



MOTHER TERESA WOMEN'S UNIVERSITY
KODAIKANAL – 624 102

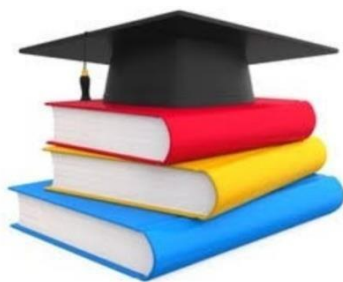


DEPARTMENT OF COMPUTER SCIENCE

B.Sc. COMPUTER SCIENCE

Curriculum Framework, Syllabus, and Regulations

(Choice Based Credit System –CBCS)



(For the candidates to be admitted from the Academic Year 2026-2027 onwards)

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LO1: Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.

LO2: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

LO3: Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically

evaluate practices, policies and theories by following scientific approach to knowledge development.

- LO4: Problem solving:** Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
- LO5: Analytical reasoning:** Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesise data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.
- LO6: Research-related skills:** A sense of inquiry and capability for asking relevant/ appropriate questions, problematizing, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
- LO7: Cooperation/Team work:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
- 8 Learning Outcomes-based Curriculum Framework for Undergraduate Education
- LO8: Scientific reasoning:** Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective. =
- LO9:** Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
- LO10: Information/digital literacy:** Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
- LO11: Self-directed learning:** Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.
- LO12: Multicultural competence:** Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
- LO13: Moral and ethical awareness/reasoning:** Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.
- LO14: Leadership readiness/qualities:** Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
- LO15: Lifelong learning:** Ability to acquire knowledge and skills, including 'learning how to learn', that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic,

social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

Mother Teresa Women's University, Kodaikanal
Department of Computer Science

B.Sc. Computer Science

1. About the Department

The Department of Computer Science is dedicated to imparting quality education in the rapidly evolving field of computing and information technology. The department provides a strong foundation in both theoretical concepts and practical applications of computer science. It offers a well-designed curriculum that covers programming, software development, database management, networking, web technologies, and emerging trends in IT. The department aims to develop analytical thinking, problem-solving ability, creativity, and technical competence among students. Well-equipped computer laboratories and experienced faculty members create an effective learning environment for academic excellence and research-oriented learning. The department encourages students to participate in seminars, workshops, projects, and skill development activities to enhance their professional competence. Emphasis is also given to ethical values, teamwork, communication skills, and lifelong learning. Through continuous academic and industry interaction, the department strives to prepare students for higher education, entrepreneurship, and successful careers in the IT industry. The department is committed to producing competent graduates who can contribute effectively to technological advancement and societal development.

2. Programme Educational Objectives (PEOs)

PEO1	To provide students with a strong foundation in Computer Science principles, programming, and modern computing technologies for solving real-world challenges.
PEO2	To equip students with technical expertise, analytical thinking, and problem-solving skills required for successful careers, higher studies, and research in the field of Information Technology.
PEO3	To nurture professional ethics, communication skills, teamwork, and lifelong learning abilities that enable students to adapt to emerging technological advancements and societal needs.

3. Programme Outcomes (PO)

On completion of B.Sc. Computer Science Programme, students will be able to

PO1	Apply the fundamental concepts of Computer Science, mathematics, and computational techniques to analyze and solve complex computing problems.
PO2	Design, develop, and implement efficient software applications using appropriate programming languages, tools, and modern technologies.
PO3	Demonstrate logical reasoning, analytical thinking, and problem-solving skills in the development of computing solutions.
PO4	Communicate effectively, collaborate productively in multidisciplinary teams, and uphold professional ethics and social responsibility.
PO5	Engage in lifelong learning and adapt to emerging trends, technologies, and innovations in the field of Computer Science.

4. Programme Specific Outcomes (PSOs)

On completion of B.Sc. Computer Science Programme, students will be able to

PSO1	Develop reliable and efficient software solutions using programming concepts, database management systems, and web technologies.
PSO2	Apply the knowledge of data structures, operating systems, networking, and computing fundamentals to address technical and real-world problems.
PSO3	Utilize modern computing tools, emerging technologies, and research-oriented approaches to support innovation and industry requirements.

5. Alignment of Programme Outcomes with the Vision and Mission of Mother Teresa Women's University

University Vision

“Holistic Empowerment of Women through Education”

Programme Outcome	Contribution to the University Vision
PO1: Apply the fundamental concepts of Computer Science, mathematics, and computational techniques to analyze and solve complex computing problems.	Empowers women with strong theoretical foundations in Computer Science, mathematics, and computational techniques, enabling them to analyze complex problems and develop effective computing solutions with confidence and competence.
PO2: Design, develop, and implement efficient software applications using appropriate programming languages, tools, and modern technologies.	Enhances technical proficiency, innovation, and software development skills, empowering women to create efficient, reliable, and industry-relevant computing solutions that address real-world challenges.
PO3: Demonstrate logical reasoning, analytical thinking, and problem-solving skills in the development of computing solutions.	Develops critical thinking, logical reasoning, and analytical abilities, enabling women to design innovative solutions, make informed decisions, and contribute effectively to technological advancement.

PO4: Communicate effectively, collaborate productively in multidisciplinary teams, and uphold professional ethics and social responsibility.	Promotes holistic development by nurturing communication, teamwork, leadership, ethical values, and social responsibility, preparing women to become responsible professionals and active contributors to society.
PO5: Engage in lifelong learning and adapt to emerging trends, technologies, and innovations in the field of Computer Science.	Encourages continuous learning, adaptability, innovation, and professional growth, empowering women to embrace emerging technologies, pursue higher education, and excel in a rapidly evolving global IT environment.

Mapping of Programme Outcomes with University Vision

Vision Components	PO1	PO2	PO3	PO4	PO5
Knowledge Empowerment	√	√	√		√
Technical Empowerment	√	√	√		√
Professional & Social Empowerment			√	√	
Holistic Development				√	√
Lifelong Learning & Leadership				√	√

University Mission

M1: To promote a society of equal status between women and men.

M2: To empower women through education at all levels.

M3: To impart education of global standards.

Mapping Scale

Value	Level of Correlation
3	High
2	Moderate
1	Low
–	No Correlation

Mission–PO Mapping Matrix

Mission Statements / Pos	PO1	PO2	PO3	PO4	PO5
M1: Promote a society of equal status between women and men	1	2	2	3	3
M2: Empower women through education at all levels	3	3	3	3	3
M3: Impart education of global standards	3	3	3	3	3

6. Eligibility

- Should have studied Mathematics in 12th Standard
- 2/3 of seats reserved for students who have studied Computer Science as a subject in plus two and 1/3 of seats are for students who have not studied computer science in plus two.
- Ranking based on marks in Part III out of 400

7. General Guidelines for UG Programme

- i. Duration: 3 Years
- ii. Medium of Instruction: English

8. Evaluation (40+60): Evaluation of the candidates shall be through Internal Assessment and External Examination for Theory and Practical.

8.1 Evaluation Pattern

EVALUATION PATTERN		Maximum Marks (Theory & Practical)	Minimum Marks (Theory & Practical)
Internal Evaluation	Continuous Internal Assessment	40 Marks	16 Marks
External Evaluation	End Semester Examination	60 Marks	24 Marks
Total		100 Marks	40 Marks

8.2 Internal Assessment - CIA (40 Marks)

The Continuous Internal Assessment (CIA) for each course includes written test and assignments for a maximum of 40 marks.

Assignment (any type): 10 Marks

Seminar / Presentation: 10 Marks

Test (Best 2 out of 3): 15 Marks

Quiz/MCQ: 5 Marks

8.3 End Semester Examination (Theory): Max. Marks: 60 Time: 3hrs.

Part-A (5x2=10 Marks) - Answer ALL questions - Each Question carries 2marks

Part-B (5x4=20 Marks) - Answer ALL questions - Each question carries 4 Marks - Either or Type

Part-C (3x 10 = 30 Marks) - Answer ALL questions - Each question carries 10 Marks - Either or Type

8.4 Written Examination Question Paper Pattern

Intended Learning Skills	Maximum 60 Marks Passing Minimum: 50% Duration: Three Hours
Memory Recall/Example/ Counter Example / Knowledge about the Concepts/Understanding K1& K2	Part-A (5x2=10 Marks)
	Answer ALL questions Each Question carries 2marks One questions from each Unit Question 1to 5
Descriptions/Application / Analysis/Synthesis / Evaluation K3, K4, K5	Part-B (5x4=20 Marks) Answer
	ALL questions Each question carries 4 Marks Either - or Type Both parts of each question from the same Unit and K Level Question 6(a) or 6(b) To Question 10(a) or 10(b)
Analysis/Synthesis / Evaluation K4, K5	Part-C (3x 10 = 30 Marks)
	Answer ALL questions Each question carries 10 Marks From any unit based on weightage Either - or Type Both parts of each question from the same K Level Question 11(a) or 11(b) To Question 13(a) or 13(b)

Sample UG Question Paper Pattern (End Semester Written Examination)

Q. NO	QUESTIONS	K LEVEL	UNIT NO.	COUSE OUTCOME NO.	PROBLEM OR THEORY QUESTION (P/T)
SECTION A		ANSWER THE FOLLOWING			(5*2=10)
1.		K1/K2	1	CO1	(P/T)
2.		K1/K2	2	CO1	(P/T)
3.		K1/K2	3	CO1	(P/T)
4.		K1/K2	4	CO1	(P/T)

5.		K1/K2	5	CO1	(P/T)
SECTION B		ANSWER THE FOLLOWING			(5*4=20)
6A		K3	1	CO2	(P/T)
	(OR)				
6B		K3	1	CO2	(P/T)
7A		K3	2	CO2	(P/T)
	(OR)				
7B		K3	2	CO2	(P/T)
8A		K4	3	CO3	(P/T)
	(OR)				
8B		K4	3	CO3	(P/T)
9A		K5	4	CO4	(P/T)
	(OR)				
9B		K5	4	CO4	(P/T)
10A		K5	5	CO4	(P/T)
	(OR)				
10B		K5	5	CO4	(P/T)
SECTION C		ANSWER THE FOLLOWING			(3*10=30)
11A		K4	1	CO3	(P/T)
	(OR)				
11B		K4	2	CO3	(P/T)
12A		K4	3	CO3	(P/T)
	(OR)				
12B		K4	4	CO3	(P/T)
13A		K5	5	CO4	(P/T)
	(OR)				
13B		K5	(optional)*	CO4	(P/T)
From any unit based on weightage					

WEIGHTAGE

Lower Level	- K1, K2 Level	- 10 Marks	- 17%
Intermediate Level	- K3, K4 Level	- 32 Marks	- 53%
Higher Level	- K5, K6 Level	- 18 Marks	- 30%
Total		- 60 marks	- 100%

Internal Written Examination Pattern

Intended Learning Skills	Maximum 60 Marks Passing Minimum: 50% Duration: Three Hours
Memory Recall/Example/ Counter Example / Knowledge about the Concepts/Understanding K1& K2	Part-A (4x2=08 Marks)
	Answer ALL questions Each Question carries 2marks Internal Test Portion Question 1 to 4
Application / Analysis/Synthesis / Evaluation K3, K4, K5	Part-B (3x4=12 Marks)
	Answer ALL questions Each question carries 4 Marks Either - or Type Both parts of each question from the same K Level / Internal Test Portion Question 5(a) or 5(b) To Question 7 (a) or 7 (b)
Analysis/Synthesis / Evaluation/Create K5	Part-C (1x 10 = 10 Marks)
	Answer ALL questions Each question carries 10 Marks From any unit based on weightage Either - or Type Both parts of each question from the same K Level / Internal Test Portion Question 8 (a) or 8 (b)

Sample Question Paper Pattern (Internal Written Examination)

Q. NO	QUESTIONS	K LEVEL	UNIT NO.	COUSE OUTCOME NO.	PROBLEM OR THEORY QUESTION (P/T)
SECTION A ANSWER THE FOLLOWING (4*2=8)					
1.		K1/K2	Internal Test Portion	CO1	(P/T)
2.		K1/K2		CO1	(P/T)
3.		K1/K2		CO1	(P/T)
4.		K1/K2		CO1	(P/T)
SECTION B ANSWER THE FOLLOWING (3*4=12)					
5A		K3	Internal Test Portion	CO2	(P/T)
	(OR)				
5B		K3		CO2	(P/T)
6A		K4		CO3	(P/T)
	(OR)				
6B		K4		CO3	(P/T)
7A		K5		CO4	(P/T)
	(OR)				
7B		K5		CO4	(P/T)
SECTION C ANSWER THE FOLLOWING (1*10=10)					
8A		K5	Internal Test Portion	CO4	(P/T)
	(OR)				
8B		K5		CO4	(P/T)

WEIGHTAGE

Lower Level	- K1, K2 Level	- 08 Marks	- 27%
Intermediate Level	- K3, K4 Level	- 08 Marks	- 27%
Higher Level	- K5, K6 Level	- 14 Marks	- 46%
Total		- 30 marks	- 100%

8.5 Methods of Assessment

METHODS OF ASSESSMENT	
Remembering (K1)	• The lowest level of questions requires students to recall information from the course content • Knowledge questions usually require students to identify information in the textbook.
Understanding (K2)	• Understanding of facts and ideas by comprehending organizing, comparing, translating, interpolating and interpreting in their own words. • The questions go beyond simple recall and require students to combine data together
Application (K3)	• Students have to solve problems by using / applying a concept learned in the classroom. • Students must use their knowledge to determine a exact response.
Analyze (K4)	• Analyzing the question is one that asks the students to break down something into its component parts. • Analyzing requires students to identify reasons causes or motives and reach conclusions or generalizations.
Evaluate (K5)	• Evaluation requires an individual to make judgment on something. • Questions to be asked to judge the value of an idea, a character, a work of art, or a solution to a problem. • Students are engaged in decision-making and problem –solving. • Evaluation questions do not have single right answers.
Create (K6)	• The questions of this category challenge students to get engaged in creative and original thinking. • Developing original ideas and problem solving skills

9. Project

9.1 Project Report

A student should select a topic for the Project Work at the end of the fifth semester itself and submit the Project Report at the end of the sixth semester. The Project Report shall not be less than 30 typed pages in Times New Roman font with 1.5 line space.

9.2 Project Evaluation

There is a Viva Voce Examination for Project Work. The Guide and an External Examiner shall evaluate and conduct the Viva Voce Examination. The Project Work carries 100 marks (Internal: 40 Marks; External (Viva): 60 Marks).

10. Conversion of Marks to Grade Points and Letter Grade (Performance in a Course/Paper)

Range of Marks	Grade Points	Letter Grade	Description
90 – 100	9.0 – 10.0	O	Outstanding
80-89	8.0 – 8.9	D+	Excellent
75-79	7.5 – 7.9	D	Distinction
70-74	7.0 – 7.4	A+	Very Good
60-69	6.0 – 6.9	A	Good
50-59	5.0 – 5.9	B	Average
40-49	4.0 - 4.9	C	Satisfactory
00-39	0.0	U	Re-appear
ABSENT	0.0	AAA	ABSENT

11. Attendance

Students must have earned 75% of attendance in each course for appearing for the examination. Students with 71% to 74% of attendance must apply for condonation in the Prescribed Form with prescribed fee. Students with 65% to 70% of attendance must apply for condonation in the Prescribed Form with the prescribed fee along with the Medical Certificate. Students with attendance less than 65% are not eligible to appear for the examination and they shall re-do the course with the prior permission of the Head of the Department, Principal and the Registrar of the University.

12. Any Other Information

In addition to the above mentioned regulations, any other common regulations pertaining to the PG Programmes are also applicable for this Programme.

13. Academic Documentation

a.	Academic Schedule	q.	Laboratory Experiments related to the Courses
b.	Students Name List	r.	Internal Question Paper
c.	Time Table	s.	External Question Paper
d.	Syllabus	t.	Sample Home Assignment Answer Sheets
e.	Lesson Plan	u.	Three best, three middle level and three average Answer sheets
f.	Staff Workload	v.	Result Analysis
g.	Course Design (content, Course Outcomes (COs), Delivery method, mapping of COs with Programme Outcomes (POs), Assessment Pattern interms of Revised Bloom's Taxonomy).	w.	Question Bank Preparation (Semester / Competitive exams-NET, SET, GATE)

h.	Sample CO Assessment Tools	x.	List of mentees and their academic achievements
i.	Faculty Course Assessment Report(FCAR)		
j.	Course Evaluation Sheet		
k.	Teaching Materials (PPT, OHP etc)		
l.	Lecture Notes		
m.	Home Assignment Questions		
n.	Tutorial Sheets		
o.	Remedial Class Record, if any		
p.	Projects related to the Course		

14. CURRICULUM STRUCTURE FOR UG PROGRAMME SEMESTER-1

Part		List of Courses	Credit	Hrs	Intern	Externa	Marks
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	Course Code		s		al	l	
I	U26TAL101	Language-1–Tamil	3	6	40	60	100
II	U26ENL101	Language-2–English	3	6	40	60	100
III	U26CST101	Core-1:Theory - C++ and Data Structures	4	5	40	60	100
	U26CSP102	Core-2:Practical - Data Structures Lab	3	5	40	60	100
	U26CSA11	Allied-1 : Theory – Discrete Mathematics	3	4	40	60	100
IV	U26CSAE11	Ability Enhancement Course – 1 –Quantitative Aptitude	2	2	40	60	100
	U26CSS101	SEC 1- Computer Applications (Common Paper)	2	2	40	60	100
			20	30			700

SEMESTER-II

Part	Course Code	List of Courses	Credits	Hrs	Internal	External	Marks
I	U26TAL202	Language-1–Tamil	3	6	40	60	100
II	U26ENL202	Language-2–English	3	6	40	60	100
III	U26CST203	Core-3:Theory - Relational Database Management System	4	5	40	60	100
	U26CSP204	Core-4:Practical - Relational Database Management System Lab	3	5	40	60	100
	U26CSA22	Allied 2 - Statistical Methods	3	4	40	60	100
IV	U26VAE201	Value Education	2	2	40	60	100
IV	U26CSNM21/ U26CSS202	Naan Mudhalvan-1 / Skill Enhancement Course(SEC-2) Soft skills	2	2	40	60	100
		Total	20	30			700

SEMESTER-III

Part	Course Code	List of courses	Credits	Hrs	Internal	External	Marks
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I	U26TAL303	Language -1	3	6	40	60	100
II	U26ENL303	Language- 2	3	6	40	60	100
III	U26CST305	Core- 5:Theory - Java Programming	4	5	40	60	100
	U26CSP306	Core-6: Java Programming Lab	3	5	40	60	100
	U26CSA33	Allied 3 : Theory - Computer Graphics	3	4	40	60	100
IV	U26CSNM32/ U26CSS303	Naan Mudhalvan-2 / Skill Enhancement Course (SEC-3) – Photoshop Lab	2	2	40	60	100
	U26EVS301	EVS	2	2	40	60	100
	U26CSV301	Value Added Course – 1 (Additional Credit) - Web Designing Lab	1*		100		100
		Total	20 +1 *	30			

SEMESTER-IV

Part	Course Code	List of courses	Credits	Hrs	Internal	External	Marks
I	U26TAL404	Language-1	3	6	40	60	100
II	U26ENL404	Language-2	3	6	40	60	100
III	U26CST407	Core-7:Theory - - Python Programming	4	5	40	60	100
III	U26CSP408	Core -8 Practical - Python Programming Lab	3	5	40	60	
IV	U26CSA44	Allied 4 - Numerical Methods	3	4	40	60	100
	U26CSNM43/ U26CSS404	Naan Mudhalvan-3 / Skill Enhancement Course (SEC-4) – AI tools	2	2	40	60	100
	U26CSN401	Non Major Elective -1- Fundamentals of Information Technology	2	2	40	60	100
		Total	20	30			600

SEMESTER-V

Part	Course Code	List of courses	Credits	Hrs	Internal	External	Marks
III	U26CST509	Core- 9:Theory - Software Engineering	4	6	40	60	100

	U26CST510	Core- 10:Theory – Artificial Intelligence & Machine Learning	4	6	40	60	100
	U26CST511	Core-11:Operating System	3	5	40	60	100
	U26CSP512	Core 12: Practical –Data Analytics using Machine Learning Algorithms Lab	3	5	40	60	100
	U26CSE51A/ U26CSE51B/ U26CSE51C	Department Specific Elective - Web Application Development Lab/ Mobile Application Development Lab/IoT Applications Lab	3	4	40	60	100
	U26CSI501	Internship	1	-	100	-	100
IV	U26DMG501	Generic Course I–Disaster Management	2	2			100
	U26CSNM54 / U26CSS505	Naan Mudhalvan-4 / Skill Enhancement Course (SEC-5) Yoga for Human Excellence-Prompt Engineering	2	2			100
		Total	22	30			800

SEMESTER-VI

Part	Course Code	List of courses	Credits	Hrs	Internal	External	Marks
III	U26CST613	Core- 13:Theory - Computer Networks	4	6	40	60	100
	U26CST614	Core- 14:Theory - Digital Image Processing	4	6	40	60	100
	U26CSP615	Core- 15:Practical - Digital Image Processing Lab	3	6	40	60	100
	U26CSPR61	Core- 16:Project	3	10	40	60	100
IV	U26CSNM65 / U26CSS606	Naan Mudhalvan-5 / Skill Enhancement Course (SEC-6) - Employability Readiness	2	2	40	60	100
V	U26EAS601	Extension Activity ((NSS/NCC/YRC /RRC/ CLUB ACTIVITIES / SCIENCE FORUM/ PHYSICAL EDUCATION)	2	-	100		100
	U26CSO601	Online /SWAYAM MOOCs /NPTEL/ Professional Certificate Course(Additional Credit)*	2*	-		100	100
		Total	18 +2*	30			
		Grand Total	120				4400

* Additional credit papers

- VAC in the third semester is mandatory.

