall of India private Limited, New Delhi,1997.	
1.	Kanti Swarup, P. K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons,Educational Publishers, New Delhi.	
2.	R. Panneerselvam, Operations Research, Second Edition, PHI Learning Private Limited,Delhi, 2015.	
	Unit 1:Chapter 7- 7.1-7.5,7.7-7.8(Kanti Swarup, P. K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons,Educational Publishers, New Delhi.) Chapter 6-6.2 ( R. Panneerselvam, Operations Research, Second Edition, PHI Learning Private Limited,Delhi, 2015)	
	Unit 2:Chapter 8- 8.1,8.2(8.2.1-8.2.7)( R. Panneerselvam, Operations Research, Second Edition, PHI Learning Private Limited,Delhi, 2015)	
	Unit 3:Chapter 19-19.1,19.4,19.6,19.7,19.9-19.13 Chapter 20-20.1,20.2(Kanti Swarup, P. K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons,Educational Publishers, New Delhi.)	
	Unit 4:Chapter 24: 24.1-24.4 (Kanti Swarup, P. K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons,Educational Publishers, New Delhi.)	
	Unit 5: Chapter17- 17.1-17.6,(Jacobi’s method omitted) ( R. Panneerselvam, Operations Research,Second Edition, PHI Learning Private Limited,Delhi, 2015)	
<b>Reference Books</b>		
1	Kanti Swarup, P. K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons,Educational Publishers, New Delhi. Hamdy A. Taha, Operations Research, Sixth edition, Prentice–Hall of India private Limited, New Delhi,1997.	
2	Prem Kumar Gupta, D. S. Hira Operations Research, Seventh Edition, S. Chand & Company Pvt. Ltd, 2014.	
3	F. S. Hillier and J. Lieberman, Introduction to Operation Research, Seventh Edition, Tata–McGraw-Hill Publishing Company, New Delhi, 2001.	
4	R. Panneerselvam, Operations Research, Second Edition, PHI Learning Private Limited, Delhi, 2015.	
5	I. Griva, S. G. Nash and A. Sofer, Linear and Nonlinear Optimization, SIAM Publication, 2018.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		

1	<a href="https://www.youtube.com/watch?v=WmeUT0jQdwc">https://www.youtube.com/watch?v=WmeUT0jQdwc</a>
2	<a href="https://www.youtube.com/watch?v=FTEMe5oUrds&amp;list=PLLy_2iUCG87Bq8RGMtdeFZiB-87V4i9p1&amp;index=28">https://www.youtube.com/watch?v=FTEMe5oUrds&amp;list=PLLy_2iUCG87Bq8RGMtdeFZiB-87V4i9p1&amp;index=28</a>
3	<a href="https://www.youtube.com/watch?v=2aPlzhsEsIw">https://www.youtube.com/watch?v=2aPlzhsEsIw</a>
4	<a href="https://www.youtube.com/watch?v=PavZX3hAL6I">https://www.youtube.com/watch?v=PavZX3hAL6I</a>

#### Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	L	S	M	M	S	S	S	S	S
CO2	S	M	S	S	S	S	M	S	L	S
CO3	S	M	S	S	S	S	M	S	L	S
CO4	M	L	S	M	M	S	S	S	S	S
CO5	S	M	S	S	S	S	M	S	L	S