- Online / SWAYAM/ MOOC / NPTEL course is mandatory. It can be done anytime during the course but will be reflected in the 6th semester only.

* Extension Activity:

Extension activity includes participation in NSS/NCC/RRC/ Science Forum/Physical Education

Total marks: 100 (Purely internal)

Credits: 2

Course Code	U26CST101	Semester I	Year I	Credits	L	T	P	Hrs
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Core	Course Name C++ and Data Structures	4		5		5
Nature of the Course	Employability					
Learning objectives	□ Remember the program of C++ with its syntax and semantics □ Understand the programming principles in C++ (data types, operators, branching and looping, arrays, functions, structures, pointers and files) □ Apply the programming principles learnt in real-time problems □ To introduce the various data structures and their implementations □ Study various Binary tree representations.					
Units	Course Contents					
Unit I	Principles of object Oriented Programming: Software evolution – Basic concepts of object Oriented Programming–Benefits of OOPS–Object Oriented Language–Application of OOPS–Beginning with C++.					
Unit II	Token, Expressions and Control Structure Functions: Token – Keyword – Identifier and constant– Basic Data Types– User defined data type- Derived data type– Operators in C++ - Scope Resolution Operator– Member de-referencing Operator– Manipulators –Type cast Operators– Expression and their types–Implicit conversion– Control structures.					
Unit III	Functions in C++: Main function, Function prototyping, call by reference, return by reference, inline function, function overloading.					
Unit IV	Introduction of algorithms, analyzing algorithms, Arrays: Representation of Arrays, Implementation of Stacks and queues, Application of Stack: Evaluation of Expression - Infix to postfix Conversion.					
Unit V	Trees: Basic Terminology - Binary Trees - Binary Tree representations - Binary trees - Traversal - Graphs: Terminology and Representations - Traversals, connected components and spanning Trees, Single Source Shortest path problem.					
Question paper Coverage- 100% theory						
Text book	1. Object oriented Programming with C++ by E.Balagurusamy Tata Mc Graw Hill Publishing Company Limited 1998.					
	2. Ellis Horowitz, Sartaj Shani, Data Structures, Galgotia publication.					
Reference Books	1. C++, The Complete Reference, Herbert Schlitz,1997.					
	2. Data structure and Algorithms, Alfred V.Aho, John E. Hopcroft, Jeffrey D. Ullman, Pearson Education Pvt. Ltd.					
	3. Data structures Using C Aaron M. Tenenbaum, YedidyahLangsam, Moshe J. Augenstein, Kindersley (India) Pvt. Ltd.					
E-	1. http://www.tutorialspoint.com/data_structures_algorithms/					

Reference	2. https://www.geeksforgeeks.org/data-structures/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs		K Level	Learning Outcomes (LO1-LO15)
	CO1	What is an language, Understand Beginning with C++ and Basic concepts of Object Oriented Programming and Learn evolution [PO3]. Define OOPs, List Object Oriented Language, Choose the Benefits of OOPS and Apply the Application of OOPS	K1 & K2	LO1
	CO2	What is Token, Why data type need, Explain Keyword, Identifier and constant Basic ,User defined and Derived data Types, Learn Operators and Control structures in C++ Understand the Expression and their types for the given problem and Evaluate its performance[PO3].	K3	LO4
	CO3	Learn the Classes and Objects, What is Constructor and Destructors, Learn Operator overloading and Type conversions.[PO2]).	K4	LO3, LO5
	CO4	What is an algorithm, Compare different algorithms and Choose the best algorithm [PO3]. Define stack and queue, List their applications in real life, Choose the best data structure for the real life problem using array and Analyze the performance of the algorithm. (Assignment on choosing a small real-world problem [PO1], creatively choosing the appropriate one (stack or queue), writing an algorithm using array and computing its complexity [PO3]. Present it as a word document [PO2])	K5	LO11
	CO5	Learn the terminologies in tree and graph, What is binary tree, Illustrate the various tree and graph traversals, Identify the best traversal for real life problem, Compare and contrast the various traversals and Justify the selection of a traversal [PO3].	K5 & K6	LO2, LO15

Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO 3	PO 4	PO5	Mea n Scor e	PSO 1	PSO 2	PS O3	Mea n Scor e	2.02
	CO1	3	2	2	2	1	2.0	3	2	2	2.3	
	CO2	2	3	2	3	1	2.2	2	3	1	2.0	
	CO3	2	2	3	1	2	2.0	2	2	2	2.0	
	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)							- 3 Marks				
	Moderately Correlating (M)							- 2 Marks				
Weakly Correlating (W)							- 1 Mark					
No Correlation (N)							- 0 Mark					
Teaching–Learning & Assessment Framework												
Teaching Methodology Blended Learning, Participative Learning							Assessment Types Written Mode – Class Test, Home Assignment, Exam Integrated Mode - seminars					

Course Code	U26CSP102	Semester I	Year I	Credits	L	T	P	Hrs
Core	Course Name Data structures Lab				3		5	5

Nature of the Course	Core
Learning objectives	□ To understand the fundamentals of C++ programming □ To apply control structures, functions and strings in developing C++ programs. □ To develop the problemsolving skills using object oriented concepts such as functions in C++. □ To implement fundamental datastructures such as stacks and queues using arrays and perform basic operations on them. □ To analyze and implement searching and sorting algorithms for efficient data processing and problem solving using C++.
	List of Programs
	Implement the following exercises using C++ Programming language: 1. Write a C++ program to find the sum and average of two numbers. 2. Write a C++ program to swap two numbers. 3. Write a C++ program to check whether a number is even or odd. 4. Write a C++ program to find the largest of three numbers. 5. Write a C++ program to print the Fibonacci series. 6. Write a C++ program to find the largest element in an array. 7. Write a C++ program to perform matrix addition. 8. Write a C++ program to demonstrate the use of classes and objects. 9. Write a C++ program to implement a Stack using an array. 10. Write a C++ program to implement a Queue using an array. 11. Write a C++ program to perform Linear Search and Binary Search. 12. Write a C++ program to perform Bubble Sort.
Question paper Coverage- 100% Practical	
Text book	1. Ellis Horowitz , SartajSahni, Susan Anderson Freed, Second Edition , “Fundamentals of Data in C”, Universities Press 2. E. Horowitz, S. Sahni and S. Rajasekaran, Second Edition ,“Fundamentals of Computer Algorithms “ Universities Press.

Reference Books	1. Seymour Lipschutz ,”Data Structures with C”, First Edition, Schaum’s outline series in computers, Tata McGraw Hill.			
	2. R.Krishnamoorthy and G.IndiraniKumaravel, Data Structures using C, Tata McGrawHill – 2008.			
	3. A.K.Sharma, Data Structures using C , Pearson Education India,2011.			
	4. G. Brassard and P. Bratley, “Fundamentals of Algorithms”, PHI, New Delhi, 1997.			
E-Reference	1. https://archive.nptel.ac.in/noc/courses/noc18/SEM1/noc18-cs25/			
	2. https://archive.nptel.ac.in/courses/106/106/106106127/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	Cos		K Level	Learning Outcomes (LO1-LO15)
	CO1	To Understand the fundamental concepts of C++ programming, including variables, operators, Control statements, Arrays, Functions, Classes and objects.	K1 & K2	LO1
	CO2	To develop problem solving skills by implementing programs using decision making statements Loops, arrays and Matrices.	K3	LO4
	CO3	To apply object oriented programming concepts such as classes and objects in developing in simple C++ applications	K4	LO3, LO5
	CO4	To implement fundamental datastructures such as stacks and queues using arrays and perform basic operations on them.	K5	LO11
	CO5	To develop programs for searching and sorting techniques and apply them solve computational problems efficiently.	K5 & K6	LO2, LO15
Mapping of Cos with Pos&	Programme Outcomes		Programme Specific Outcomes	Mapping Score of Cos with POs & PSOs

Course				
Learning objectives	➤ To Understand problem solving method. ➤ To Understand about Relations and its properties ➤ To Describes Groups and its properties with theorems. ➤ To evaluate Matrix problems and its types using the properties of matrices. ➤ To develop the ability to simplify Posets using the properties of Boolean algebra.			
Units	Course Contents			
Unit I	Review of theory of sets : Union –Difference- Intersection - Complementation - De-Morgans Law- Symmetric – Cartesian product.			
Unit II	Relations – Equivalence Relations: Reflexive – Symmetric – Transitivity.			
Unit III	Groups– Definitions &Examples–Elementary Properties – Lagrange’s Theorem.			
Unit IV	Matrices – Special type of Matrices – operations – Inverse of a Martrices – Rank of Matrix – Cayley Hamilton theorem.			
Unit V	Partial Ordering – Posets– Hasse Diagram-Lattices–Properties –Boolean Algebra.			
Question paper Coverage- 70% Problem + 30 % Theory				
Text book	Modern Algebra ,S.Arumugam&ThangapandiIssac, New Gamma Publishing House, Palamkottai.			
Reference Books	Discrete mathematics by M.K.VenkataramananandN.Chandrasekaran, Nation publishing &CO.,Chennai.			
E-Reference	https://www.discrete.openmathbooks.org/dmoi4.html			
	https://www.ocw.mit.edu/courses/6-042j-mathematics-for-computer-science-fall-2010			
	https://www.discretemath.org/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	Cos		K Level	Learning Outcomes (LO1- LO15)
	CO1	Identify the Review of theory of sets, Illustrate it and find the solved problems and analyze [PO3] it.	K1 &	LO1

								K2					
	CO2	Define Relations, Equivalence Relations, Illustrate its Problems and find out the solved problems.						K3		LO4			
	CO3	Define Groups and apply the Examples, Define Elementary Properties, understand and Demonstrate the Lagrange’s Theorem.						K4		LO3, LO5			
	CO4	Define Matrices, and its type of Matrices, Find out its operations ,Inverse and Rank of a Matrices, Demonstrate the Cayley Hamilton theorem Find out the Solved problems , analyze [PO3]it, identify it and justify it. Group discussion on Formulas.						K5		LO11			
	CO5	Define Posets, Hasse Diagram, Recall Lattices and its Properties Analyze [PO3] the Solved Problems.						K5 & K6		LO2, LO15			
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	Cos	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.0		
	CO3	2	2	3	1	2	2.0	2	2	2	2.0		
	CO4	2	1	3	2	2	2.0	3	2	3	2.6		
	CO5	2	2	2	1	2	1.8	2	1	1	1.3		
	Overall score for PO						2.0	Overall score for PSO			2.04		
	Strongly Correlating (S)							- 3 Marks					
	Moderately Correlating (M)							- 2 Marks					
	Weakly Correlating (W)							- 1 Mark					
	No Correlation (N)							- 0 Mark					
Teaching–Learning & Assessment Framework													
Teaching Methodology							Assessment Types						
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode- seminars						

Course Code	U26CSAE11	Semester I	Year I	Credits	L	T	P	Hrs
Core/ Elective	Course Name Quantitative Aptitude			2		2		2
Nature of the Course	Ability Enhancement Course – 1							

Learning objectives	➤ To Develop quantitative and logical reasoning skills. ➤ To Solve arithmetic and aptitude problems accurately. ➤ To Apply analytical thinking to real-life situations. ➤ To Interpret data using tables and graphs. ➤ To Improve speed and accuracy for competitive examinations.			
Units	Course Contents			
Unit I	Numbers — Average – Problems on Numbers.			
Unit II	Problems on Ages – Profits and Loss – Ratio and Proportion.			
Unit III	Time and work – Time and Distance - Problems on Trains.			
Unit IV	Permutation and Combination – Probability – Odd-man Out & Series			
Unit V	Data Interpretation – Tabulation – Bar Graphs - Pie Charts – Line graphs.			
Question paper Coverage- 100% theory				
Text book	R.S. AGGARWAL., Quantitative Aptitude, S.Chand& Company Ltd.,			
Reference Books	1. Tyagi, R.K. Quantitative Aptitude for Competitive Examinations, 2018-19 Edition,			
	2. Er. Deepak Agarwal, Quantitative Aptitude, Disha Publisher.			
E-Reference	https://www.javatpoint.com/aptitude/quantitative			
	https://www.topper.com/guides/quantitative-aptitude/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Apply quantitative and arithmetic concepts to solve aptitude problems.	K1	LO1
	CO2	Analyze and solve logical reasoning and probability-based problems using appropriate techniques.	K2	LO4
	CO3	Interpret and evaluate data presented in tables and graphical formats for decision-making..	K4	LO3, LO5
Mapping of CO's	Programme Outcomes		Programme Specific	Mapping Score of Cos

with PO's & PSOs								Outcomes				with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.45
	CO1	3	3	2	2	1	2.2	3	2	2	2.3	
	CO2	3	3	3	2	2	2.6	2	3	3	2.7	
	CO3	3	3	2	3	2	2.6	2	3	2	2.3	
	Overall score for PO						2.47	Overall score for PSO			2.43	
	Strongly Correlating (S)							-	3 Marks			
	Moderately Correlating (M)							-	2 Marks			
Weakly Correlating (W)							-	1 Mark				
No Correlation (N)							-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode - Seminars					

Skill Enhancement Course (SEC) – 1
Semester- I: Common Course for All UG Programmes
Computer Applications
(Common Paper for all UG Courses)

Course Code	2 Hrs. / Week	Semester I	Year I	Credits	L	T	P	Hrs
U26CSS101	COMPUTER APPLICATIONS (Practical)						2	
Nature of the Course	Employability / Skill Enhancement							
Learning objectives	LO1: Understand the fundamentals of computers and their role in modern society. LO2: Develop practical skills in using office productivity tools for academic and professional purposes. LO3: Understand the basics of internet technologies, digital communication, and cybersecurity. LO4: Apply spreadsheet tools for data organization, analysis, and visualization. LO5: Explore emerging technologies such as Artificial Intelligence, Cloud Computing, and Data Analytics.							
Units	Course Contents							
I	Computer Fundamentals: Evolution of Computers - Characteristics and Applications of Computers - Input and Output Devices – Hardware and Software - Memory and Storage Devices - Operating Systems and their Functions – Windows Operating Systems – Window Objects – Utilities: Recycle Bin- Calculator- Note pad- Paint – Tool Bar – Menu Bar.							12
II	Office Automation Tools: Introduction to Word Processing – Creating, Editing and Formatting Documents – Ruler Line – Page Layout - Table Manipulation - Mail Merge – Find and Replace – Equation Editor - Word Art - Printing and Sharing Documents.							12
III	Spreadsheet Applications: Introduction to Spreadsheets - Workbook and Worksheet Management - Data Entry and Formatting - Formulas and Functions - Charts and Graphs - Sorting and Filtering - Data Analysis Techniques.							12
IV	Internet and Cyber Security: Internet Concepts and Services - Web Browsers and Search Engines - E-mail Communication - Cloud Computing Basics - Cyber Threats and Risks - Password Security - Safe Online Practices - Digital Ethics and Cyber Laws.							12
V	Emerging Technologies: Artificial Intelligence - Machine Learning Applications - Internet of Things (IoT) - Big Data Analytics - Mobile Computing - Digital Transformation - Applications of Emerging Technologies in Various Domains- Presentation Software - Creating Effective Presentations - Multimedia Features							12
Total Hours								60
Question paper Coverage - 100% Practical								
Text book	1. <i>Introduction to Computers, Peter Norton, McGraw-Hill Education, Latest Edition.</i> 2. <i>Fundamentals of Computers, V. Rajaraman, PHI Learning, Latest Edition.</i>							
Reference Book	1. <i>Fundamentals of Information Technology, Alexis Leon & Mathews Leon, Vikas Publishing House, Latest Edition.</i> 2. <i>Computer Fundamentals, Anita Goel, Pearson Education, Latest Edition.</i>							

E-Reference	https://www.gcfglobal.org https://www.w3schools.com https://nptel.ac.in			
	COs	Course Outcomes At the end of the course, students will be able to	K Level	Learning Outcomes (LO1-LO15)
	CO1	Understand and explain the fundamental concepts of computer systems and information technology.	K1 & K2	LO1
	CO2	Use office productivity tools to create professional documents and presentations.	K3	LO2
	CO3	Apply spreadsheet functions and techniques for data management and analysis.	K3 & K4	LO4
	CO4	Demonstrate safe and responsible use of internet technologies and cybersecurity practices.	K 3	LO3
	CO5	Explain the significance and applications of emerging technologies in various sectors.	K2 & K4	LO5
	CO6	Utilize computer applications effectively to solve academic and workplace problems.	K5 & K6	LO1

LAB LIST

- **Identification of Computer Hardware and Peripheral Devices**
Identify and document the functions of system-unit components, input devices, output devices, memory units, and storage devices.
- **Windows Operating System and File Management**
Create folders and subfolders; copy, move, rename, search, sort, compress, restore, and delete files using Windows File Explorer and Recycle Bin.
- **Windows Accessories and Utility Applications**
Perform basic tasks using Notepad, Calculator, Paint, Snipping Tool, Character Map, and other Windows utilities.
- **Creating and Formatting a Document in MS Word**
Create a document containing headings, paragraphs, lists, borders, shading, headers, footers, page numbers, symbols, and special characters.
- **Page Layout and Advanced Document Formatting**
Design a multi-page document using margins, orientation, page size, columns, section breaks, ruler settings, tabs, indentation, line spacing, and paragraph spacing.
- **Table Creation and Manipulation in MS Word**
Create and format a student mark statement or employee information table using cell merging, splitting, alignment, borders, shading, sorting, and basic calculations.
- **Mail Merge Application**
Prepare personalized appointment letters, invitations, certificates, or notices for multiple recipients using Mail Merge and an external recipient list.
- **Find and Replace, Equation Editor, and WordArt**
Create an academic document containing mathematical equations, WordArt, text boxes, shapes, Find and Replace operations, spelling checks, and page formatting.

objectives	➤ To learn relational database concepts including relational model, keys, and relational algebra. ➤ To understand Structured Query Language (SQL) for data definition, manipulation, and querying. ➤ To study normalization techniques and database design principles. ➤ To understand transaction management, concurrency control, and database security.			
Units	Course Contents			
Unit I	Introduction to Database Systems -Data, Information, Database, Database System Concepts, Characteristics of Database Approach, File System vs Database System, Database Users and Administrators, DBMS Architecture, Data Models, Three-Level Architecture, Data Independence			
Unit II	Relational Data Model - Relational Model Concepts, Relational Database Schema, Keys (Primary Key, Foreign Key, Candidate Key), Integrity Constraints, Relational Algebra, Relational Calculus			
Unit III	Structured Query Language (SQL) -Introduction to SQL, Data Definition Language (DDL), Data Manipulation Language (DML), Data Control Language (DCL), SQL Queries, Aggregate Functions, Nested Queries, Joins			
Unit IV	Database Design and Normalization - Functional Dependency, Normalization Concepts, First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF), Boyce-Codd Normal Form (BCNF), Database Design Process			
Unit V	Transaction Management and Security - Transaction Concepts, ACID Properties, Concurrency Control, Locking Techniques, Deadlocks, Database Security, Backup and Recovery			
Question paper Coverage- 100% theory				
Text book	Abraham Silberschatz, Henry F. Korth, S. Sudarshan – Database System Concepts , McGraw Hill.			
Reference Books	Raghu Ramakrishnan & Johannes Gehrke – Database Management Systems			
	Elmasri&Navathe – Fundamentals of Database Systems			
	C.J. Date – An Introduction to Database Systems			
E-Reference	https://docs.oracle.com/javase/tutorial/			
	https://www.w3schools.com/mysql/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	Cos		K Le vel	Learning Outcomes (LO1- LO15)
	CO1	Understand the concepts of database systems, DBMS architecture, and database models.	K2	LO1

	CO2	Apply relational database concepts such as keys, relational algebra, and relational calculus.								K3	LO2	
	CO3	Write SQL queries to create, manipulate, and retrieve data from relational databases.								K3	LO3	
	CO4	Design relational databases using normalization techniques.								K4	LO4	
	CO5	Understand transaction processing, concurrency control, and database security mechanisms.								K2	LO5	
Mapping of Cos with Pos& PSOs	Programme Outcomes						Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO 2	PO3	PO 4	PO5	Mean Score	PSO 1	PSO 2	PS O3	Mean Score	2.02
	CO1	3	2	1			2.0	3	2	2	2.3	
	CO2	3	3	2	1		2.2	2	3	1	2.0	
	CO3	3	3	3	2	1	2.0	2	2	2	2.0	
	CO4	3	2	3	2	1	2.0	3	2	3	2.6	
	CO5	2	2	3	3	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)						-	3 Marks				

	Moderately Correlating (M)	-	2 Marks
	Weakly Correlating (W)	-	1 Mark
	No Correlation (N)	-	0 Mark
Teaching–Learning & Assessment Framework			
Teaching Methodology Blended Learning, Participative Learning		Assessment Types Written Mode – Class Test, Home Assignment, Exam Integrated Mode- seminars	

Course Code	U26CSP204	Semester II	Year I	Credits	L	T	P	Hrs
Core/ Elective	Course Name Relational Database Management Systems LAB			3			5	5
Nature of the Course	Core							
Learning objectives	➤ To understand the basic concepts of relational databases and the structure of database tables. ➤ To learn and implement SQL commands for creating, modifying, and managing							

	relational databases. ➤ To develop skills in writing SQL queries for data retrieval, manipulation, and analysis. ➤ To apply database design principles such as keys, constraints, and normalization ➤ To understand transaction control, security mechanisms, and database management operations.			
	List of Programs			
1.	Create a database and create tables for Student, Course, and Enrollment with appropriate constraints (Primary Key, Foreign Key).			
2.	Write SQL queries to insert records into the tables created in the database.			
3.	Write SQL queries to update and delete records from a table.			
4.	Write SQL queries to update and delete records from a table.			
5.	Write SQL queries using aggregate functions (COUNT, SUM, AVG, MAX, MIN).			
6.	Write SQL queries to display student details using ORDER BY and GROUP BY clauses .			
7.	Write SQL queries using different types of joins (Inner Join, Left Join, Right Join).			
8.	Write SQL queries using nested queries (subqueries) .			
9.	Create tables with integrity constraints such as NOT NULL, UNIQUE, PRIMARY KEY, and FOREIGN KEY.			
10.	Write SQL queries to create views and retrieve data from the views .			
11.	Write SQL commands to grant and revoke user privileges using DCL commands.			
12.	Design a normalized database schema and convert it into 1NF, 2NF, and 3NF			
13.	Write SQL queries to implement transactions using COMMIT and ROLLBACK .			
14.	Write SQL queries to create indexes and improve query performance .			
15.	Develop a mini database application for a Library Management System using SQL tables and queries.			
Question paper Coverage- 100% Practical				
Text book	Abraham Silberschatz, Henry F. Korth, S. Sudarshan – Database System Concepts , McGraw Hill.			
Reference Books	Raghu Ramakrishnan & Johannes Gehrke – Database Management Systems			
	Elmasri&Navathe – Fundamentals of Database Systems			
	C.J. Date – An Introduction to Database Systems			
E-Reference	https://docs.oracle.com/javase/tutorial/			
	https://www.w3schools.com/mysql/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	Cos	Create and manage relational databases using SQL commands.	K Le vel	Learning Outcomes (LO1-LO15)

	CO1	Implement SQL queries to retrieve, update, and manipulate data from database tables.						K3	LO1					
	CO2	Apply relational database concepts such as keys, constraints, joins, and subqueries.						K3	LO2,LO3					
	CO3	Design normalized database schemas using normalization techniques.						K4	LO3					
	CO4	Implement transaction control, security commands, and database management operations.						K4	LO4					
	CO5	Create and manage relational databases using SQL commands.						K5	LO5					
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs		
	Cos	PO1	PO 2	PO 3	PO 4	PO5	Mean Score	PSO 1	PSO 2	PS O3	Mean Score	2.03		
	CO1	3	2	2	2	1	2.0	3	2	2	2.3			
	CO2	2	3	2	3	1	2.2	2	3	1	2.0			
	CO3	2	2	3	1	2	2.0	2	2	2	2.0			
	CO4	2	1	3	2	2	2.0	3	2	3	2.6			
	CO5	2	2	2	1	2	1.8	2	1	1	1.3			
	Overall score for PO						2.0	Overall score for PSO			2.06			
	Strongly Correlating (S)							-					3 Marks	
	Moderately Correlating (M)							-					2 Marks	
Weakly Correlating (W)							-					1 Mark		
No Correlation (N)							-					0 Mark		
Teaching–Learning & Assessment Framework														
Teaching Methodology							Assessment Types							
Blended Learning, Participative Learning							Practical Mode – Lab Work							

Course Code	U26CSA22	Semester II	Year I	Credits	L	T	P	Hrs
Core/ Elective	Course Name Statistical Methods			3		4		4
Nature of the Course	Allied – 3							
Learning objectives	➤ To recognize the importance and value of mathematical and statistical thinking, training, and approach to problem solving, on adverse variety of disciplines ➤ To become familiar with a variety of examples where mathematics or statistics helps							

	accurately explain abstract or physical phenomena. ➤ Creating confidence to have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions. ➤ To have a broad back ground in Statistics fundamentals and techniques. ➤ To understand and computing Statistical Methods by which to develop the programming skills			
Units	Course Contents			
Unit I	Introduction and Scope: Statistical Methods and Their Limitations Classifications, Tabulation and Diagrammatic Representation of various types of statistical data.			
Unit II	Measures of Location: Arithmetic Mean, Median, Mode, Geometric Mean, Harmonic Mean and their properties			
Unit III	Measures of Dispersion: Range, Mean Deviation, Standard Deviation and their relative measures.			
Unit IV	Measures of Skewness: Karl Pearson’s, Bowley’s and Kelly’s and coefficient of Skewness and kurtosis based on moments.			
Unit V	Correlation: Karl Pearson – Spearman’s Rank Correlation – Regression Analysis: simple Regression Equations.			
Question paper Coverage - 50% theory + 50% problem				
Text book	S.ArumugamIssac- Statistics-New Gamma Publishing House, Palayamkottai,2014..			
Reference Book	Fundamental of Mathematical Statistics - S.C.Gupta,V.K.Kapoor			
E-Reference	https://openstax.org/details/books/introductory-statistics https://stattrek.com https://www.statology.org			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Acquire the knowledge of Statistics fundamentals and techniques	K1 & K2	LO1
	CO2	Solve the measures of location problems	K3	LO4
	CO3	Describe the solution methods using measures of Dispersion	K4	LO5
	CO4	Evaluate problems using measures of skewness	K5	LO11

	CO5	Understand the concepts Correlation and Regression analysis.							K5 & K6		LO2, LO15		
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.35	
	CO1	3	2	2	1	2	2.0	3	2	2	2.3		
	CO2	2	3	2	2	2	2.2	2	3	2	2.3		
	CO3	2	2	3	2	2	2.2	3	2	2	2.3		
	CO4	3	2	3	3	2	2.6	3	3	2	2.6		
	CO5	2	2	2	3	3	2.4	2	3	3	2.6		
	Overall score for PO					2.28	Overall score for PSO			2.42			
	Strongly Correlating (S)							-					3 Marks
	Moderately Correlating (M)							-					2 Marks
Weakly Correlating (W)							-					1 Mark	
No Correlation (N)							-					0 Mark	
Teaching–Learning & Assessment Framework													
Teaching Methodology: Experiential learning,Blended Learning, Participative Learning							Assessment Types: Written Mode: Unit Tests, Assignment Submission, Model Examination, Programming Exercises Oral Mode -Oral Exam, Group Discussion, Integrated Mode- Seminar Presentation.						

[illegible]

Units	Course Contents			
Unit I	SoftSkills-Introduction Whataresoftskills?-ImportanceofSoftSkills- DifferencebetweenHard Skills and Soft Skills-Kinds of Soft Skills Self-Discovery-SWOCAnalysis-AdvantagesofSWOC analysis			
Unit II	Attitude WhatisAttitude?-Formationofattitudes-PositiveandNegativeattitudes- Power of positive attitude- Obstacles in Developing Positive Attitudes- Overcoming Negative Attitude and its Impacts- Developing Positive Attitude			
Unit III	TimeManagement ValueofTime-SenseofTimemanagement –Reasonsforprocrastination Overcomingprocrastination-TipsforTimeManagement-Decidingupon Priorities-Effective Scheduling			
Unit IV	CommunicationSkills Listening-ListeningandHearing- ActiveandPassiveListening Speaking-Verbal and Non-verbal Communications Reading-Skimming, Scanning, Intensive andExtensiveReading Writing- Formaland InformalLetters-DraftingMailsand Memos			
Unit V	InterviewSkills PreparingResume/CV PreparingResume/CV-CoveringLetter InterviewEtiquette,DressCode,Do’s,andDon’ts			
Question paper Coverage- 100% theory				
Text books	1. Butterfield,Jeffet.al. <i>SoftSkillsforEveryone</i> .CengageIndia,New Delhi: 2022.			
	2. Sharma,Prashant. <i>SoftSkills:PersonalityDevelopmentfor Success</i> . BPB Publications, Bengaluru: 2019			
Reference Books	1. Almonte, Richard. <i>A Practical Guide to Soft Skills: Communication,Psychology,andEthicsforYourProfessionalLife</i> . Routledge, Oxford: 2021.			
	2. Bardhan,PeetaBobby&Dr.KrishaveerAbhishekChalla. <i>A Complete Textbook on Soft Skills</i> . Kanishka Publisher, Chennai:2020.			
	3. Mitra,BarunK. <i>PersonalityDevelopmentandSoftSkills</i> (Second Edition). Oxford UVP., New Delhi:2016.			
E- Reference	https://baou.edu.in/assets/pdf/BBAATR-304.pdf			
	https://www.goskills.com			
	https://ncert.nic.in/textbook/pdf/kect108.pdf			
	https://www.sirc-icai.org/images/cabf/SoftSkills&PersonalityDevelopment.pdf			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Identify their strengths and weaknesses	K1 & K2	LO1
	CO2	Identify the opportunities and the challenges	K3	LO4
	CO3	Inculcate a positive attitude and understand the importance of scheduling their work	K4	LO3, LO5
Mapping of COs	Programme Outcomes		Programme Specific	Mapping Score of Cos

with POs& PSOs								Outcomes				with POs & PSOs			
	COs	PO1	PO2	PO 3	PO 4	PO5	Mea n Scor e	PSO 1	PSO 2	PS O3	M ea n Sc or e	2.08			
	CO1	3	2	2	2	1	2.0	3	2	2	2. 3				
	CO2	2	3	2	3	1	2.2	2	3	1	2. 0				
	CO3	2	2	3	1	2	2.0	2	2	2	2. 0				
	Overall score for PO						2.06	Overall score for PSO			2. 1				
	Strongly Correlating (S)							-	3 Marks						
	Moderately Correlating (M)							-	2 Marks						
Weakly Correlating (W)							-	1 Mark							
No Correlation (N)							-	0 Mark							
Teaching–Learning & Assessment Framework															
Teaching Methodology Blended Learning, Participative Learning							Assessment Types Written Mode – Class Test, Home Assignment, ExamIntegrated Mode - Seminars								
Course Code	U26CST305		Semester III	Year II				Credits		L	T	P	H rs		
Core/ Elective	Course Name JAVA Programming							4			5		5		
Nature of the Course	Core														
Learning objectives	➤ To understand the fundamentals of Java programming, including Java history, features, Java environment, and the structure of Java programs.. ➤ To learn the use of constants, variables, data types, operators, and expressions in Java programming. ➤ To develop problem-solving skills using decision-making statements and looping constructs in Java. ➤ To understand object-oriented programming concepts in Java such as classes, objects, constructors, methods, arrays, and strings. ➤ To gain knowledge of Java applet programming and GUI development using AWT, Swing, and layout managers.														

Units	Course Contents
Unit I	Java Evolution: Java History, Java Features, Hardware and Software Requirements, Java support systems, Java Environment- Overview of Java Language: Introduction, Simple Java Programs, Java Program Structure, Java Tokens, Java statements, Installing and Configuring Java, Implementing a Java Program, Java Virtual Machine, Command Line arguments.
Unit II	Constants, Variables and Data types: Introduction, Constants, Variables, Data types, Declaration of Variables, Giving values to Variables, Scope of Variables, Symbolic Constants, Type casting, Getting values of Variables, Standard default values- Operators and Expressions: Arithmetic operators, Relational operators, Logical operators, Assignment operators, Increment and Decrement operators, Conditional operator, Bitwise operators, Special operators, Arithmetic Expressions, Evaluation of Expressions, Type conversion in Expressions, Operator precedence and Associativity, Mathematical Functions.
Unit III	Decision Making and Branching: Decision making with If statements, Simple If statement, The If...Else statement, Nesting of If ...Else statements, The Else If Ladder, The Switch statement, The?: operator- Decision Making and Looping: While statement, Do statement, for statement, Jumps in Loops, return statement, Labeled Loops.
Unit IV	Classes, Objects and Methods: Defining a class, Methods Declaration, Creating Objects, Accessing Class members, Constructor, Methods overloading, Static members, Nesting of Methods. Overriding Methods- Arrays: One Dimensional Arrays, Creating an Array, Two Dimensional Arrays, Strings, Vectors, Wrapper classes, Enumerated types.
Unit V	Applet Programming: Introduction , How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an executable Applets, Designing a Webpage, Applet Tag, adding Applet to HTML file, Running the Applet. Graphics Programming Using AWT, Swing and Layout Manager: Introduction, The Graphics Class, Lines and Rectangles, Circles and Ellipses, Drawing Arcs, Drawing Polygons, Line Graphs, Using Control Loops in Applets, Drawing Bar Charts. Introduction to AWT Package, Window Fundamentals, Closing an AWT Window or Frame, Working with Applets, working with Fonts, Layout Managers, Handling Events on AWT Components. Introduction to swing Package, Components and Containers.
Question paper Coverage- 100% theory	
Text book	E. Balagurusamy, Programming with Java, 6th Edition, McGraw Hill Education(India) Private Limited 2019.
Reference Books	Herbert Schildt , <i>Java: The Complete Reference</i> , 11th Edition, McGraw Hill Education, 2019.
	Paul Deitel& Harvey Deitel , <i>Java: How to Program</i> , 11th Edition, Pearson Education, 2018.
	Cay S. Horstmann , <i>Core Java Volume I – Fundamentals</i> , 11th Edition, Prentice Hall / Pearson, 2019.
	Y. Daniel Liang , <i>Introduction to Java Programming and Data Structures</i> , 12th Edition, Pearson Education, 2020.
E-Reference	https://docs.oracle.com/javase/tutorial/

	https://docs.oracle.com/en/java/											
Course learning outcomes	On successful completion of the course, the students will be able to											
	Cos									K Level	Learning Outcomes (LO1-LO15)	
	CO1	Understand the basic concepts of Java programming including program structure, Java environment, and Java Virtual Machine.								K2	LO1	
	CO2	Apply appropriate data types, variables, operators, and expressions to develop Java programs.								K3	LO2	
	CO3	Develop programs using decision-making statements and looping constructs to solve computational problems.								K3	LO2, LO3	
	CO4	Implement object-oriented programming concepts such as classes, objects, methods, constructors, arrays, and strings in Java.								K4	LO4	
	CO5	Design simple graphical user interface applications using Java Applets, AWT, Swing, and event handling mechanisms.								K5	LO5	
Mapping of Cos with Pos & PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	Cos	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02
	CO1	3	2	2	2	1	2.0	3	2	2	2.3	
	CO2	2	3	2	2	1	2.2	2	3	1	2.0	
	CO3	2	2	3	3	2	2.0	2	2	2	2.0	
	CO4	2	1	3	3	2	2.0	3	2	3	2.6	