\*S-Strong; M-Medium; L-Low

Course code	COMPUTER PROGRAMMING (C++ THEORY)			L	T	P	C
Core/Elective/ Supportive	Core			4	0	0	4
Pre-requisite	Basic knowledge in C++ Programming such as Tokens, Expressions, Control Structure, Classes and Objects.			Syllabus version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>To give the students an awareness of the object oriented programming.</li> <li>To enable the students to write the C++ programs using classes, functions and interfaces.</li> <li>To make applications using C++ programs.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Understand and apply the C++ structure, tokens, expressions, control structures					K2, K3	
2	Ability to declare various prototyping, friend and virtual functions					K3	
3	Create Classes, objects, arrays of objects, constructors, and Destructors					K3, K4	
4	Analyze over loading operators and inheritance					K4	
5	Deliberate files, pointers and templates. Create, design and develop quality programs in C++					K4, K5	
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>Tokens, Expressions and Control Structure</b>				<b>12 hours</b>		
<b>Basic Concept of Object-Oriented Programming-</b> Basic Concept of OOPS-Benefits of OOP – Applications of OOP. <b>Tokens, Expressions and Control Structure:</b> Introduction – Tokens – Keywords – Identifiers and Constants – Basic Data Types – User Defined Data Types – Derived Data Types – Declaration of Variables – Dynamic Initialization of Variables – Reference Variables – Operators - Scope Resolution Operator- Control Structures.							
<b>Unit:2</b>	<b>Functions in C++</b>				<b>12 hours</b>		
<b>Functions in C++:</b> Introduction – The Main Function – Function Prototyping – Call by Reference– Return by Reference – Inline Functions – Default Arguments – const Arguments – Recursion – Function Over Loading – Friend and Virtual Functions – Math Library Functions.							
<b>Unit:3</b>	<b>Classes and Objects &amp; Constructors and Destructors</b>				<b>12 hours</b>		
<b>Classes and Objects:</b> Introduction – C Structures Revisited – Specifying a Class –Defining Member Functions – A C++ Program with Class – Making An Outside Function Inline –Nesting Of Member Functions – Private Member Functions – Arrays Within A Class –Arrays of Objects – Objects as Function Arguments – Friend Functions. <b>Constructors and Destructors:</b> Introduction – Constructors – Parameterized Constructors – Multiple Constructors in a Class – Constructors with Default Arguments – Dynamic Initialization of Objects – Copy Constructor – Destructors.							

<b>Unit:4</b>	<b>Operator Overloading, Inheritance and Extending Classes</b>	<b>11 hours</b>
<p><b>Operator Overloading:</b> Introduction – Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – Overloading Binary Operators Using Friends – Manipulating of Strings Using Operators – Rules for Overloading Operators.</p> <p><b>Inheritance - Extending Classes:</b> Introduction – Defining Derived Classes – Single Inheritance – Making a Private Member Inheritable – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance – Hybrid Inheritance – Virtual Base Classes .</p>		
<b>Unit:5</b>	<b>Streams and Working with files</b>	<b>11 hours</b>
<p><b>Streams:</b> Introduction – C++ Streams – C++ Stream Classes. <b>Working with files:</b> Classes for File Stream Operations - Opening and Closing a File – File Modes – File Pointers and their Manipulations – Sequential Input and Output Operations –Random Access.</p>		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars – webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	<p>E. Balaguruswamy, Object–Oriented Programming with C++, Sixth Edition, Tata McGraw-Hill Publishing Company Limited.</p> <p>Unit I : 1.4 – 1.6, 3.1 – 3.14 and 3.24</p> <p>Unit II : 4.1 – 4.11</p> <p>Unit III : 5.1 – 5.9, 5.13 – 5.15, 6.1 – 6.7 and 6.11</p> <p>Unit IV : 7.1 – 7.7 and 8.1 – 8.9(omitted 8.10)</p> <p>Unit V : 10.1 – 10.3 and 11.1 – 11.8</p>	
<b>Reference Books</b>		
1	Programming with C++ by D. Ravichandran, -Tata McGraw Hill publishing company limited, New Delhi.	
2	Object Oriented Programming with C++ by S.S.Vinod Chandra, New age.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/106/105/106105151/">https://nptel.ac.in/courses/106/105/106105151/</a>	
2	<a href="https://youtu.be/1rJZb_Ugc4E">https://youtu.be/1rJZb_Ugc4E</a>	

<b>Mapping with Programme Outcomes</b>											
COs \ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	S	M	S	M	M	S	L	M	S	S	
CO2	M	S	S	M	S	S	L	M	S	S	
CO3	M	M	L	S	M	M	L	S	S	M	
CO4	M	S	S	L	M	S	M	S	S	M	
CO5	M	M	L	L	S	S	M	S	S	M	

\*S-Strong; M-Medium; L-Low



Course code	COMPUTER PROGRAMMING (C++ PRACTICAL)			L	T	P	C
Core/Elective/ Supportive	Core			0	0	2	4
Pre-requisite	basic knowledge in programming			Syllabus Version	2022- Onwards		
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. To enable the students to solve problems in C++ using different numerical methods.</li> <li>2. To make the mathematical calculations simpler.</li> </ol>							
<p><b>1. friend FUNCTION usage:</b> Create two classes to store the value of distances in meters-centimetres and feet-inches. Write a program that can create the values of the class objects and add one object with another. Use a friend function to carry out addition operation. The result may be stored in any object depending on the units in which results are required. The display should be in the order of meters &amp; centimetre and feet &amp; inches depending on the order of display.</p> <p><b>2. OVERLOADING OBJECTS:</b> Create a class that contains one float data member. Overload all the four arithmetic operators so that operate on the objects of the class.</p> <p><b>3. OVERLOADING CONVERSIONS:</b> Design a class <b>Polar</b> which describes a point in a plane using polar co-ordinates <b>radius</b> and <b>angle</b>. Use the overloaded + operator to add two objects of <b>Polar</b>. Note that we cannot add polar values of two points directly. This requires first the conversion of points into rectangular co-ordinates and finally converting the result into polar co-ordinates. You need to use following trigonometric formulae: <math>r \cos(a)</math>; <math>r \sin(a)</math>; = ; = * + * .</p> <p><b>4. OVERLOADING VECTOR:</b> Define a class for Vector containing scalar values. Apply overloading concepts for Vector Addition, Multiplication of a Vector by a scalar quantity, replace the values in a Position Vector.</p> <p><b>5. OVERLOADING MATRIX:</b> Create a class <b>MAT</b> of size <math>m * n</math>. Define all possible matrix operations for <b>MAT</b> type objects. Verify the identity: <math>(A-B)^2 = A^2 + B^2 - 2AB</math>.</p> <p><b>6. INHERITANCE:</b> Create three classes: <b>alpha</b>, <b>beta</b> and <b>gamma</b>, each containing one data member. The class <b>gamma</b> should be inherited from both <b>alpha</b> and <b>beta</b>. Use a constructor function in the class <b>gamma</b> to assign values to the data members of all the classes. Write a program to print the value of data members of all the three classes.</p> <p><b>7. FILE HANDLING:</b> Write a program to create a disk file containing the list of names and telephone numbers in two columns, using a class object to store each set of data. Design an interactive menu to access the file created and to implement the following tasks:</p> <ol style="list-style-type: none"> <li>(a) Determine the telephone number of the specified person.</li> <li>(b) Determine the name if a telephone number is known.</li> <li>(c) Update the telephone number, whenever there is a change.</li> </ol>							



# Elective Courses

Course code	Elective 1: NUMBER THEORY			L	T	P	C
Core/Elective/ Supportive	Elective			4	0	0	4
Pre-requisite	Basic knowledge in Number system, divisibility and some related functions.			Syllabus version		2022-Onwards	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>To give Introduction to Elementary Number Theory.</li> <li>To show how certain number theorems can be applied within Cryptography.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Find quotients and remainders and greatest common divisors applying Euclidean Algorithm						K3
2	Understand the definitions of congruence, residue classes and least residues						K2
3	Analyze the concept of Prime Power Moduli and Quadratic Residues						K4
4	Determine multiplicative inverses, modulo n and use to solve linear congruence.						K3
5	Acquire knowledge on Linear Diophantine equation						K4
<b>K1</b> - Remember; <b>K2</b> - Understand; <b>K3</b> - Apply; <b>K4</b> - Analyze; <b>K5</b> - Evaluate; <b>K6</b> – Create							
<b>Unit:1</b>	<b>Divisibility</b>					<b>11 hours</b>	
Divisibility and Euclidean algorithm.							
<b>Unit:2</b>	<b>Congruences</b>					<b>12 hours</b>	
Congruences, Euler's theorem, Wilson's Theorem. Solutions of congruences, Congruences of Degree 1. Chinese Remainder Theorem, The functions $\phi(n)$ , Congruences of higher degree.							
<b>Unit:3</b>	<b>Congruences (contd), Quadratic Reciprocity</b>					<b>11 hours</b>	
Prime power moduli, Prime modulus. Quadratic residues - Quadratic reciprocity.							
<b>Unit:4</b>	<b>Jacobi Symbol and Some Functions of Number Theory</b>					<b>12 hours</b>	
The Jacobi symbol – Greatest integer function - Arithmetic functions – The Moebius Inversion formula.							
<b>Unit:5</b>	<b>Arithmetic Functions and Diophantine Equations</b>					<b>12 hours</b>	
Multiplication of arithmetic functions, Linear Diophantine equations – The equation $x^2 + y^2 = z^2$ - The equation $x^4 + y^4 = z^2$ .							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Sum of Four Squares – <a href="https://www.youtube.com/watch?reload=9&amp;v=ZBJLWHpNpI8">https://www.youtube.com/watch?reload=9&amp;v=ZBJLWHpNpI8</a>							
<b>Total Lecture hours</b>						<b>60 hours</b>	