	CO5	2	2	2	2	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)						-				3 Marks	
	Moderately Correlating (M)						-				2 Marks	
	Weakly Correlating (W)						-				1 Mark	
	No Correlation (N)						-				0 Mark	
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode- seminars					

Course Code	U26CSP306	Semester III	Year II	Credits	L	T	P	Hrs
Core/ Elective	Course Name Java Programming LAB			3			5	5
Nature of the Course	Core							
Learning objectives	➤ To understand the basic syntax of Java programming and develop simple programs using variables, constants, and arithmetic operations. ➤ To learn the use of control structures such as decision making statements and looping constructs in Java programs. ➤ To develop problem-solving skills by implementing Java programs using classes, objects, methods, and constructors. ➤ To apply arrays and strings in Java programs to solve computational problems. ➤ To design simple graphical user interface applications using Java Applets, AWT,							

	Swing, and event handling techniques.
	List of Programs
1.	Write a Java program to find the area of a circle .
2.	Write a Java program to swap two numbers without using a third variable.
3.	Write a Java program to perform all arithmetic operations .
4.	Write a Java program to display multiplication table using for loop .
5.	Write a Java program to create a class and object to display student details.
6.	Write a Java program to demonstrate method overloading .
7.	Write a Java program to demonstrate constructor .
8.	Write a Java program to find sum of elements in an array .
9.	Write a Java program to perform matrix addition using two-dimensional arrays .
10.	Write a Java program to demonstrate string operations .
11.	Write a Java Applet program to draw a line and rectangle .
12.	Write a Java program to draw bar chart using Applet .
13.	Write a Java program to create a simple AWT window with buttons .
14.	Write a Java program to demonstrate event handling in AWT .
15.	Write a Java program using layout managers in AWT/Swing .
Question paper Coverage- 100% Practical	
Text book	E. Balagurusamy, Programming with Java, 6th Edition, McGraw Hill Education(India) Private Limited 2019.
Reference Books	Herbert Schildt , <i>Java: The Complete Reference</i> , 11th Edition, McGraw Hill Education, 2019.
	Paul Deitel & Harvey Deitel , <i>Java: How to Program</i> , 11th Edition, Pearson Education, 2018.
	Cay S. Horstmann , <i>Core Java Volume I – Fundamentals</i> , 11th Edition, Prentice Hall / Pearson, 2019.
	Y. Daniel Liang , <i>Introduction to Java Programming and Data Structures</i> , 12th Edition, Pearson Education, 2020.
E-	https://docs.oracle.com/javase/tutorial/

Reference	https://docs.oracle.com/en/java/											
Course learning outcomes	On successful completion of the course, the students will be able to											
	Cos									K Level	Learning Outcomes (LO1-LO15)	
	CO1	Develop simple Java programs using variables, constants, and operators to solve basic computational problems.								K3	LO1	
	CO2	Apply decision making statements and looping constructs to implement problem-solving programs.								K3	LO2	
	CO3	Implement object-oriented programming concepts such as classes, objects, methods, and constructors.								K4	LO3	
	CO4	Develop Java programs using arrays and strings to process and manipulate data.								K4	LO4	
	CO5	Design simple GUI applications using Java Applets, AWT, Swing components, layout managers, and event handling.								K5	LO5	
Mapping of Cos with Pos & PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	Cos	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.03
	CO1	3	2	2	2	1	2.0	3	2	2	2.3	
	CO2	2	3	2	3	1	2.2	2	3	1	2.0	
	CO3	2	2	3	1	2	2.0	2	2	2	2.0	
	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	

	Overall score for PO	2.0	Overall score for PSO	2.06	
	Strongly Correlating (S)	-	3 Marks		
	Moderately Correlating (M)	-	2 Marks		
	Weakly Correlating (W)	-	1 Mark		
	No Correlation (N) - 0 Mark				
Teaching–Learning & Assessment Framework					
Teaching Methodology		Assessment Types			
Blended Learning, Participative Learning		Practical Mode – Lab Work			

Course Code	U26CSA33	Semester III	Year II	Credits	L	T	P	Hrs
Core / Elective	Course Name Computer Graphics			3		4		4
Nature of the Course	Elective							
Learning objectives	➤ To introduce the components of a graphics system and become familiar with building approach of graphics system components and algorithms related with them. ➤ To understand 2D and 3D computer graphics concepts. ➤ To provide an understanding to the basic geometrical primitives and transformations of geometrical shapes. ➤ To provide an understanding of mapping from a world coordinate system to device coordinates, clipping, and projections. ➤ To make students understand how to implement the computer graphics concepts using							

	ng three dimensional.			
Units	Course Contents			
Unit I	Overview of Graphics Systems: Graphics applications-CAD, Computer art, Education & Training, Entertainment, Visualization, Image Processing. Video display devices –Cathode Ray Tube, Raster–scan displays, Random–scan displays, color CRT monitors – Beam penetration, shadow mask, Flat panel displays – plasma panel, LCD. Graphics Workstation & Viewing system, Interactive Input devices, Hard copy devices.			
Unit II	Line drawingAlgorithm-DDA and Bresenham’s, Circle drawingAlgorithm–DDA and midpoint, Attributes of Graphics Primitives – color and gray scale, OpenGL- Color functions, Point attributes, Line attributes, Fill area attributes, Character attributes.			
Unit III	Geometric Transformations: Basic 2 Dimensional transformation - translation,rotation and scaling, Matrix representation andhomogenous coordinates, Inverse transformation, Composite translate, rotation and scaling, general 2D pivot point rotation, general 2Dfixed point scaling. OpenGL functions for 2-D geometric transformation.			
Unit IV	Two-Dimensional Viewing: 2 D viewing pipeline, clipping window, Normalization andviewport transformations. OpenGL - 2 D viewing functions. 2 D Clipping - Point clipping, Line clipping-Cohen Sutherland Line clipping, Nicholl-Lee-Nicholl line clipping, Polygon clipping – Sutherland Hodgeman polygon clipping, Weiler-Atherton polygon clipping, Text clipping.			
Unit V	Three Dimensional Viewing: Overview of 3 D viewing concepts, 3D viewing pipelining , three dimensional geometric Transformations-Translation, Rotation and Scaling, Visible surface detection methods - Back face detection,Depth buffer method, Octrees methods, ray casting method.			
Question paper Coverage- 100% theory				
Text book	1.Computer Graphics with OpenGL, Donald Hearn and M. Pauline Baker :Pearson Education, Fourth Edition 2018			
Reference Books	1.Edward Angel – “Interactive Computer Graphics – A Top-down Approach using OpenGL”, Pearson Education, 5 th Edition 2009. 2. OpenGL Programming Guide: The Official Guide to Learning OpenGL, Version 2, 5th Edition.			
E-Reference	https://en.wikipedia.org/wiki/Computer_graphics			
	https://www.w3schools.com/graphics/			
	https://www.geeksforgeeks.org/computer-graphics/computer-graphics-2/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs		K Leve l	Learning Outcomes (LO1-LO15)

	CO1	Describe the concepts of Computer Graphics, Visual Display devices, CRT monitors, Workstation and Viewing system.						K1 & K2		LO1			
	CO2	Outline the Line drawing and Circle drawing algorithms and Graphics primitives.						K3		LO4			
	CO3	Identify Geometric transformation ,2D pivot point rotation, general 2 D fixed point scaling.						K4		LO3, LO5			
	CO4	Explain the Two dimensional Viewing and types of clipping and its functions.						K5		LO11			
	CO5	Measure three dimensional geometric Transformations- Translation, Rotation and Scaling, Visible surface detection methods.						K5 & K6		LO2, LO15			
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO 2	PO 3	PO 4	PO5	Mea n Scor e	PSO 1	PSO 2	PS O3	Mea n Scor e	2.02	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.0		
	CO3	2	2	3	1	2	2.0	2	2	2	2.0		
	CO4	2	1	3	2	2	2.0	3	2	3	2.6		
	CO5	2	2	2	1	2	1.8	2	1	1	1.3		
	Overall score for PO						2.0	Overall score for PSO			2.04		
	Strongly Correlating (S)						-	3 Marks					
	Moderately Correlating (M)						-	2 Marks					
Weakly Correlating (W)						-	1 Mark						
No Correlation (N)						-	0 Mark						
Teaching–Learning & Assessment Framework													
Teaching Methodology							Assessment Types						
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam						

3	Wall Papers											
4	Visiting Card											
5	Background Changing and Removing											
6	Birthday Card											
7	Friendship Card											
8	Wedding invitation Card											
9	Cloning an Image											
10	Flex Designing											
11	Photo Editing											
12	Book Cover											
Question paper Coverage - 100% practical												
Text book	The official <i>Adobe Photoshop Classroom in a Book (2026/2025 Release)</i> ,											
Reference Book	Mastering Adobe Photoshop 2026											
E-Reference	https://adobe.learn.com											
Course learning outcomes	On successful completion of the course, the students will be able to											
	COs	Course Outcomes									K Level	Learning Outcomes (LO1-LO15)
	CO1	To apply the different type of tools available in Photoshop to create simple applications.									K1 & K2	LO1
	CO2	To interpret programs using various filters in Photoshop.									K3	LO4
	CO3	To identify the basic tools and components of multimedia components.									K4	LO5
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.25
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	

2	Webpage creation using formatting tags(bold, italic, under line etc.,)			
3	Ordered list			
4	Unordered list			
5	Definition list			
6	Marquee creation			
7	Web page with images			
8	Webpage creation with various font styles and body colors.			
9	Hyper link			
10	Tables			
11	Frames			
12	Forms			
Question paper Coverage - 100% practical				
Text book	HTML and Web Designing – B.M. Harwani, Publisher: Dreamtech Press			
Reference Book	Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML and AJAX – Black Book by Kogent Learning Solutions Inc.			
E-Reference	https://www.w3schools.com/html https://developer.mozilla.org/en-US/docs/MDN/Tutorials https://www.geeksforgeeks.org/html/html-tutorial			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Introduce the concepts of HTML and recognize the role of HTML in web designing.	K1 & K2	LO1
	CO2	Construct HTML forms with various attribute tags and visualize the forms for better understanding.	K3	LO4
	CO3	Understand and Identify various features of Frames and construction of frames with the help of commands. Analyze frame attributes and evaluate the same.	K4	LO5
	Programme Outcomes		Programme Specific	Mapping Score of Cos

Mapping of Cos with Pos& PSOs								Outcomes				with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.25
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	
	CO2	2	3	2	3	2	2.4	2	3	2	2.3	
	CO3	2	2	3	3	2	2.4	2	2	3	2.3	
	Overall score for PO						2.2	Overall score for PSO			2.3	
	Strongly Correlating (S)							-	3 Marks			
	Moderately Correlating (M)							-	2 Marks			
Weakly Correlating (W)							-	1 Mark				
No Correlation (N)							-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Practical Mode – Lab Work					

Course Code	U26CST407	Semester IV	Year II	Credits	L	T	P	Hrs
Core/ Elective	Course Name Python Programming			4		5		5
Nature of the Course	Core							
Learning objectives	➤ To introduce the fundamentals of Python programming, including its features, syntax, variables, identifiers, data types, and operators. ➤ To explain decision-making and looping constructs in Python for implementing conditional and iterative program structures. ➤ To provide knowledge of functions and modules for developing modular and reusable Python programs. ➤ To illustrate string manipulation techniques and file handling operations in Python for processing and managing data. ➤ To familiarize students with Python data structures such as lists, tuples, sets, and dictionaries for effective data organization and manipulation.							

Units	Course Contents			
Unit I	Basics of Python Programming: Features of Python – History of Python – The Future of Python – Literal Constants – Variables and Identifiers – Data Types – Input Operation – Comments – Reserved Words – Indentation – Operators and Expressions – Expressions in Python – Operations on Strings – Other Data Types – Type Conversion.			
Unit II	Decision Control Statements: Introduction to Decision Control Statements – Selection/Conditional Branching statements – Basic Loop Structures/Iterative Statements – Nested Loops – The break Statement – The continue Statement – The pass Statement – The else Statement used with Loops.			
Unit III	Functions and Modules: Introduction – Function Declaration and Definition – Function Call – Variable Scope and Lifetime – The return Statement – More on Defining Functions – Lambda Functions or Anonymous Functions – Documentation Strings – Good Programming Practices – Recursive Functions – Modules – Packages in Python – Standard Library modules – Globals(), Locals() and Reload() – Function Redefinition.			
Unit IV	Python Strings Revisited: Concatenating, Appending and Multiplying Strings – Strings are Immutable – String Formatting Operator – Built-in String Methods and Functions – Slice Operation – ord() and chr() Functions – in and not in operators – Comparing Strings – Iterating String – The String Module – Metacharacters in Regular Expression.			
Unit V	File Handling: File Path – Types of files in Python - Opening and Closing files – Reading and Writing files – File Positions – Renaming and deleting files – Directory Methods – Case Studies			
Question paper Coverage- 100% theory				
Text book	ReemaThareja.”Python Programming using problem solving approach”, First Edition 2017, Oxford University Press.			
Reference Books	VamsiKurama, “Python Programming: A Modern Approach”, Pearson Education.			
	Mark Lutz, ”Learning Python”, Orielly.Adam Stewarts, “Python Programming”, Online.			
	Fabio Nelli, “Python Data Analytics”, APress.			
	Kenneth A. Lambert, “Fundamentals of Python – First Programs”, CENGAGE Publication.			
E-Reference	https://www.guru99.com/python-tutorials.html			
	https://www.w3schools.com/python/python_intro.asp			
	https://www.geeksforgeeks.org/python-programming-language/			
	https://en.wikipedia.org/wiki/Python_(programming_language)			
	https://www.programiz.com/python-programming			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Outline the basics of Python, control statements, functions,	K	Learning

		strings, Python Data structures and files.							Level	Outcomes (LO1-LO15)			
	CO1	Paraphrase about Python basics, conditional, looping statements and functions.							K1 & K2	LO1			
	CO2	Relate the concepts of strings, modules, List, tuples and dictionary, reading, writing and other file handling operations.							K3	LO4			
	CO3	Apply Python basics, selection, looping statements, functions and Modules.							K4	LO3, LO5			
	CO4	Make use of Python data structures like List, Tuple, Set, Dictionary and files concepts.							K5	LO11			
	CO5	Outline the basics of Python, control statements, functions, strings, Python Data structures and files.							K5 & K6	LO2, LO15			
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.		

											0	
	CO3	2	2	3	1	2	2.0	2	2	2	2.0	
	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
	Weakly Correlating (W)						-	1 Mark				
	No Correlation (N)						-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam					
							Integrated Mode- seminars					

Course Code	U26CSP408	Semester IV	Year II	Credits	L	T	P	Hrs
Core/ Elective	Course Name Python Programming Lab			3				5
Nature of the Course	Core							
Learning objectives	➤ To understand the fundamentals of Python programming and develop problem-solving skills using Python syntax and constructs. ➤ To apply control structures, functions, strings, lists, tuples, dictionaries, and file handling techniques in developing Python programs. ➤ To design and implement programs using modular programming concepts and object-oriented programming principles in Python. ➤ To develop the ability to debug, test, and execute Python programs efficiently for real-world computational problems. ➤ To gain practical experience in developing simple applications using Python libraries, exception handling, and database/file operations.							

	List of Programs			
	1. Program using variables, constants, I/O statements in Python. 2. Program using Operators in Python. 3. Program using Conditional Statements. 4. Program using Loops. 5. Program using Jump Statements. 6. Program using Functions. 7. Program using Recursion. 8. Program using Arrays. 9. Program using Strings. 10. Program using Modules. 11. Program using Lists. 12. Program using Tuples. 13. Program using Dictionaries. 14. Program for File Handling.			
Question paper Coverage- 100% Practical				
Text book	ReemaThareja.”Python Programming using problem solving approach”, First Edition 2017, Oxford University Press.			
Reference Books	VamsiKurama, “Python Programming: A Modern Approach”, Pearson Education.			
	Mark Lutz, ”Learning Python”, Orielly.Adam Stewarts, “Python Programming”, Online.			
	Fabio Nelli, “Python Data Analytics”, APress.			
	Kenneth A. Lambert, “Fundamentals of Python – First Programs”, CENGAGE Publication.			
E-Reference	https://www.guru99.com/python-tutorials.html			
	https://www.w3schools.com/python/python_intro.asp			
	https://www.geeksforgeeks.org/python-programming-language/			
	https://www.programiz.com/python-programming			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Outline the basics of Python, control statements, functions, strings, Python Data structures and files.	K Level	Learning Outcomes (LO1-LO15)
	CO1	Outline the basic concepts of Python needed for the given problem.	K1 & K2	LO1
	CO2	Write programs using selection/looping statements, functions, strings, files and Python Data Structures.]	K3	LO4
	CO3	Key-in the programs and test the programs with required input and get expected outputs with neat formatting and prepare the record work.	K4	LO3, LO5
	CO4	Explain the programs implemented using Python and deduce the answers for any queries raised.	K5	LO11

	CO5	Apply the necessary modifications and justify the desired result.									K5 & K6	LO2, LO15		
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs		
	COs	PO1	PO2	PO 3	PO 4	PO5	Mea n Scor e	PSO 1	PSO 2	PS O3	Mea n Scor e	2.03		
	CO1	3	2	2	2	1	2.0	3	2	2	2.3			
	CO2	2	3	2	3	1	2.2	2	3	1	2.0			
	CO3	2	2	3	1	2	2.0	2	2	2	2.0			
	CO4	2	1	3	2	2	2.0	3	2	1	2.0			
	CO5	2	2	2	1	2	1.8	3	2	1	2.0			
	Overall score for PO						2.0	Overall score for PSO			2.06			
	Strongly Correlating (S)							-					3 Marks	
	Moderately Correlating (M)							-					2 Marks	
Weakly Correlating (W)							-					1 Mark		
No Correlation (N)							-					0 Mark		
Teaching–Learning & Assessment Framework														
Teaching Methodology							Assessment Types							
Blended Learning, Participative Learning							Practical Mode – Lab Work							

[illegible]