<b>Text Book(s)</b>	
1	Ivan Niven and Herbert Zuckerman, An Introduction to the Theory of Numbers, John Wiley and Sons Inc., 1972. Unit-I: Chapter I: Sections: 1.1 – 1.2 Unit-II: Chapter II: Section: 2.1 – 2.5 Unit-III: Chapter II: Section: 2.6 – 2.7, Chapter III: Section: 3.1 – 3.2 Unit-IV: Chapter III: Section: 3.3, Chapter IV: Section: 4.1 – 4.3 Unit-V: Chapter IV: Section: 4.4, Chapter V: Section: 5.1 – 5.4
<b>Reference Books</b>	
1	T. M. Apostol, Introduction to Analytic Number Theory, Springer Verlag, 1976.
2	Kenneth H. Rosen, Elementary Number Theory and its Applications, Addison Wesley Publishing Company, 1968.
3	George E. Andrews, Number Theory, Hindustan Publishing, New Delhi, 1989.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://freevideolectures.com/course/3027/cryptography-and-network-security">https://freevideolectures.com/course/3027/cryptography-and-network-security</a>
2	<a href="https://www.youtube.com/watch?v=SCvtxjpVQms&amp;t=3321s">https://www.youtube.com/watch?v=SCvtxjpVQms&amp;t=3321s</a> (NPTEL)
3	<a href="https://www.youtube.com/watch?v=Oyw5OmOd9B8&amp;list=PLLtQL9wSL16iRzTi2aKPiH01f1UjTTkJD">https://www.youtube.com/watch?v=Oyw5OmOd9B8&amp;list=PLLtQL9wSL16iRzTi2aKPiH01f1UjTTkJD</a> (Mathpod)

<b>Mapping with Programme Outcomes</b>											
COs \ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	S	M	M	L	M	M	M	M	M	S	
CO2	M	S	L	M	M	S	M	M	S	S	
CO3	L	M	S	M	S	S	M	M	S	S	
CO4	L	M	M	L	L	M	M	S	S	S	
CO5	S	M	M	L	M	S	M	S	S	S	

\*S-Strong; M-Medium; L-Low

Course code	<b>ELECTIVE 5: FUZZY LOGIC AND FUZZY SETS</b>			L	T	P	C
<b>Core/Elective/ Supportive</b>	<b>Elective</b>			<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Pre-requisite</b>	Self-explanatory			<b>Syllabus version</b>		<b>2022- Onwards</b>	
<b>Course Objectives:</b>							
The main objectives of this course are to:							
<ol style="list-style-type: none"> <li>1. identify fuzzy sets and perform set operations on fuzzy sets.</li> <li>2. apply fuzzy logic in various real-life situations such as decision making and inventory control.</li> </ol>							
<b>Expected Course Outcomes:</b>							
On the successful completion of the course, student will be able to:							
1	Gain knowledge about the basic types of fuzzy sets and the difference between crisp sets and fuzzy sets and the concept of operations on fuzzy sets					K1, K2	
2	Analyze and apply the knowledge of fuzzy relations.					K3,K4	
3	Develop the basic concepts of fuzzy measures.					K6	
4	Explore the concept of uncertainty. .					K6	
5	Understand the types of uncertainty measures and principles					K3	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>							
<b>Unit:1</b>	<b>Crisp Sets and Fuzzy Sets</b>					<b>12 hours</b>	
Introduction-Crisp sets: An over view-The Notion of Fuzzy Sets-basic concepts of Fuzzy Sets – Classical Logic: complement-Fuzzy Union-Fuzzy intersection – Combination of operations – General aggregation of operations.							
<b>Unit:2</b>	<b>Fuzzy Relations</b>					<b>12 hours</b>	
Crisp and Fuzzy relations – Binary relations – Binary relations on a single set – Equivalence and similarity relations – Compatibility on Tolerance Relations-Orderings – Morphism – Fuzzy relations Equations.							
<b>Unit:3</b>	<b>Fuzzy Measures</b>					<b>11 hours</b>	
General discussion – Belief and plausibility Measures –Probability measures – Possibility and Necessity measures.							
<b>Unit:4</b>	<b>Fuzzy Measures, Uncertainty</b>					<b>11 hours</b>	
Relationship among classes of fuzzy measures - Types of Uncertainty – Measures of Fuzziness- Classical Measures of Uncertainty.							
<b>Unit:5</b>	<b>Uncertainty and Information</b>					<b>12 hours</b>	
Measures of Dissonance-Measures of Confusion – Measures of Non-Specificity – Uncertainty and Information – Applications-General discussion-Natural, Life &social Sciences							
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>	
Expert lectures, online seminars - webinars							

	<b>Total Lecture hours</b>	<b>60 hours</b>
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<b>Text Book(s)</b>	
1	George J. Klir and Tina A. Folger, Fuzzy Sets, Uncertainty and Information, Fourth printing, Prentice Hall of India Private Limited, 1995. Unit-I: 1.1 – 1.5, 2.2 - 2.6 Unit-II: 3.1 – 3.8 Unit-III: 4.1 – 4.4 Unit-IV: 4.5, 5.1 – 5.3 Unit-V: 5.4 – 5.7 & 6.1-6.2.
<b>Reference Books</b>	
1	George J. Klir and Bo Yuan, Fuzzy Sets and Fuzzy Logic - Theory and Applications, Prentice-Hall of India Private Limited
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://giocher.wordpress.com/chapter-2-par-2-2-fuzzy-relations-and-the-extension-principle/">https://giocher.wordpress.com/chapter-2-par-2-2-fuzzy-relations-and-the-extension-principle/</a>
2	<a href="https://nptel.ac.in/courses/108/104/108104157/">https://nptel.ac.in/courses/108/104/108104157/</a>

<b>Mapping with Programme Outcomes</b>										
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	M	S	L	M	L	S	M	S	S
CO2	M	S	M	S	S	S	S	S	S	S
CO3	S	S	L	M	S	S	L	M	L	S
CO4	S	S	L	M	S	S	L	M	L	S
CO5	M	S	M	S	S	S	S	S	M	S

\*S-Strong; M-Medium; L-Low

Course code	<b>ELECTIVE 6: CONTROL THEORY</b>			L	T	P	C	
<b>Core/Elective/Supportive</b>	<b>Elective</b>			<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	
<b>Pre-requisite</b>	Basic knowledge in differential equations at Undergraduate level.			<b>Syllabus version</b>	<b>2022-Onwards</b>			
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Understand the concepts of Observability, Controllability and Stability.</li> <li>2. Gain knowledge about linear time varying systems.</li> <li>3. Develop the ability of solving linear feedback control.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Explain observability and estimate the observability of constant coefficient system, linear, nonlinear system, and discuss reconstruction kernel.						K2	
2	Apply controllability criteria to constant coefficient system, linear, nonlinear system, and explain steering function.						K3	
3	Analyze the stability of linear system, linear time varying system, perturbed linear system and nonlinear system.						K4	
4	Evaluate stabilizability via linear feedback control, Bass method.						K5	
5	Analyze controllable subspace, and stabilization with restricted feedback.						K4	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>Observability</b>					<b>12 hours</b>		
Linear Systems – Observability Grammian – Constant coefficient systems – Reconstruction kernel – Nonlinear Systems.								
<b>Unit:2</b>	<b>Controllability</b>					<b>12 hours</b>		
Linear systems – Controllability Grammian – Adjoint systems – Constant coefficient systems – steering function – Nonlinear systems.								
<b>Unit:3</b>	<b>Stability</b>					<b>10 hours</b>		
Stability – Uniform Stability – Asymptotic Stability of Linear Systems.								
<b>Unit:4</b>	<b>Perturbed Linear Systems</b>					<b>12 hours</b>		
Linear time varying systems – Perturbed linear systems – Nonlinear systems.								
<b>Unit:5</b>	<b>Stabilizability</b>					<b>12 hours</b>		
Stabilization via linear feedback control – Bass method – Controllable subspace – Stabilization with restricted feedback.								
<b>Unit:6</b>	<b>Contemporary Issues</b>					<b>2 hours</b>		
Expert lectures, online seminars - webinars								
<b>Total Lecture hours</b>						<b>60 hours</b>		