Unit IV	Numerical Differentiation: Newton's Forward and Backward formulae -Numerical Integration: –Trapezoidal Rule - Simpson's 1/3 Rule.											
Unit V	Numerical solution of differential equations: Euler's method - Taylor series method – Range Kutta I , II, III and IVth order method.											
Text book	S.Arumugam and S.Thangapandi Issac, A.Somasundaram, Numerical Methods Scitech publications, Chennai -2005.											
Reference Book	Dr.B.S.Grewal,Numerical Methods in Engineering & Science with Programs in C, C++ & MATLAB,KHANNA PUBLISHERS Eleventh Edition - 1 January 2013.											
	Kandasamy P.& et Al.,Numerical Methods,S.Chand&Company, December 2006											
	RavendraKumar,Professor B. R. Sharma, Numerical Methods,Mahaveer Publications; 1st edition (1 January 2021)											
	Dr.B.S.Grewal,Numerical Methods in Engineering & Science with Programs in C, C++ & MATLAB,KHANNA PUBLISHERS Eleventh Edition - 1 January 2013											
E-Reference	https://www.geeksforgeeks.org/numerical-methods											
	https://www.tutorialspoint.com/numercial_methods											
	https://byjus.com/maths/numerical-methods											
	Question paper Coverage- 20% theory + 80% problem											
Course learning outcomes	On successful completion of the course, the students will be able to											
	Cos								K Level	Learning Outcomes (PO1-PO6)		
	CO1	Understand the Basics of Numerical computation							K1 & K2	PO1		
	CO2	Understand overview of Direct and Indirect methods							K3	PO1, PO2		
	CO3	Understand various formulae applied on interpolation							K4	PO3, PO6		
	CO4	Understand the Numerical Differentiation techniques							K5	PO4, PO5		
	CO5	Understand the various Numerical solution							K5 & K6	PO3, PO5		
Mapping of Cos with Pos & PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO	PO	PO	PO4	PO5	Mea	PSO	PS	PSO	Mea	2.41

		1	2	3			n Scor e	1	O2	3	n Scor e	
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	
	CO2	2	3	2	3	2	2.4	2	3	2	2.3	
	CO3	2	2	3	3	2	2.4	2	2	3	2.3	
	CO4	2	2	2	3	3	2.4	3	2	3	2.6	
	CO5	3	2	3	2	3	2.6	3	3	2	2.6	
	Overall score for PO						2.4	Overall score for PSO			2.42	
	Strongly Correlating (S)						-	3 Marks				
Moderately Correlating (M)						-	2 Marks					
Weakly Correlating (W)						-	1 Mark					
No Correlation (N)						-	0 Mark					
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam					
							Integrated Mode - Seminars					

[illegible]

Unit IV	Software Agents Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.			
Unit V	AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing – Machine Translation – Speech Recognition – Robot – Hardware.			
Question paper Coverage- 100% theory				
Text book	S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach, Prentice Hall, Third Edition, 2009.			
Reference Books	Artificial Intelligence: A Modern Approach, 4th Edition, Stuart Russell, peter Norvig University of California at Berkeley, Pearson education, 2020. 3			
	I. Bratko, —Prolog: Programming for Artificial Intelligence, Fourth Edition, Addison			
E-Reference	https://ai.stanford.edu/			
	https://www.geeksforgeeks.org/artificial-intelligence/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Explain the concepts, characteristics, intelligent agents, and problem-solving approaches in Artificial Intelligence.	K2	LO1 – LO3
	CO2	Apply uninformed and informed search strategies, heuristics, and optimization techniques to solve AI problems.	K3	LO3 – LO6
	CO3	Demploy knowledge representation techniques using First Order Predicate Logic, unification, chaining, and resolution methods.	K3	LO7 - LO9
	CO4	Analyze the architecture and communication mechanisms of intelligent software agents and multi-agent systems.	K4	LO10 - LO12
	CO5	Evaluate various AI applications including language models, NLP, information retrieval, machine	K5	LO13 – LO15

		translation, speech recognition, and robotics.										
Mapping of CO's with PO's & PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO3	PO 4	PO 5	Mean Score	PSO 1	PSO 2	PSO 3	Mean Score	2.415
	CO1	3	2	-	2	1	2.6	2	2	1	1.67	
	CO2	3	3	2	3	2	2.6	3	3	2	2.67	
	CO3	3	3	2	3	2	1.8	3	3	2	2.67	
	CO4	2	3	2	3	2	2.8	2	3	2	2.33	
	CO5	2	2	3	3	3	2.0	3	3	3	3.00	
	Overall score for PO						2.36	Overall score for PSO			2.47	
	Strongly Correlating (S)							-	3 Marks			
	Moderately Correlating (M)							-	2 Marks			
Weakly Correlating (W)							-	1 Mark				
No Correlation (N)							-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode–Seminars					

Course Code	U26CSN401	Semester IV	Year II	Credits	L	T	P	Hrs
Core/Elective	Fundamentals of Information Technology			2	-	2	-	2
Nature of the Course	Non Major Elective -I							
Learning objectives	➤ Understand the fundamental concepts of computers, including characteristics, generations, classifications, applications, capabilities, and limitations of computer systems. ➤ Identify and explain the basic organization of a computer system, including input devices, output devices, storage devices, and their functions. ➤ Differentiate various types of memory and storage technologies such as primary memory, secondary memory, ROM, RAM, and special memories. ➤ Analyze different categories of software, programming concepts, computer languages, and software development approaches including procedural and object-oriented programming. ➤ Explain the functions and types of operating systems, system performance concepts, and the roles of assemblers, compilers, interpreters, and modern operating system techniques such as multitasking and multiprocessing.							
Units	Course Contents							
Unit I	Introduction to Computers: Introduction, Definition, .Characteristics of Generations of Computer, Classification Of Computers, Applications of C Capabilities and limitations of computer							

Unit II	Basic Computer Organization: Role of I/O devices in a computer system. Input Units: Keyboard, Pointing Devices, Scanners and its types, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non-Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers.			
Unit III	Storage Fundamentals: Primary Vs Secondary Storage, Read Only Memory (ROM), Random Access Memory. Memory Expansion, Surface Storage Memory, Special Memories			
Unit IV	Software: Software Introduction, Types of S/W. System Software, Programming Software, Application Software, Computer Algorithm, Software Development, Program Preparations, Computer Languages, Programming: Procedural Programming, Object Oriented Programming.			
Unit V	Operating System: Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, MultiTasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux.			
Question paper Coverage - 100% theory				
Text book	S.KavithaMurugesan(2009),“Fundamental of Information Technology”, Majestic Books.			
Reference Book	Alexis Leon, Mathews Leon,” Fundamental of Information Technology”,			
	S. K Bansal, “Fundamental of Information Technology”.			
	Bhardwaj Sushil Puneet Kumar, “Fundamental of Information Technology”			
	GG WILKINSON, “Fundamentals of Information Technology”, Wiley-Blackwell			
E-Reference	https://testbook.com/learn/computer-fundamentals			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs		K Level	Learning Outcomes (LO1-LO15)
	CO1	Recall and explain the fundamental concepts of computers, characteristics, generations, classifications, applications, limitations, and the basic organization of computer systems including input and output devices.	K1 & K2	LO1
	CO2	Apply knowledge of computer hardware, storage devices, software categories, and operating system functions to identify suitable computing solutions for various practical applications.	K3	LO4
	CO3	Analyze the working principles and performance of different computer components, memory systems, software types, and operating system techniques such as multitasking and multiprocessing.	K4	LO5
	CO4	Evaluate the capabilities, limitations, and efficiency of computer systems, storage technologies, software tools, and operating systems in different computing environments.	K5	LO11
	CO5	Design basic algorithms and demonstrate an understanding of procedural and object-oriented programming concepts to develop simple computer-based solutions for real-world	K5 & K6	LO2 LO15

		problems.										
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO 1	PS O2	PSO 3	Mean Score	2.41
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	
	CO2	2	3	2	3	2	2.4	2	3	2	2.3	
	CO3	2	2	3	3	2	2.4	2	2	3	2.3	
	CO4	2	2	2	3	3	2.4	3	2	3	2.6	
	CO5	3	2	3	2	3	2.6	3	3	2	2.6	
	Overall score for PO						2.4	Overall score for PSO		2.42		
	Strongly Correlating (S)						-	3 Marks				
Moderately Correlating (M)						-	2 Marks					
Weakly Correlating (W)						-	1 Mark					
No Correlation (N)						-	0 Mark					
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode – Seminars					

Course Code	U26CST509	Semester V	Year III	Credits	L	T	P	Hrs
Core/ Elective	Course Name Software Engineering			4		6		6
Nature of the Course	Core							
Learning objectives	➤ To Understand the evolving role of software, software process framework, layered technology, and Capability Maturity Model Integration (CMMI).. ➤ To explain various software development process models such as Waterfall, Incremental, RAD, Prototyping, Spiral, and Concurrent models. ➤ To understand the concepts of system analysis and requirement analysis, including analysis modeling, data modeling, data flow diagrams, and data dictionary. ➤ To learn the principles and concepts of software design, including modular design, software architecture, and data design. ➤ To understand software testing techniques including white box testing, black box testing, unit testing, integration testing, validation testing, and system testing.							
Units	Course Contents							
Unit I	The Evolving Role of Software – Software – The changing Nature of Software – Legacy software — A generic view of process– A layered Technology – A Process Framework – The Capability Maturity Model Integration (CMMI) –Product and Process.							
Unit II	Process Models – The Waterfall Model – Incremental Process Models – Incremental Model – The RAD Model – Evolutionary Process Models – Prototyping – The Spiral							

	Model – The Concurrent Development Model			
Unit III	System Analysis -Requirement Analysis-Analysis Modeling Principles-Elements of Analysis Model-Data Modeling- Creating a Data Flow Model-Data Dictionary			
Unit IV	Software Design - Design Principles- Design Concepts- Effective Modular Design-Design Heuristics for Effective Modularity-The Design Model- Software Architecture- Data Design			
Unit V	Software Testing - fundamentals – White Box Testing- Black Box Testing – Unit Testing- Integration Testing- Validation Testing- System Testing			
Question paper Coverage- 100% theory				
Text book	Roger. S. Pressman, Software Engineering - A Practitioner's Approach, 7th Edition, McGraw Hill, 2010.			
Reference Books	Rajib Mall, “Fundamental of Software Engineering “, 3rd edition, PHI, 2009.			
	Naseeb Singh Gill, “Software Engineering: Software reliability, testing and quality, Khanna Book Publishing, 2011.			
E-Reference	https://en.wikipedia.org/wiki/Software_engineering			
	https://www.geeksforgeeks.org/software-engineering/software-engineering/			
	https://www.tutorialspoint.com/software_engineering/index.htm			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs		K Level	Learning Outcomes (LO1-LO15)
	CO1	Explain the concepts of software engineering, software process framework, layered technology, and CMMI.	K1 & K2	LO1
	CO2	Analyze different software development process models used in software engineering.	K3	LO4
	CO3	Apply system analysis techniques including requirement analysis, data modeling, and data flow modeling	K4	LO3, LO5
	CO4	Design software using appropriate design principles, modularity, and architectural concepts	K5	LO11
	CO5	Evaluate software quality using various software testing techniques.	K5 & K6	LO2, LO15
Mapping of Cos with Pos&	Programme Outcomes		Programme Specific Outcomes	Mapping Score of Cos with POs & PSOs

PSOs	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02
	CO1	3	2	2	2	1	2.0	3	2	2	2.3	
	CO2	2	3	2	3	1	2.2	2	3	1	2.0	
	CO3	2	2	3	1	2	2.0	2	2	2	2.0	
	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
	Weakly Correlating (W)						-	1 Mark				
	No Correlation (N)						-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam					
							Integrated Mode- seminars					

Course Code	U26CST510	Semester V	Year III	Credits	L	T	P	Hrs
Core / Elective	Course Name Artificial Intelligence & Machine Learning			4		6		6
Nature of the Course	Elective							
Learning objectives	➤ To summarize the basics of AI and Machine learning. ➤ To understand different search methods in AI ➤ To introduce the basic concepts and techniques of machine learning and the need for Machine learning techniques for real world problem ➤ To analyze the various logics and applications of Machine Learning							
Units	Course Contents							
Unit I	Definition: Artificial intelligence meaning- The AI problems – The underlying assumption – What is an AI Techniques? – The level of the model. Problems, problem spaces, and search: Defining the system – problem characteristics – production system characteristics.							
Unit II	Heuristic search techniques: Heuristic search techniques: Generate and Test – Hill climbing – Best –first search – Problem reduction – Constraint satisfaction – Means –ends analysis.							
Unit III	Predicate logic: Using predicate logic: Representing simple facts in logic – Representing instance and ISA relationships – computable functions and predicates resolution – natural deduction.							
Unit IV	Machine-Learning: Introduction. Machine Learning Systems, Forms of Learning: Supervised and Unsupervised Learning, reinforcement – theory of learning – feasibility of learning – Data Preparation– training versus testing and split.							
Unit V	Supervised Learning: Regression: Linear Regression, multi linear regression, Polynomial Regression, logistic regression, Non-linear Regression, Model evaluation methods.							
Question paper Coverage- 100% theory								

Text book	1. Elaine rich, Kevin Knight, Shiva shankar B Nair-Artificial Intelligence –Tata Mc Graw Hill 3rd Edition, 2011. 2.MACHINE LEARNING An Algorithmic Perspective 2 nd Edition, Stephen Marsland, 2015, by Taylor & Francis Group, LLC.												
Reference Books	1. StuartRussell -ArtificialIntelligence:AModern Approach-Pearson3rd Edition, 2013. 2. MishraR.B.-ArtificialIntelligence-PrenticeHallof India2010. 3. Introduction to Machine Learning, Second Edition, Ethem Alpaydın, the MIT Press, Cambridge, Massachusetts,London,England.												
E-Reference	https://www.w3schools.com/ai/ai_what.asp https://www.geeksforgeeks.org/artificial-intelligence/artificial-intelligence/ https://www.geeksforgeeks.org/machine-learning/machine-learning/												
Course learning outcomes	On successful completion of the course, the students will be able to												
	COs											K Level	Learning Outcomes (LO1-LO15)
	CO1	Learn about the artificial intelligence problem and its characteristics.										K1 & K2	LO1
	CO2	Demonstrate the fundamental soft heuristic search techniques and reasoning for problem solving										K3	LO4
	CO3	Understand the problem-solving using predicates										K4	LO3, LO5
	CO4	Apply Machine learning techniques in the design of computer systems.										K5	LO11
	CO5	To differentiate between various categories of ML algorithms										K5 & K6	LO2, LO15
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.0		
	CO3	2	2	3	1	2	2.0	2	2	2	2.0		

	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.04	
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
	Weakly Correlating (W)						-	1 Mark				
	No Correlation (N)						-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology Blended Learning, Participative Learning							Assessment Types					
							Written Mode – Class Test, Home Assignment, Exam					
							Integrated Mode - seminars					

Course Code	U26CST511	Semester V	Year III	Credits	L	T	P	Hrs
Core / Elective	Course Name Operating System			3		5		5
Nature of the Course	Elective							
Learning objectives	➤ To Explain the fundamental concepts of operating systems including process management, memory management, file systems, and computer system structures. ➤ To Analyze and compare various CPU scheduling algorithms, process synchronization mechanisms, and deadlock handling techniques to determine their efficiency and suitability.. ➤ To Apply memory management techniques such as paging, segmentation, virtual memory, and page replacement algorithms to solve system-level problems. ➤ To Design and evaluate file system structures, directory organizations, disk scheduling methods, and allocation strategies for efficient storage management. ➤ To Identify and resolve issues related to process coordination, resource allocation, deadlocks, and system performance using appropriate operating system concepts.							
Units	Course Contents							
Unit I	Introduction: What is an operating system? – Mainframe systems–Desktop systems. Operating System Structures: System components – Operating system services. Processes: Process Concept – Process Scheduling – Operations on processes – Cooperating processes.							
Unit II	CPU Scheduling: Basic concepts – Scheduling criteria – Scheduling algorithms: First Come First Served Scheduling – Shortest Job First Scheduling – Priority Scheduling – Round Robin Scheduling. Process Synchronization: Background – The Critical-Section Problem – Semaphores.							
Unit III	Deadlocks: System model – Deadlock Characterization – Methods for handling Deadlocks - Deadlock prevention– Deadlock avoidance, Deadlock detection – Recovery from deadlock. Memory Management: Background – Swapping – Contiguous memory Allocation– Paging (Basic method, Protection)–Segmentation.							
Unit IV	Virtual Memory: Background – Demand paging- Page replacement. File-System Interface: Directory structure: single Level Directory – Two Level Directory – Tree							

	Structured Directories. File-System Implementation: Directory implementation – Allocation methods (Contiguous, Linked and Indexed Allocation methods).			
Unit V	Computer System Structures: Computer System operation- I/O Structure – Storage Structure. Mass-Storage Structure: Disk structure – Disk scheduling, Disk management, Swap space management.			
Question paper Coverage- 100% theory				
Text book	Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts, Windows XP Update, 6thEdition. Wiley India (P.) Ltd., 2007.			
Reference Books	Operating System: Internals and Design Principles, William Stallings, Seventh Edition, Prentice-Hall of India, 2012.			
	Operating System Concepts Essentials , Abraham Silberschatz , Peter Baer Galvin C. Greg Gagne , Second Edition, John Wiley & Sons, Inc, 2011			
	Modern Operating Systems , Fourth Edition , Andrew S. Tanenbaum Herbert BosVrijeUniversiteit Amsterdam, The Netherlands, by Pearson Education, Inc., 2008			
E-Reference	https://en.wikipedia.org/wiki/Operating_system			
	https://www.geeksforgeeks.org/operating-systems/operating-systems/			
	https://w3schoolsua.github.io/hyperskill/operating-systems_en.html			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs		K Level	Learning Outcomes (LO1-LO15)
	CO1	Describe the concepts of process, deadlocks, memory management, virtual memory, file system and I/O systems, examine computer system structures .	K1 & K2	LO1
	CO2	Outline the process and memory management policies, explain file system, disk and I/O systems.	K3	LO4
	CO3	Identify memory, disk and swap space management and I/O systems, solve the problems to achieve process synchronization.	K4	LO3, LO5
	CO4	Explain how the file systems are implemented, classify CPU scheduling and Disk scheduling, examine deadlocks.	K5	LO11

	CO5	Measure process scheduling, summarize paging and segmentations, assess page replacement algorithms and disk scheduling algorithms.						K5 & K6		LO2, LO15			
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.02	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.0		
	CO3	2	2	3	1	2	2.0	2	2	2	2.0		
	CO4	2	1	3	2	2	2.0	3	2	3	2.6		
	CO5	2	2	2	1	2	1.8	2	1	1	1.3		
	Overall score for PO						2.0	Overall score for PSO			2.04		
	Strongly Correlating (S)							-					3 Marks
	Moderately Correlating (M)							-					2 Marks
Weakly Correlating (W)							-					1 Mark	
No Correlation (N)							-					0 Mark	
Teaching–Learning & Assessment Framework													
Teaching Methodology							Assessment Types						
Blended Learning, Participative Learning							Written Mode – Class Test, Home Assignment, Exam Integrated Mode - seminars						

[illegible]

9.	Write an R program to implement hierarchical clustering .			
10.	Write an R program to perform association rule mining using Apriori algorithm .			
11.	Write an R program to implement linear regression model .			
12.	Write an R program to implement logistic regression model .			
Question paper Coverage - 100% Practical				
Text book	Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data -by EMC Education Services – First Edition – 2015 – Wiley Publications.			
Reference Books	Michael Minelli, Michelle Chambers, and AmbigaDhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley, 2013.			
	Eric Sammer, "Hadoop Operations", O'Reilley, 2012.			
	Sadalage, Pramod J. “NoSQL distilled”, 2013.			
	Michael Minelli, Michelle Chambers, and AmbigaDhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley, 2013.			
E-Reference	https://www.coursera.org/browse/data-science			
	https://www.r-project.org/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	On completion of this course, students will	K Level	Learning Outcomes (LO1-LO15)
	CO1	Create and manipulate data structures in R for data analysis tasks.	K3	LO1,LO2
	CO2	Perform exploratory data analysis and data visualization using R.	K3	LO2,LO3
	CO3	Apply clustering and association rule mining techniques for analyzing datasets.	K4	LO4
	CO4	Implement regression models for predictive data analysis.	K4	LO4,LO5
	CO5	Develop classification models using machine learning techniques in R.	K5	LO5
Mapping of Cos with Pos&	Programme Outcomes	Programme Specific Outcomes	Mapping Score of Cos with POs & PSOs	

PSOs	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.03
	CO1	3	2	2	2	1	2.0	3	2	2	2.3	
	CO2	2	3	2	3	1	2.2	2	3	1	2.0	
	CO3	2	2	3	1	2	2.0	2	2	2	2.0	
	CO4	2	1	3	2	2	2.0	3	2	3	2.6	
	CO5	2	2	2	1	2	1.8	2	1	1	1.3	
	Overall score for PO						2.0	Overall score for PSO			2.06	
	Strongly Correlating (S)							-	3 Marks			
	Moderately Correlating (M)							-	2 Marks			
	Weakly Correlating (W)							-	1 Mark			
No Correlation (N)							-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology							Assessment Types					
Blended Learning, Participative Learning							Practical Mode – Lab Work					

[illegible]

[illegible]

Teaching Methodology: Experiential learning, Problem Solving and Debugging Sessions, Activity-Based Learning, Continuous Practice using Validation, Java Script ,CSS & HTML.	Assessment Types: Practical Mode: Lab Assignment Submission, Programming Exercises, Model Practical Exam.