<b>Text Book(s)</b>	
1	K. Balachandran and J. P. Dauer, Elements of Control Theory, Narosa, New Delhi, 1999.
	Unit- I-1.2,1.3, Unit-II-2.1,-2.2 Unit-III-3.1-3.4 Unit- IV-4.1-4.3 Unit-V- 5.1-5.3
<b>Reference Books</b>	
1	R. Conti, Linear Differential Equations and Control, Academic Press, London, 1976.
2	R. F. Curtain and A. J. Pritchard, Functional Analysis and Modern Applied Mathematics, Academic Press, New York, 1977.
3	J. Klamka, Controllability of Dynamical Systems, Kluwer Academic Publisher, Dordrecht, 1991.
4	D. L. Russell, Mathematics of Finite Dimensional Control Systems, Marcel Dekker, New York, 1979.
5	E. B. Lee and L. Markus, Foundations of optimal Control Theory, John Wiley, New York, 1967.
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>	
1	<a href="https://www.youtube.com/watch?v=39Ggoj2fQ2c">https://www.youtube.com/watch?v=39Ggoj2fQ2c</a>
2	<a href="https://nptel.ac.in/courses/115/108/115108104/">https://nptel.ac.in/courses/115/108/115108104/</a>
3	<a href="https://nptel.ac.in/courses/107/106/107106081/">https://nptel.ac.in/courses/107/106/107106081/</a>

<b>Mapping with Programme Outcomes</b>											
COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1	S	M	M	L	S	S	M	L	M	M	
CO2	M	M	S	M	M	M	M	M	M	S	
CO3	S	S	M	M	M	M	S	S	S	S	
CO4	M	M	S	S	S	S	L	M	S	M	
CO5	S	S	M	S	M	M	L	M	M	M	

\*S-Strong; M-Medium; L-Low



Course code	ELECTIVE 8: MATLAB			L	T	P	C	
Core/Elective/ Supportive	Elective			4	0	0	4	
Pre-requisite	Self-explanatory			Syllabus version	2022- Onwards			
<b>Course Objectives:</b>								
The main objectives of this course are to:								
<ol style="list-style-type: none"> <li>1. Understand the Matlab Desktop, Command window and the Graph Window.</li> <li>2. Be able to carry out numerical computations and analyses.</li> <li>3. Understand the mathematical concepts upon which numerical methods rely.</li> </ol>								
<b>Expected Course Outcomes:</b>								
On the successful completion of the course, student will be able to:								
1	Understand the basic concepts of starting windows and solve the MATLAB applications.						K2	
2	Create arrays and solve them in MATLAB.						K6	
3	Solve problems using M files and apply the same for advanced data objects in MATLAB.						K4	
4	Understand the importance of MATLAB in differential equations and assess it for plotting graphs using layouts.						K6	
5	Diagnose various applications of MATLAB in curve fitting, statistics and integration.						K5	
<b>K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create</b>								
<b>Unit:1</b>	<b>Starting with Matlab and Creating Arrays</b>					<b>12 hours</b>		
<p>Starting with Matlab: Starting MATLAB, MATLAB Windows - Working in the Command Window - Arithmetic Operations with Scalars - Display Formats - Elementary Math Built-In Functions - Defining Scalar Variables - Useful Commands for Managing Variables - Script Files - Examples of MATLAB Applications.</p> <p>Creating Arrays: Creating a One-Dimensional Array (Vector) - Creating a Two-Dimensional Array (Matrix) - Notes about Variables in MATLAB - The Transpose Operator - Array Addressing - Using a Colon: In Addressing Arrays - Adding Elements to Existing Variables - Deleting Elements - Built-In Functions for Handling Arrays - Strings and Strings as Variables.</p>								
<b>Unit:2</b>	<b>Mathematical Operations with Arrays, Using Script Files and Managing Data</b>					<b>12 hours</b>		
<p>Mathematical Operations with Arrays: Addition and Subtraction - Array Multiplication - Array Division - Element-By-Element Operations - Using Arrays in MATLAB Built-in Math Functions - Built-in Functions for Analyzing Arrays - Generation of Random Numbers - Examples of MATLAB Applications.</p> <p>Using Script Files and Managing Data: The MATLAB Workspace and the Workspace Window - Input to A Script File - Output Commands - The Save And Load Commands - Importing And Exporting Data - Examples of MATLAB Applications.</p>								
<b>Unit:3</b>	<b>Two-Dimensional Plots and Three-Dimensional Plots</b>					<b>12 hours</b>		
Two-Dimensional Plots: The plot Command - The fplot Command - Plotting Multiple Graphs in the Same Plot - Formatting a Plot - Plots with Logarithmic Axes - Plots with Error Bars - Plots With Special Graphics - Histograms - Polar Plots - Putting Multiple Plots on the Same Page -								

Multiple Figure Windows - Examples of MATLAB Applications. Three-Dimensional Plots: Line Plots - Mesh and Surface Plots - Plots with Special Graphics - The View Command - Examples of Matlab Applications.		
<b>Unit:4</b>	<b>Programming In Matlab, User-Defined Functions and Function Files</b>	<b>12 hours</b>
Programming In Matlab: Relational and Logical Operators - Conditional Statements - The Switch-Case Statement - Loops - Nested Loops and Nested Conditional Statements - The Break and Continue Commands - Examples of MATLAB Applications. User-Defined Functions and Function Files: Creating A Function File - Structure of a Function File - Local And Global Variables - Saving A Function File - Using A User-Defined Function - Examples of Simple User-Defined Functions - Comparison Between Script Files and Function Files - Anonymous And Inline Functions - Function Functions - Subfunctions - Nested Functions - Examples Of MATLAB Applications.		
<b>Unit:5</b>	<b>Polynomials, Curve Fitting, Interpolation and Applications in Numerical Analysis</b>	<b>10 hours</b>
Polynomials, Curve Fitting, and Interpolation: Polynomials - Curve Fitting - Interpolation - The Basic Fitting Interface - Examples of MATLAB Applications. Applications in Numerical Analysis: Solving an Equation with One Variable - Finding a Minimum or a Maximum of a Function - Numerical Integration - Ordinary Differential Equations - Examples of MATLAB Applications.		
<b>Unit:6</b>	<b>Contemporary Issues</b>	<b>2 hours</b>
Expert lectures, online seminars - webinars		
<b>Total Lecture hours</b>		<b>60 hours</b>
<b>Text Book(s)</b>		
1	Amos Gilat, MATLAB An Introduction with Applications, John Wiley & Sons, Inc., 2011.	
	UNIT I:	Chapter 1 : Sections 1.1 –1.9 Chapter 2 : Sections 2.1 –2.10
	UNIT II:	Chapter 3 : Sections 3.1-3.8 Chapter 4 : Sections 4.1-4.6
	UNIT III:	Chapter 5 : Sections 5.1 – 5.12 Chapter 10 : Sections 10.1 – 10.5
	UNIT IV:	Chapter 6 : Sections 6.1 – 6.7 Chapter 7 : Sections 7.1 – 7.12
	UNIT V:	Chapter 8 : Sections 8.1 – 8.5 Chapter 9 : Sections 9.1 – 9.5
<b>Reference Books</b>		
1	Rudra Pratap, Getting Started with MATLAB– A Quick Introduction for Scientists and Engineers, Oxford University Press.	
2	William John Palm, Introduction to MATLAB 7 for Engineers, McGraw-Hill Professional, 2005.	
3	Dolores M. Etter and David C. Kuncicky, Introduction to MATLAB 7, Printice Hall, 2004.	
<b>Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]</b>		
1	<a href="https://nptel.ac.in/courses/103/106/103106118/">https://nptel.ac.in/courses/103/106/103106118/</a>	
2	<a href="http://web4.cs.ucl.ac.uk/teaching/3085/archive/2010/matlab_tutorial/matlab_booklet.pdf">http://web4.cs.ucl.ac.uk/teaching/3085/archive/2010/matlab_tutorial/matlab_booklet.pdf</a>	
3	<a href="https://www.youtube.com/watch?v=zJm8VHG4TbQ">https://www.youtube.com/watch?v=zJm8VHG4TbQ</a>	