Course Code	U26CSE51B	Semester V	Year III	Credits	L	T	P	Hrs
Core/ Elective	Course Name Mobile Application Development Lab			3	-	-	5	5
Nature of the Course	Core							
Learning objectives	➤ To develop basic Android applications using standard UI components. ➤ To design interactive mobile application interfaces such as login pages, radio buttons, and text inputs. ➤ To implement mobile features like text-to-speech, SMS, and timers. ➤ To develop simple mobile games and event-driven applications. ➤ To create database-driven mobile applications and integrate external services like Google Sheets							
S.No	List of Programmes							
1	Development of Hello World Application							
2	Design an Android Application for Login Page							
3	Design an Android Application using radio Buttons							
4	Create an Android Application that takes the name from a text box and shows hello Message along with name entered in textbox, when user clicks the Ok Button							
5	Create an Android Application for text to speech Conversion							
6	Design an Android Application send SMS using Internet							
7	Create an Android Application for Counter timer							
8	Design an Android Application for game development(tic tac toe)							
9	Create a use registration application that stores the 65 user details in a database table							
10	Send data to google sheets using Android Application							
Question paper Coverage - 100% practical								
Text book	1. Simone Alessandria, Flutter Projects: A Practical Project based guide to building real-world cross-platform mobile applications and games, packt publications. 2. Carmine Zaccagnino, programming Flutter: Native, Cross platform Apps the easy way, Pact Publishing							
Reference Book	1. GergelyOrosz, Building Mobile Applications at Scale: 39 Engineering Challenges							

	2. Souvik Biswas & Codemagic, Flutter Libraries we love 3. ED Freitas, Daniel Jebaraj, Flutter Succinctly											
E-Reference	https://developer.android.com/courses											
Course learning outcomes	On successful completion of the course, the students will be able to											
	COs	Course Outcomes							K Level	Learning Outcomes (LO1-LO15)		
	CO1	Recall and explain the fundamental concepts of Android application development, Android Studio environment, user interface components, activities, layouts, and event handling techniques through the development of basic mobile applications.							K1 & K2	LO1		
	CO2	Apply Android programming concepts to design and develop applications using text boxes, radio buttons, login pages, counter timers, text-to-speech conversion, and SMS functionalities.							K3	LO4		
	CO3	Analyze Android application requirements and integrate appropriate user interface controls, database connectivity, internet services, and event-driven programming techniques for mobile application development.							K4	LO5		
	CO4	Evaluate the performance, usability, and functionality of Android applications such as tic-tac-toe game development, user registration systems, and Google Sheets data integration.							K5	LO11		
	CO5	Design and develop complete Android applications with interactive interfaces, database support, internet connectivity, and real-time data management to solve practical mobile computing problems.							K5 & K6	LO2 LO15		
Mapping	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	

of Cos with Pos& PSOs							e					2.43
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	
	CO2	2	3	2	3	2	2.4	2	3	2	2.3	
	CO3	2	2	3	3	2	2.4	2	2	3	2.3	
	CO4	2	2	2	3	3	2.4	3	2	3	2.6	
	CO5	3	3	3	2	3	2.8	3	3	3	3.0	
	Overall score for PO						2.36	Overall score for PSO			2.50	
	Strongly Correlating (S) - 3 Marks Moderately Correlating (M) - 2 Marks Weakly Correlating (W) - 1 Mark No Correlation (N) - 0 Mark											
Teaching–Learning & Assessment Framework												
Teaching Methodology:						Assessment Types:						
• Experiential learning & Problem Solving						• Lab Assignment Submission & model Practical Exam.						

Course Code	U26CSE51C	Semester V	Year III	Credits	L	T	P	Hrs
Core/ Elective	Course Name IoT Applications Lab			3			3	4
Nature of the Course	Department Specific Elective							
Learning objectives	➤ Familiarize themselves with Arduino/Raspberry Pi hardware and software environment. ➤ Interface sensors, actuators and communication modules with Arduino/Raspberry Pi. ➤ Develop IoT applications using embedded programming techniques. ➤ Implement cloud-based IoT applications using ThingSpeak. ➤ Design and test real-time IoT solutions for practical applications.							
	List of Programs							
	1. Familiarization with Arduino/Raspberry Pi and perform necessary software installation. 2. To interface LED/Buzzer with Arduino/Raspberry Pi and write a program to turn ON LED for 1 sec after every 2 seconds. 3. To interface Push button/Digital sensor (IR/LDR) with Arduino/Raspberry Pi and write a program to turn ON LED when push button is pressed or at sensor detection 4. To interface DHT11 sensor with Arduino/Raspberry Pi and write a program to print temperature and humidity readings. 5. To interface motor using relay with Arduino/Raspberry Pi and write a program to turn ON motor when push button is pressed. 6. To interface OLED with Arduino/Raspberry Pi and write a program to print temperature and humidity readings on it. 7. To interface Bluetooth with Arduino/Raspberry Pi and write a program to send sensor data to smartphone using Bluetooth. 8. To interface Bluetooth with Arduino/Raspberry Pi and write a program to turn LED ON/OFF when '1'/'0' is received from smartphone using Bluetooth. 9. Write a program on Arduino/Raspberry Pi to upload temperature and humidity data to thingspeak cloud. 10. Write a program on Arduino/Raspberry Pi to retrieve temperature and humidity data from thingspeak cloud AI Tools							

Question paper Coverage- 100% Practical				
Text book	1. Adrian McEwen and Hakim Cassimally, <i>Designing the Internet of Things</i>, Wiley Publications. 2. ArshdeepBahga& Vijay Madisetti, <i>Internet of Things – A Hands-on Approach</i>, Universities Press.			
Reference Books	1. Raj Kamal, <i>Internet of Things – Architecture and Design Principles</i> , McGraw Hill.			
	2. David Hanes et al., <i>IoT Fundamentals</i> , Cisco Press.			
	3. Perry Lea, <i>Internet of Things for Architects</i> , Packt Publishing.			
	4. CunoPfister, <i>Getting Started with the Internet of Things</i> , O'Reilly.			
E-Reference	1. https://www.arduino.cc/			
	2. https://www.raspberrypi.org/			
	3. https://thingspeak.mathworks.com/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1–LO15)
	CO1	Demonstrate the installation and configuration of Arduino/ Raspberry Pi development environment.	K2	LO1, LO2, LO3
	CO2	Develop embedded programs to interface sensors and actuators with Arduino/Raspberry Pi.	K3	LO4, LO5, LO6
	CO	Implement real-time IoT applications using display devices, Bluetooth and wireless communication.	K3	LO7, LO8, LO9
	CO4	Develop IoT applications for cloud data acquisition, storage and retrieval using ThingSpeak.	K4	LO10, LO11, LO12
	CO5	Design, test and validate complete IoT solutions for real-world applications.	K5	LO13, LO14, LO15
	Programme Outcomes		Programme Specific Outcomes	Mapping Score of Cos with

Mapping of Cos with Pos& PSOs												POs & PSOs
	COs	PO1	PO 2	PO 3	PO 4	PO5	Mea n Scor e	PS O1	PS O2	PSO3	Mea n Scor e	2.52
	CO1	3	2	2	2	1	2.0	3	2	2	2.33	
	CO2	3	3	2	3	2	2.6	3	3	2	2.67	
	CO3	2	3	3	3	2	2.6	2	3	2	2.33	
	CO4	2	2	3	3	2	2.4	2	3	3	2.67	
	CO5	2	2	3	3	3	2.6	3	3	3	3.00	
	Overall score for PO						2.44	Overall score for PSO			2.60	
	Strongly Correlating (S) - 3 Marks Moderately Correlating (M) - 2 Marks Weakly Correlating (W) - 1 Mark No Correlation (N) - 0 Mark											
Teaching–Learning & Assessment Framework												
Teaching Methodology Blended Learning, Participative Learning							Assessment Types Practical Mode – Lab Work					

Course	U26CSS505	Semester V	Year III	credits	L	T	P	Hrs
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Code								
Core/ Elective	Course Name PROMPT ENGINEERING			2		2		2
Nature of the Course	SKILL ENHANCEMENT COURSE							
Learning objectives	➤ Understand the fundamentals of Large Language Models (LLMs), tokenization, and prompt engineering concepts. ➤ Learn the structure, design principles, and core prompting techniques for developing effective prompts. ➤ Apply advanced prompting strategies such as Chain-of-Thought (CoT), Tree-of-Thought (ToT), and multi-path reasoning to solve complex problems. ➤ Optimize and evaluate prompts using prompt refinement techniques, parameter tuning, and evaluation metrics. ➤ Develop AI-assisted software development solutions using prompt engineering for code generation, debugging, documentation, and test case creation.							
Units	Course Contents							
Unit I	Foundations of Language Models and Prompt Engineering: Language Models: Behaviour, capabilities, and limitations of LLMs- Tokenization: Input-output relationships, token economics, and computational considerations. Introduction to Prompt Engineering: Scope, importance, and real-world applications Core Components of Prompts: Instructions, context, examples, constraints							
Unit II	Prompt Structure, Design Principles, and Core Techniques - Prompt Content: Static and Dynamic Content- Core Prompting Techniques: Zero-shot prompting, Few-shot prompting, Template-based prompting, Role-based and persona prompting.							
Unit III	Advanced Reasoning and Problem-Solving Strategies:Chain-of-Thought (CoT) Prompting: Fundamentals of step-by-step reasoning,Zero-shot CoT and Few-shot CoT- Advanced Prompting Strategies: Tree of Thoughts (ToT), Multi-path reasoningand decision trees.							
Unit IV	Prompt Optimization and Evaluation: Prompt Optimization: Iterative refinement, A/B testing methodologies, andparameter tuning (temperature, top-p). Evaluation Metrics: Quantitative assessment: accuracy, relevance, and coherence.Qualitative assessment and the role of human evaluation.							
Unit V	Software Development Applications: Code generation and completion prompts-Debugging assistance and code review automation- Documentation and commentgeneration-Test case creation and validation.							
Question paper Coverage - 100% theory								
Text book	Prompt Engineering for Large Language Models: Theory and Practice, John Berryman and Albert Ziegler, Istedition,2024, O'Reilly Media.							

Reference Book	1. Advanced Prompt Design: Techniques for Modern AI Systems, Jennifer Liu and David Park,2023. 2. Conversational AI and Prompt Engineering Fundamentals, OpenAI Research Team,2024 3. Practical Prompt Engineering: From Basics to Industry Applications, Thomas Anderson and Lisa Zhang,2023											
E-Reference	1. https://platform.openai.com/docs/guides/prompt-engineering 2. https://docs.anthropic.com/en/docs/build-with-claude/prompt-engineering/overview 3. https://huggingface.co/docs/transformers/en/tasks/prompting 4. https://github.com/dair-ai/Prompt-Engineering-Guide											
Course learning outcomes	On successful completion of the course, the students will be able to											
	COs	Course Outcomes									K Level	Learning Outcomes (LO1-LO15)
	CO1	Explain the concepts of Large Language Models, tokenization, and the fundamentals of prompt engineering.									K1 &K2	LO1
	CO2	Design effective prompts using zero-shot, few-shot, role-based, and template-based prompting techniques.									K3	LO4
	CO3	Apply advanced reasoning techniques such as Chain-of-Thought and Tree-of-Thought prompting to solve complex tasks.									K4	LO5
	CO4	Evaluate and optimize prompts using refinement strategies, A/B testing, parameter tuning, and evaluation metrics.									K5	LO11
	CO5	Develop AI-assisted software engineering solutions using prompt engineering for code generation, debugging, documentation, and testing.									K5 & K6	LO2 LO15
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs&PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	

	CO2	2	3	2	2	2	2.2	2	3	2	2.3		
	CO3	2	3	3	3	2	2.6	3	2	3	2.6		
	CO4	2	3	2	3	3	2.6	3	3	2	2.6		
	CO5	3	3	3	2	3	2.8	3	3	3	3.0		
	Overall score for PO						2.4	Overall score for PSO			2.56		
	Strongly Correlating (S) - 3 Marks												
	Moderately Correlating (M) - 2 Marks												
Weakly Correlating (W) - 1 Mark													
No Correlation (N) - 0 Mark													
Teaching–Learning & Assessment Framework													

Course Code	U26CST613	Semester VI	Year III	Credits	L	T	P	Hrs
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Core/ Elective	Core: Computer Networks		4		6		6
Nature of the Course	Core						
Learning objectives	➤ Know the concept of Data communication and Computer networks. ➤ Understand the concept of Wireless communication and Error detection & correction. ➤ Compare the characteristics of Routing and Congestion control algorithms. ➤ Illustrate the connection management in Transport Layer. ➤ Implement routing algorithms in solving real world problems						
Units	Course Contents						
Unit I	Introduction: Network Hardware - Network software - reference models. Physical Layer: guided transmission media.						
Unit II	The Data Link Layer: Data link layer design issues - error detection and correction - elementary data link protocols - sliding window protocols – The Medium Access Control Sub layer: The channel allocation problem - Multiple access protocols.						
Unit III	The Network Layer: Network layer design issues - routing algorithms: shortest path algorithm - flooding - distance vector routing - link state routing - hierarchical routing - broadcast routing - multicast routing - Congestion Control Algorithms: approaches to congestion control – Traffic aware routing – admission control – traffic throttling – load shedding.						
Unit IV	The Transport Layer: Transport layer service: services provided to upper layers - transport service primitives - Elements of transport protocols: addressing – connection establishment - connection release - error control and flow control – The Internet Transport Protocols: UDP: Introduction to UDP - Internet Transport Protocols: TCP: Introduction to TCP - The TCP protocol - TCP segment header - TCP connection establishment – connection release - TCP sliding window.						
Unit V	The Application Layer: DNS: The DNS Name space – Domain resource records – Name servers - Electronic Mail: Architecture and services – The user agent – Message formats – Message Transfer – Final Delivery.						
Question paper Coverage - 100% theory							
Text book	Andrew S.Tanenbaum&DavidJ.Wetherall, ComputerNetworks, 5 th Edition, Prentice Hall, 2011..						
Reference Book	B.A.Forouzan, Data Communications and Networking, 4 th Edition, Tata McGraw Hill, 2017.						
	F. Hal sall, Data Communications, Computer Networks and Open Systems, Pearson Education, 2008						
	D. Bertsekas and R. Gallager, Data Networks, 2 nd Edition, PHI, 2008.						
	Lamarca, Communication Networks, Tata McGraw Hill, 2002.						
E- Reference	https://en.wikipedia.org/wiki/Computer_network https://citationsy.com/styles/computer-networks						
Course learning outcomes	On completion of this course, students will be able						
	COs				K Level	Learning Outcomes (PO1-PO6)	

	CO1	To Understand the basics of Computer Network architecture, OSI and TCP/IP reference models						K1 & K2		PO1		
	CO2	To gain knowledge on Telephone systems using wireless network						K3		PO1, PO2		
	CO3	To understand the concept of MAC						K4		PO4, PO6		
	CO4	To analyze the characteristics of Routing and Congestion control algorithms						K5		PO4, PO5, PO6		
	CO5	To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS						K5 & K6		PO3, PO4		
Mapping of Cos with Pos& PSOs	Programme Outcomes						Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO 1	PSO 2	PSO 3	Mean Score	2.41
	CO1	3	2	1	1	2	1.8	3	2	2	2.3	
	CO2	2	3	2	3	2	2.4	2	3	2	2.3	
	CO3	2	2	3	3	2	2.4	2	2	3	2.3	
	CO4	2	2	2	3	3	2.4	3	2	3	2.6	
	CO5	3	2	3	2	3	2.6	3	3	2	2.6	
	Overall score for PO					2.4	Overall score for PSO			2.42		
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
Weakly Correlating (W)						-	1 Mark					
No Correlation (N)						-	0 Mark					
Teaching–Learning & Assessment Framework												
Teaching Methodology: Experiential learning,Blended Learning, Participative Learning,Seminar Presentations						Assessment Types: Written Mode: Unit Tests, Assignment Submission, Model Examination, Programming Exercises Integrated Mode- Seminar Presentation.						

Course Code	U26CST61 4	Semester VI	Year III	Credits	L	T	P	Hrs
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Core / Elective	Course Name Digital Image Processing	4		6		6
Nature of the Course	Elective					
Learning objectives	□ Understand the fundamentals of digital images and image processing systems. □ Apply image enhancement techniques in spatial and frequency domains. □ Perform image restoration, segmentation, and compression. □ Understand image representation, feature extraction, and morphological operations. □ Gain introductory knowledge of image analysis and practical applications.					
Units	Course Contents					
Unit I	Fundamentals of Digital Image Processing: Origins of Digital Image Processing-Fundamental Steps in Digital Image Processing-Components of an Image Processing System-Elements of Visual Perception-Image Sensing and Acquisition-Image Sampling and Quantization-Basic Relationships Between Pixels.					
Unit II	Intensity Transformations, Spatial Filtering and Frequency Domain Processing: Some Basic Intensity Transformation Functions- Histogram Processing - Fundamentals of Spatial Filtering - Smoothing Spatial Filters - Sharpening Spatial Filters					
Unit III	Image Restoration and Reconstruction: Image Degradation/Restoration Process- Noise Models-Restoration in the Presence of Noise-Periodic Noise Reduction-Inverse Filtering- Wiener Filtering-					
Unit IV	Image Compression : Fundamentals of Image Compression-Redundancy-Fidelity Criteria-Lossless Compression.					
Unit V	Image Segmentation : Fundamentals of Segmentation-Point, Line and Edge Detection-Edge Linking-Thresholding.					
Question paper Coverage- 100% theory						
Text book	Digital Image Processing, Rafael C. Gonzalez and Richard E. Woods, Pearson, 4th Edition (2018).					
Reference Books	1.Fundamentals of Digital Image Processing, Anil K. Jain, Prentice Hall, 1989.					
	2. Digital Image Processing, William K. Pratt,John Wiley & Sons, 4th Edition, 2007.					
	3.Digital Image Processing and Analysis,Scott E Umbaugh, CRC Press (Taylor & Francis Group), 3rd Edition, 2017.					
E-Reference	1. <u>National Programme on Technology Enhanced Learning (NPTEL) – Digital Image Processing</u>					
	2. Massachusetts Institute of Technology – MIT OpenCourseWare					

Course learning outcomes	On successful completion of the course, the students will be able to												
	COs									K Level	Learning Outcomes (LO1-LO15)		
	CO1	Explain the fundamentals of digital image processing, image formation, sampling, quantization, and pixel relationships.								K2	LO2		
	CO2	Apply intensity transformation, histogram processing, and spatial filtering techniques to enhance digital images.								K3	LO3		
	CO3	Analyze image degradation models and apply appropriate image restoration techniques for noise removal.								K4	LO4		
	CO4	Apply image segmentation techniques for extracting meaningful regions and features from digital images								K3	LO3		
	CO5	Analyze image compression techniques and compare lossless and lossy compression methods for efficient image storage and transmission.								K4	LO4		
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO 1	PO2	PO 3	PO 4	PO5	Mean Score	PSO 1	PSO 2	PS O3	Mean Score	2.02	
	CO1	3	2	-	-	1	2.0	3	2	2	2.3		
	CO2	3	3	2	2	3	2.6	2	3	1	2.0		
	CO3	3	3	2	3	3	2.8	2	2	2	2.0		
	CO4	2	3	3	3	3	2.8	3	2	3	2.6		
	CO5	2	3	2	2	3	2.4	2	1	1	1.3		
	Overall score for PO						2.0	Overall score for PSO			2.04		
	Strongly Correlating (S)							-	3 Marks				
	Moderately Correlating (M)							-	2 Marks				
	Weakly Correlating (W)							-	1 Mark				
	No Correlation (N)							-	0 Mark				

Teaching–Learning & Assessment Framework	
Teaching Methodology Blended Learning, Participative Learning	Assessment Types Written Mode – Class Test, Home Assignment, Exam Integrated Mode - seminars

Course Code	U26CSP615	Semester VI	Year III	Credits	L	T	P	Hrs
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Core/ Elective	Course Name Digital Image Processing Lab		3			6	6
Nature of the Course	Core						
Learning objectives	☐ Interpret digital images as matrices and understand pixel relationships, sampling, and quantization. ☐ Implement spatial domain techniques such as intensity transformations and histogram processing. ☐ Apply Fourier transform-based filtering techniques for image enhancement. ☐ Apply noise models and restoration techniques to improve degraded images. ☐ Use edge detection, thresholding, and region-based methods for image segmentation.						
	List of Programs						
	1. Read and display Gray scale image. 2. Display of Color Image 3. Convert RGB image to grayscale. 4. Perform image resizing and cropping. 5. Perform image addition and subtraction. 6. Implement image negative transformation. 7. Apply log transformation to an image and observe the result. 8. Perform gamma correction (power-law transformation) with different gamma values. 9. Apply mean filter to remove noise from an image and apply Gaussian filter for image smoothing. 10. Color space conversion						
Question paper Coverage- 100% Practical							
Text book	Digital Image Processing Using MATLAB, Rafael C. Gonzalez, Richard E. Woods, Steven L. Eddins, McGraw-Hill Education, 2nd Edition (2009).						
Reference Books	Digital Image Processing and Analysis with MATLAB,Scott E Umbaugh, CRC Press (Taylor & Francis), 3rd Edition (2017).						
E- Reference	1. National Programme on Technology Enhanced Learning (NPTEL) – Digital Image Processing						
	2. Massachusetts Institute of Technology – MIT OpenCourseWare						
Course learning outcomes	On successful completion of the course, the students will be able to						
	COs			K Level		Learning Outcomes	
	CO1	Perform basic image operations such as reading, displaying, and manipulating digital images using MATLAB		K3		LO3	

	CO2	Apply intensity transformations and histogram-based techniques for image enhancement.						K3		LO3			
	CO3	Implement spatial and frequency domain filtering techniques for image smoothing and sharpening.						K3		LO3			
	CO4	Analyze and implement image restoration techniques using noise models and filtering methods.						K4		LO4			
	CO5	Apply segmentation and edge detection techniques for extracting meaningful image features.						K3		LO3			
Mapping of Cos with Pos& PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO 3	PO 4	PO5	Mean Score	PS O1	PS O2	PS O3	Mean Score	2.03	
	CO1	3	2	2	2	1	2.0	3	2	2	2.3		
	CO2	2	3	2	3	1	2.2	2	3	1	2.0		
	CO3	2	2	3	1	2	2.0	2	2	2	2.0		
	CO4	2	1	3	2	2	2.0	3	2	1	2.0		
	CO5	2	2	2	1	2	1.8	3	2	1	2.0		
	Overall score for PO						2.0	Overall score for PSO		2.06			
	Strongly Correlating (S)							-		3 Marks			
	Moderately Correlating (M)							-		2 Marks			
	Weakly Correlating (W)							-		1 Mark			
	No Correlation (N)							-		0 Mark			
Teaching–Learning & Assessment Framework													
Teaching Methodology							Assessment Types						
Blended Learning, Participative Learning							Practical Mode – Lab Work						

SYLLABUS FOR COMMON COURSES

Semester-1

Part – 1 Tamil



MOTHER TERESA WOMEN'S UNIVERSITY
KODAIKANAL – 624101



**DEPARTMENT OF -TAMIL STUDIES
PART – I TAMIL
(All UG Courses and Integrated Courses)**

Curriculum Framework, Syllabus, and Regulations

(Syllabus under Choice Based Credit System –CBCS)



**(For the candidates to be admitted from the Academic Year 2026-2027
onwards)**

பொதுத்தமிழ் -1

இக்கால இலக்கியம்

Course Code	U26TAL101	Semester I	Year I	credits	L	T	P	Hrs
Part-1 Tamil	இக்கால இலக்கியம் .			3	y		-	6
Nature of the Course	Employability / Skill enhancement / Entrepreneurship							
Learning objectives	SEMESTER-1 • இக்கால இலக்கியங்களை அறிமுகம் செய்தல், அதன் தோற்றம், வளர்ச்சி, வரலாற்றினை அறியும் திறனைப் பெறுவர். மரபுக்கவிதை, புதுக்கவிதையின் தோற்றம், வளர்ச்சி, வரலாற்றினை அறிதல் . • மரபுக்கவிதை, புதுக்கவிதையின் இலக்கண அமைப்பைப் புரிந்து கொள்வர். சிறுகதையின் தோற்றம், வளர்ச்சி, வரலாற்றினைத் தெரிந்து கொள்வர். சிறுகதையின் இலக்கியச் சிறப்பினை உணர்வர். • தமிழ்ப் புதினம், நாடக, உரைநடை இலக்கியத்தின் தோற்றம், வளர்ச்சி, வரையறை மற்றும் நாடகக்கலையின் சமூகப் பங்களிப்பைப் புரிந்துகொள்ளுவர். தமிழ்ப் புதினம் ,நாடக, உரைநடையின் இலக்கியச் சிறப்புகள் , வகைகளை நினைவு கூர்தல்.							
Units	Course Contents							

Unit - I	மரபுக்கவிதையும் புதுக்கவிதையும்
	மரபுக்கவிதை, புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் கற்பிக்கப்பட வேண்டும். மரபுக்கவிதை பாரதியார் கவிதைகள் ஞானப் பாடல்கள் (1-25) முழுவதும். பாரதிதாசன் கவிதைகள்- தமிழ் (1-10) பாடல்கள். புதுக்கவிதை வைரமுத்து கவிதை இந்தப் பூக்கள் விற்பனைக்கு அல்ல - ஐந்துபெரிது ஆறுசிறிது. மு.மேத்தா தேசப்பிதாவுக்கு ஒரு தெருப் பாடகனின் அஞ்சலி. சிற்பி பாலசுப்ரமணியம் ஒரு கிராமத்து நதி-ஓடுஓடு சங்கிலி. இரா. மீனாட்சி உதய நகரிலிருந்து - மழையும் நானும். சல்மா - நினைவுத்துயர். அப்துல்ரகுமான் ஹைக்கூ - கண்ணாடி, நிழல், ஊசி. கண்ணாடி 1. உடைந்த பிறகுதான் பல முகம் காட்டுகிறது... கண்ணாடி! 2. என்னை அப்படியே ஏற்றுக்கொள்கிறது... என் கண்ணாடி! 3. பொய்யே சொல்வதில்லை... ஆனால், வலது கைக்கு இடது கை காட்டுகிறது! 4. இருட்டில் முகமிழந்து போகிறது... கண்ணாடி!

	நிழல் 1. வெளிச்சத்தில் என்னைத் தொடர்கிறது... இருட்டில் என்னைக் கைவிடுகிறது! 2. எத்தனை முயன்றும் மிதிக்க முடிவதில்லை... என் நிழலை! 3. சுவரில் படர்கிறது... ஆனால் சுவரை மறைப்பதில்லை! 4. நண்பனைப் போல கூடி வருகிறது... இரவு வந்ததும் ஒளிகிறது! ஊசி 1. காயங்களைச் தைத்து ஆற்றுகிறது... ஆனால் தன் தலையில் ஒரு துளையோடு! 2. துணியை ஊடுருவிச் செல்கிறது... தையலாகிப் பின் தங்குகிறது நூல் மட்டுமே! 3. கிழியக் கிழியத் தைக்கிறது... தியாகத்தின் கூர்மையான அடையாளம்.
Unit - II	சிறுகதை சிறுகதையின் தோற்றமும் வளர்ச்சியும் கற்பிக்கப்பட வேண்டும். புதுமைப்பித்தன்- சாப விமோசனம். ஜெயகாந்தன் - ஒரு பிடி சோறு. இளசை சுந்தரம் - சாதகப் பறவைகள். சூர்ய காந்தன் -வேட்கை. இராஜம் கிருஷ்ணன் - தனிமை. ஆர்.சுடாமணி - அந்நியர்கள். ஆண்டாள் பிரியதர்ஷினி - மாத்திரை.

	உமா மகேஷ்வரி – அரளிவனம்
Unit - III	உரைநடை,நாடக இலக்கியம் உரைநடை, நாடக இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் கற்பிக்கப்பட வேண்டும். ஏ.கே.செட்டியார் – குடகு. அறிஞர் அண்ணா - நீதி தேவன் மயக்கம். பண்டிதமணி மு.கதிரேசன் செட்டியார் – மண்ணியல் சிறுதேர். ஜெயந்தி நாகராஜன் – புராண நாடகங்கள்.
Unit - IV	புதின இலக்கியம் புதின இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் கற்பிக்கப்பட வேண்டும். ஆண்டாள் பிரியதர்ஷினி - தகனம். சு.சமுத்திரம்-வேரில் பழுத்த பலா.
Unit - V	இலக்கணம் மொழி முதல் எழுத்துக்கள் , மொழி இறுதி எழுத்துக்கள் ,வல்லெழுத்து மிகும், மிகாஇடங்கள், உடம்படுமெய்,ஈரொற்று வரும் இடங்கள், ஒரு,ஓர் வரும் இடங்கள், தான்,தாம் வரும் இடங்கள்.
Question paper Coverage - 100% theory	
Text book	- பாரதியார் கவிதைகள்,பூம்புகார் பதிப்பகம் ,சென்னை,2015. - பாரதிதாசன் கவிதைகள், மணிவாசகர் பதிப்பகம், சென்னை,1998. - இந்தப் பூக்கள் விற்பனைக்கு அல்ல ,வைரமுத்து, திருமகள் பதிப்பகம், சென்னை,2009. - மு.மேத்தா கவிதைகள்,திருமகள் நிலையம், சென்னை, 1974. - ஒரு கிராமத்து நதி ,சிற்பி பாலசுப்ரமணியம்,கோலம் வெளியீடு, பொள்ளாச்சி, 1998. - உதய நகரிலிருந்து, இரா.மீனாட்சி,கபிலன் பதிப்பகம், புதுச்சேரி ,2006. - ஒரு மாலையும் இன்னொரு மாலையும் , சல்மா, காலச்சுவடு பதிப்பகம், நாகர்கோவில், 2000. - அப்துல் ரகுமான் கவிதைகள் தொகுப்பு,அப்துல் ரகுமான்,நேஷனல் பப்ளிஷர்ஸ் , சென்னை,1974. - புதுமைப்பித்தன் சிறுகதைகள், காலச்சுவடு பதிப்பகம், நாகர்கோவில்

	2000. • ஒரு பிடி சோறு, ஜெயகாந்தன், தமிழ்ப்பண்ணை பதிப்பகம், சென்னை, 1958. • சாதகப் பறவைகள் , இளசை சுந்தரம், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2008. • ராஜம் கிருஷ்ணனின் சிறுகதைகள், இராஜம் கிருஷ்ணன், கௌரா பதிப்பகம் சாரதா பதிப்பகம் /, சென்னை, 2016. • வேட்கை, சூர்யகாந்தன் , நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2012. • அந்நியர்கள், ஆர். குடாமணி, காலச்சுவடு பதிப்பகம், சென்னை ,1980. • மாத்திரை, ஆண்டாள் பிரியதர்ஷினி, உயிர்மை பதிப்பகம், சென்னை 2007. • அரளிவனம், உமா மகேஸ்வரி, காலச்சுவடு பதிப்பகம், நாகர்கோவில், 2008. • குடகு, ஏ.கே.செட்டியார், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2014. • நீதி தேவன் மயக்கம் , அறிஞர் அண்ணா, பூம்புகார் பதிப்பகம், சென்னை, 1947. • மண்ணியல் சிறுதேர், பண்டிதமணி மு. கதிரேசன் செட்டியார், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை ,1957. • புராண நாடகங்கள் , ஜெயந்தி நாகராஜன், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை ,2012. • தகனம் , ஆண்டாள் பிரியதர்ஷினி , நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2022. • வேரில் பழுத்த பலா, சு.சமுத்திரம், அறிவுப் பதிப்பகம், சென்னை, 2022. • தொல்காப்பியம்.ச.வே.சுப்பிரமணியம், மணிவாசகர் பதிப்பகம், சென்னை, 2008.
Reference Book	• புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும், வல்லிக்கண்ணன், பாவை பப்ளிகேஷன்ஸ், சென்னை, இரண்டாம் பதிப்பு, 2020. • புதுக்கவிதை ஒரு புதுப்பார்வை, பாலா, அகரம் பதிப்பகம், ஐந்தாம் பதிப்பு, தஞ்சாவூர், 2011. • தமிழ்ச் சிறுகதை வரலாறு, சி.சு.செல்லப்பா, காலச்சுவடு பதிப்பகம், சென்னை, 1980. • தமிழ்ச் சிறுகதை – நேற்றும் இன்றும், ம.திருமலை, (தொகுப்பாசிரியர்), ஐந்திணைப் பதிப்பகம், சென்னை, 1990.

	• தமிழில் சிறுகதையின் தோற்றமும் வளர்ச்சியும், க.சிவதம்பி,தமிழ்ப் புத்தகாலயம் ,சென்னை1980. • தமிழ்ச் சிறுகதை வரலாறு,எம்.வேதசகாயகுமார்,சித்திரிகா பதிப்பகம், திருவனந்தபுரம் ,1979. • புதிய உரைநடை ,மா.இராமலிங்கம்,தமிழ்ப் புத்தகாலயம்,சென்னை,1980. • நாடகக் கலை, அவ்வை டி.கே.சண்முகம், அவ்வை பதிப்பகம், சென்னை,1972. • புதிய நோக்கில் தமிழ் நாடக வரலாறு, முனைவர் கோ.கருணாகரன், நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை,1988. • மேலை நோக்கில் தமிழ்க் கவிதை,ப.மருதநாயகம்,உலகத்தமிழாராய்ச்சி நிறுவனம், தரமணிவெளியீடு, சென்னை,மறுப்பதிப்பு,2001. • நாவல் கலையியல், இராபாலசுப்பிரமணியன்.,உலகத் தமிழாராய்ச்சி நிறுவனம், தரமணிவெளியீடு, சென்னை, மறுப்பதிப்பு,2004. • நாவலும் வாசிப்பும் ஒரு வரலாற்றுப் பார்வை, இரா.ஆவேங்கடாசலபதி , காலச்சுவடு பதிப்பகம், நாகர்கோவில், மறு பதிப்பு,2012. • தமிழ் நாவல்கள் ஒரு மதிப்பீடு,ந.வானமாமலை, நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை,மறுபதிப்பு, 1970. • தமிழ் நாவல் அடிப்படைகள்,எஸ்.தோத்தாத்ரி, சிவகங்கை அகரம் பதிப்பகம், 1980. • நாடக மேடை நினைவுகள், பம்மல் சம்பந்த முதலியார்,உலகத் தமிழாராய்ச்சி நிறுவனம்,தரமணி வெளியீடு,சென்னை,1988.
E-Reference	• Tamil Heritage Foundation- www.tamilheritage.orghttp://www.tamilheritage.org • Tamil virtual University Library- www.tamilvu.org/ library http://www.virtualvu.org/library • Project Madurai - www.projectmadurai.org. • Chennai Library- www.chennailibrary.com . • Tamil Universal Digital Library- www.ulib.prg . • Tamil E-Books Downloads- tamale books downloads. blogspot.com • Tamil Books on line- books.tamil cube.com • Catalogue of the Tamil books in the Library of British Congress archive.org • Tamil novels on line - books.tamilcube.com

Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	இக்கால இலக்கியங்களை அறிதல்.	K1 & K2	LO1
	CO2	இக்கால இலக்கியங்களைப் பயின்று பகுத்து வகை தொகை செய்தல்.	K3	LO4
	CO3	இக்கால இலக்கியங்களில் சிறந்த படைப்புகளைத் திறனாய்தல்	K4	LO5
	CO4	இக்கால இலக்கியங்களைப் பகுத்தாய்ந்து மதிப்பிடல்.	K5	LO11
	CO5	இலக்கிய ஆக்கங்களை ஆய்வு செய்து, தானே புது கவிதை,நாவல்,சிறுகதை,நாடகம் எழுதப் பயிற்சி பெற்றுதல்.	K5 & K6	LO2 LO15 LO3 LO8 LO9

Mapping of Cos with Pos & PSOs	Programme Outcomes						Programme Specific Outcomes			Mapping Score of Cos with POs & PSOs		
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.6
	CO1	3	2	2	2	2	2.2	2	2	2	2	
	CO2	3	3	2	2	2	2.4	2	2	2	2	
	CO3	3	3	2	3	3	2.8	3	3	3	3	

	CO4	3	3	2	3	3	2.8	3	3	3	3	
	CO5	3	3	3	3	3	3	3	3	3	3	
	Overall score for PO				2.6	Overall score for PSO		2.6				
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
	Weakly Correlating (W)						-	1 Mark				
	No Correlation (N)						-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology Experiential learning, Flipped Learning, Blended Learning, Participative Learning					Assessment Types Written mode – exam, class test, assignment Integrated mode – paper presentation / seminar							

Assignment Topics

1. சமகால இலக்கியத்தில் சமூகமாற்றங்களின் பிரதிபலிப்பு.
2. தமிழ் நவீன கவிதைகளில் பெண்களின் குரல் மற்றும் சுயஅடையாளம் .
3. சமகால சிறுகதைகளில் நகர வாழ்க்கையின் தாக்கம்.
4. மின்னணு காலத்தில் தமிழ் இலக்கியத்தில் மாற்றங்கள்.
5. சமகால இலக்கியத்தில் சுற்றுச்சூழல் விழிப்புணர்வு.