## **ELECTIVE 8: MATLAB**

### **List of Practical Problems**

1. Solve the following system of five linear equations:

$$3u + 1.5v + w + 0.5x + 4y = -11.75$$

$$-2u + v + 4w - 3.5x + 2y = 19$$

$$6u - 3v + 2w + 2.5x + y = -23$$

$$u + 4v - 3w + 0.5x - 2y = -1.5$$

$$3u + 2v - w + 1.5x - 3y = -3.5$$

Verify the solution by substituting in all the 5 equations.

2. Create a script file to write a program for saving the output in two files using „fprintf“ command. The program should generate two unit conversion tables. One table converts velocity units from miles per hour to kilometres per hour, and the other table converts force units from pounds to newtons. Save each conversion table to a different text file.
- 3(a) Plot the function  $f(x) = \cos x \sin(2x)$  and its derivative, both on the same plot, for  $\pi \leq x \leq \pi$ . Plot the function with a solid line, and the derivative with a dashed line. Add a legend and label the axes.
- (b) Plot the function,  $r = 3 \cos^2(0.5\theta) + \theta$  for  $0 \leq \theta \leq 2\pi$  using ‘polar’ command.
4. Write a program in a script file that determines  $e^x$  by using the Taylor series representation. The program calculates  $e^x$  by adding terms of the series and stopping when the absolute value of the term that was added last is smaller than 0.0001. Use a „while-end“ loop, but limit the number of passes to 30. If in the 30<sup>th</sup> pass the value of the term that is added is not smaller than 0.0001, the program stops and displays a message that more than 30 terms are needed. Use the program to calculate  $e^2$ ,  $e^{-4}$ , and  $e^{21}$ .
5. Write a programme in a script file that determines the real roots of a quadratic equation  $ax^2 + bx + c = 0$ . Name the file „quadroots“. When the file runs, it asks the user to

enter the values of the constants  $a$ ,  $b$ , and  $c$ . To calculate the roots of the equation the program calculates the discriminant  $D$ , given by:

$$D = b^2 - 4ac.$$

If  $D > 0$ , the program displays message “The equation has two roots,” and the roots are displayed in the next line.

If  $D = 0$ , the program displays message “The equation has one root,” and the root is displayed in the next line.

If  $D < 0$ , the program displays message “The equation has no real roots.”

Run the script file in the Command Window three times to obtain solutions to the following three equations:

$$(a) 2x^2 + 8x + 8 = 0, (b) -5x^2 + 3x - 4 = 0, (c) -2x^2 + 7x + 4 = 0.$$

6. The following data points, which are points of the function  $f(x) = 1.5^x \cos(2x)$ , are given. Use ‘linear’, ‘spline’, and ‘pchip’ interpolation methods to calculate the value of  $y$  between the points. Make a figure for each of the interpolation methods. In the figure show the points, a plot of the function, and a curve that corresponds to the interpolation method.

$X$	0	1	2	3	4	5
$Y$	1.0	-0.6242	-1.4707	3.2406	-0.7366	-6.3717

Also, use the ‘Basic Fitting Interface Tool’ to show the equation, plot residuals, norm of residuals and the fit.

7. Solve:  $\frac{dy}{dx} = \sqrt{x} + \frac{x^2\sqrt{y}}{4}$  for  $1 \leq x \leq 5$  with  $y(1) = 1$ . Plot the solution.