Seminar Topics

1. சமகால தமிழ் நாவல்களில் மனிதஉறவுகள் மற்றும் மதிப்புகள்.

2. சமூக ஊடகங்கள் மற்றும் இக்கால இலக்கிய வளர்ச்சி.
3. சமகால இலக்கியத்தில் இளைஞர்களின் சிந்தனை மற்றும் எதிர்காலம்.
4. சமகால இலக்கியம் மற்றும் பன்முக கலாச்சாரம்.
5. இலக்கியம் மூலம் சமூகவிழிப்புணர்வு உருவாக்கம்.

SEMESTER- II

பொதுத்தமிழ் -2

இடைக்கால இலக்கியம் - முதலாமாண்டு (இரண்டாம் பருவம்-தாள் 2)

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Units	Course Contents
Unit - I	மூவர் தேவாரம் பக்தி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் கற்பிக்கப்பட வேண்டும். 1.கோளறுபதிகம்(1-11 பாடல்கள்)- இரண்டாம் திருமுறை- திருஞானசம்பந்தர். 2.மாசில்வீணையும்(1-10)- ஐந்தாம்திருமுறை- திருநாவுக்கரசர். 3.திருவெண்ணைநல்லூர் பதிகம்-1-10 பாடல்கள்-ஏழாம்திருமுறை - சுந்தரர்.
Unit - II	பக்தி இலக்கியம் 1. சிவபுராணம் முழுவதும் – மாணிக்கவாசகர். 2. பெரியாழ்வார் திருமொழி – திருப்பல்லாண்டு (1 – 12 பாசுரங்கள்) – பெரியாழ்வார். 3. திருப்பாவை முழுவதும் - ஆண்டாள்.
Unit - III	தனிப்பாடல்கள் 1. காளமேகப் புலவரின் தனிப்பாடல்கள் – கடவுள் வாழ்த்து மட்டும். 2. தாயுமானவர் தனிப்பாடல்கள் – பராபரக்கண்ணி. 3. காசிப் புலவர் தனிப்பாடல்கள் – திருப்புகழ் (இசுலாமிய பக்திப் பாடல்கள்). 4. இரட்சணிய மனோகரம் – முதல் 10 பாடல்கள் - எச்.ஏ.கிருஷ்ணபிள்ளை.
Unit - IV	சிறுநிலக்கியம் திருக்கயிலாய ஞான உலா(1-50) கண்ணிகள் கலிங்கத்துப்பரணி –களம் பாடியது. குறவஞ்சி – திருக்குற்றாலக் குறவஞ்சி – வசந்தவல்லியின் காதல் பள்ளு – ஞானப்பள்ளு இலக்கியம் முழுவதும். தூது – நெஞ்சுவிடு தூது முழுவதும்.
Unit - V	சித்தர் இலக்கியம் 5.1 வள்ளலார் பாடல்கள் 1."வாடிய பயிரைக் கண்ட போதெல்லாம் வாடினேன் " 2. "எத்தனையோ பேதமுறாத்தொரு உயிரும் 5.2 திருமூலரின் திருமந்திரம் யாக்கை நிலையாமை - முதல் தந்திரம் (143-167) 25 பாடல்கள்.

Question paper Coverage - 100% theory

Text book	• தேவாரம் (திருமுறை 1-7),சைவ சித்தாந்த நூற்பதிப்புக் கழகம்,சென்னை,1957. • திருவாசகம் (சிவபுராணம் உட்பட)- மாணிக்கவாசகர், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 1980. • நாலாயிர திவ்ய பிரபந்தம் , ஆழ்வார்கள் (compiled by நாதமுனிகள்), சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 1980. • காளமேகப் புலவர், தனிப்பாடல்கள், புலியூர்க் கேசிகன், மங்கை வெளியீடு, சென்னை,2014. • தாயுமானவர், தனிப்பாடல்கள் திரட்டு,கலைஞன் பதிப்பகம்,சென்னை,2001. • காசிம் புலவர் திருப்புகழ்- தனிப்பாடல்கள் , காசிம் புலவர், ஷாஹீல் ஹமீதியா அச்சயாந்திர சாலைசென்னை, 1953. • இரட்சணிய மனோகரம், எச்.ஏ. கிருஷ்ணபிள்ளை, நாசரேத் பதிப்பகம், நாகர்கோவில், 1890. • திருக்கயிலாய ஞான உலா, சேரமான் பெருமாள் நாயனார்,கௌரா பதிப்பகம், சென்னை,2021. • கலிங்கத்துப்பரணி,புலியூர்க்கேசிகன்,உரை,பாவைபதிப்பகம்,சென்னை,2014. • திருக்குற்றாலக் குறவஞ்சி , திரிகூடராசப்பக் கவிராயர் , சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,2000. • ஞானப்பள்ளி, பதிப்பாசிரியர்-பேராசிரியர்.ஆ.சதாசிவம், இலங்கை,1968. • நெஞ்சுவிடு தூது , உமாபதி சிவாசாரியார், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,2000. • திருவருட்பா ,இராமலிங்க அடிகள் (வள்ளலார்), சமரச சுத்த சன்மார்க்க சங்கம், வடலூர்/சென்னை,1999. • திருமந்திரம் , திருமூலர், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 1999.
Reference Book	• தமிழ்ச் சிற்றிலக்கியங்கள், இரா.சந்திரசேகர்,நாம் தமிழர் பதிப்பகம்,சென்னை, 2012 . • ந.வீ.செயுராமன் சிற்றிலக்கியச் செல்வம், மணிவாசகம் பதிப்பகம்,சிதம்பரம். 2010. • மூவர் தேவாரம் சொல்லரசு புலவர்,வீ.சிவஞானம்,விஜயாபதிப்பகம், கோவை,2012. • சிற்றிலக்கியங்களின் தோற்றமும் வளர்ச்சியும்,முத்துச்சண்முகன் மற்றும் நிர்மலா மோகன்,முத்துப் பதிப்பகம்,மதுரை1979. • பக்தி இலக்கிய வரலாறு - முனைவர் த.மேகநாதன் ,காவ்யா பதிப்பகம்,

	சென்னை. 2017. • சித்தர் இலக்கியம்- அண்ணாமலைப் பல்கலைக்கழகப் பதிப்பகம், 1988.			
E-Reference	• Tamil Heritage Foundation- www.tamilheritage.org • Tamil virtual University Library- www.tamilvu.org/ library • Project Madurai - www.projectmadurai.org. • Chennai Library- www.chennaiLibrary.com . • Tamil Universal Digital Library- www.ulib.prg . • Tamil E-Books Downloads- tamale books downloads. blogspot.com • Tamil Books on line- books.tamil cube.com • Catalogue of the Tamil books in the Library of British Congress archive.org • Tamil novels on line - books.tamilcube.com			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1- LO15)
	CO1	இடைக்கால இலக்கியங்களை அறிதல்.	K1 & K2	LO1
	CO2	மூவர்தேவாரத்தின் படைப்புகளைத் திறனாய்தல்.	K3	LO4
	CO3	இடைக்கால இலக்கியங்களை பயின்று பகுத்து வகை தொகை செய்தல்.	K4	LO5
	CO4	பக்தி இலக்கிய வளர்ச்சியினைப் பகுத்தாய்தல்.	K5	LO11
	CO5	பிற சமய இலக்கியங்களை மதிப்பீடு செய்தல்.	K5 & K6	LO2 LO15 LO3 LO8 LO9

Mapping of Cos with Pos & PSOs	Programme Outcomes					Programme Specific Outcomes						Mapping Score of Cos with POs & PSOs
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.6
	CO1	3	2	2	2	2	2.2	2	2	2	2	
	CO2	3	3	2	2	2	2.4	2	2	2	2	
	CO3	3	3	2	3	3	2.8	3	3	3	3	
	CO4	3	3	2	3	3	2.8	3	3	3	3	
	CO5	3	3	3	3	3	3	3	3	3	3	
	Overall score for PO						2.6	Overall score for PSO			2.6	
	Strongly Correlating (S)						-	3 Marks				
	Moderately Correlating (M)						-	2 Marks				
	Weakly Correlating (W)						-	1 Mark				
	No Correlation (N)						-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology Experiential learning, Flipped Learning, Blended Learning, Participative Learning						Assessment Types Written mode – exam, class test, assignment Integrated mode – paper presentation / seminar						

Assignment Topics

1. இடைக்கால இலக்கியத்தில் சமூகப் பதிவுகள்.
2. இடைக்கால இலக்கியங்களில் பக்தி உணர்வு.
3. சிற்றிலக்கியங்களின் தோற்றமும் வளர்ச்சியும் .

4. இடைக்கால இலக்கியங்களில் அறக்கருத்துகள்.
5. குறவஞ்சி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்.
6. உலா இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்.
7. பரணி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்.
8. பள்ளு இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்.
9. தனிப்பாடல்களில் இறைச் செய்திகள்.
10. பக்தி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்.
11. பக்தி இலக்கியத்தின் இறை உணர்வுகள்.
12. சைவ, வைணவ பக்தி இலக்கியங்களில் ஒப்பாய்வு.
13. சிவபுராணம் கூறும் வாழ்வியல் நெறிகள்.

Seminar Topics

1. இடைக்கால இலக்கியங்களில் தமிழ் மொழி வளர்ச்சி.
2. தமிழ் இலக்கிய வரலாற்றில் சிற்றிலக்கிய வகைகளும்-சிறப்புகளும்.
3. பக்தி இயக்கமும் இடைக்காலத் தமிழ் இலக்கிய வளர்ச்சியும்.
4. மூவர் தேவாரத்தில் சமயச் சிந்தனைகள்.
5. மூவர் தேவாரத்தில் பக்தி.
6. திருப்பாவையில் காணப்படும் பக்தி நெறிகள்.
7. சிவபுராணம் காட்டும் சைவத் தத்துவங்கள் .
8. சித்தர் இலக்கியங்களில் சமூகச் சீர்திருத்தக் கருத்துகள்.
9. வள்ளலார் பாடல் செய்திகள்.
10. திருமூலரின் யாக்கை நிலையாமை கருத்துக்கள்.

பொதுத்தமிழ் -3

[illegible]

Units	Course Contents
Unit - I	இரட்டைக் காப்பியங்கள்
	1.1 சிலப்பதிகாரம் 1.மங்கல வாழ்த்துப் பாடல். 2.மனை அறம் படுத்த காதை. 3.அந்திமாலை சிறப்புச் செய் காதை. 4.இந்திர விழா ஊர் எடுத்த காதை. 1.2 மணிமேகலை முதல் ஐந்து காதைகள்.
Unit - II	சமண ,பௌத்த காப்பியங்கள்
	2.1.சீவகசிந்தாமணி – பூமகள் இலம்பகம், முழுவதும். 2.2 .குண்டலகேசி – யாக்கை நிலையாமை.
Unit - III	கிறித்துவ, இசுலாமிய காப்பியங்கள்
	3.1.தேம்பாவணி – முடிசூட்டுப் படலம் – சூசை பெற்ற ஏழு வரங்கள். 3.2. சீறாப்புராணம் – ஓநாய் பேசிய படலம்.
Unit - IV	கம்பராமாயணம் ,வில்லிபாரதம்
	4.1.கம்பராமாயணம் – கிட்கிந்தா காண்டம் - வாலிவதைப் படலம் (மட்டும்). 4.2. வில்லிபாரதம் – சபா பருவம் முழுவதும்.
Unit - V	புராணக் காப்பியங்கள்
	5.1.பெரியபுராணம் – கண்ணப்பநாயனார் புராணம் முழுவதும் 5.2 .இராவண காவியம் – தாய்மொழிப் படலம்(1-11)பாடல்கள் மட்டும்
Question paper Coverage - 100% theory	
Text book	- சிலப்பதிகாரம், ஞா.மாணிக்கவாசகன், உமாபதிப்பகம், சென்னை, 2000. - மணிமேகலை – ந.மு.வேங்கடசாமி நாட்டார், ராமையா பதிப்பகம், சென்னை. 2000. - சீவகசிந்தாமணி , திருத்தக்கதேவர், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 2000. - குண்டலகேசி, சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 2000. - தேம்பாவணி, எம்.ஆர்.அடைக்கலசாமி, வர்த்தமானன் பதிப்பகம், சென்னை, 1992. - சீறாப்புராணம் , நாச்சி குளத்தார் உரை , தீர் எம் பதிப்பகம், சென்னை, 1974.

	• கம்பராமாயணம் -அ.ச.ஞானசம்பந்தன்,கம்பன் டிரஸ்ட்,கோவை,2000. • வில்லிபாரதம், சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை, 2000. • பெரியபுராணம், குமரகுருபரன்பிள்ளை(பதி),சிரீகாசிமடம், திருப்பானந்தாள்,1964. • இராவண காவியம் - புலவர்குழந்தை,திராவிடப்பண்ணைபதிப்பகம்,சென்னை. 2000.			
Reference Book	• தமிழில் காப்பியக் கொள்கை,து.சீனிச்சாமி,தமிழ்ப் பல்கலைக் கழகம்,தஞ்சாவூர்,1985. • காப்பியத் தோற்றமும் வளர்ச்சியும் – காசிராசன்,மதி பதிப்பகம்,மதுரை.2000. • காப்பியத் திறன்- சோம இளவரசு,மணிவாசகர் நூலகம்,சிதம்பரம்.2000. • கிறித்துவ இலக்கிய சிந்தனைகள், கு.இன்னாசி,வளநாடு வெளியீடு, சென்னை 1984. • இஸ்லாமியத் தமிழ் இலக்கிய வரலாறு(தொகுதிஒன்று) ம.முகம்மது உவைஸ்(ம)பீ.மு.அஜ்மல்கான்,மதுரை காமராசர் பல்கலைக்கழகம், மதுரை,1986. • இலக்கிய சிந்தனை, சிற்பி, கோலம் வெளியீடு.பொள்ளாச்சி.1989. • சேக்கிழார் தந்த செல்வம்,அ.ச.ஞானசம்பந்தன்,கங்கை புத்தக நிலையம், சென்னை,முதற் பதிப்பு,1997.			
E-Reference	• Tamil Heritage Foundation- www.tamilheritage.org • Tamil virtual University Library- www.tamilvu.org/library • Project Madurai - www.projectmadurai.org • Chennai Library- www.chennailibrary.com • Tamil Universal Digital Library- www.ulib.org • Tamil E-Books Downloads- tamale booksdownloads. blogspot.com • Tamil Books on line- books.tamil cube.com • Catalogue of the Tamil books in the Library of British Congress archive.org • Tamil novels on line - books.tamilcube.com			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	காப்பிய இலக்கியங்களின் தோற்றம்- வளர்ச்சி பற்றி அறிவர்.	K1 & K2	LO1

	CO2	காப்பிய இலக்கியங்களைப் பயின்று பகுத்து வகை தொகை செய்வர்.	K3	LO4
	CO3	காப்பிய இலக்கியங்களைப் பயின்று ஒப்பீடு செய்வர்.	K4	LO5
	CO4	பிற காப்பிய இலக்கியங்களைப் பகுத்தாய்ந்து மதிப்பிடுவர்.	K5	LO11
	CO5	காப்பியங்களை ஒப்பிட்டு ஆய்வு மேற்கொண்டு தானே புதிய காப்பிய இலக்கியம் உருவாக்கும் சிந்தனை பெறுவர்.	K5 & K6	LO2 LO15 LO3 LO8 LO9

Mapping of Cos with Pos & PSOs	Programme Outcomes							Programme Specific Outcomes				Mapping Score of Cos with POs & PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score	2.6	
	CO 1	3	2	2	2	2	2.2	2	2	2	2		
	CO 2	3	3	2	2	2	2.4	2	2	2	2		
	CO 3	3	3	2	3	3	2.8	3	3	3	3		
	CO 4	3	3	2	3	3	2.8	3	3	3	3		
	CO 5	3	3	3	3	3	3	3	3	3	3		
	Overall score for PO						2.6	Overall score for PSO			2.6		
	Strongly Correlating (S)							-					3 Marks
	Moderately Correlating (M)							-					2 Marks
Weakly Correlating (W)							-					1 Mark	
No Correlation (N)							-					0 Mark	
Teaching–Learning & Assessment Framework													
Teaching Methodology							Assessment Types						
Experiential learning, Flipped Learning, Blended Learning,							Written mode – exam, class test, assignment						

Participative Learning	Integrated mode – paper presentation / seminar
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Assignment Topics

1. தமிழ்க் காப்பியங்களின் தோற்றமும் வளர்ச்சியும்.
2. தமிழ்க் காப்பியங்களில் சமயச் சிந்தனைகள்.
3. தமிழ்க் காப்பியங்களின் இலக்கிய மரபும் தாக்கமும்.
4. சிலப்பதிகாரம்- அந்திமாலைச் சிறப்புசெய் காதைச் செய்திகள்.
5. சிலப்பதிகாரம்- இந்திர விழா ஊர் எடுத்த காதைச் செய்திகள்.
6. விழாவறை காதை காதைச் செய்திகள்.
7. ஊரலர் உரைத்த காதைச் செய்திகள்.
8. மலர்வனம் புக்க காதைச் செய்திகள்.
9. பளிக்கறைப் புக்க காதைச் செய்திகள்.
10. மணிமேகலா தெய்வம் தோன்றிய காதைச் செய்திகள்.
11. சீவகசிந்தாமணி பூமகள் இலம்பகச் செய்திகள்.
12. குண்டலகேசி யாக்கை நிலையாமை செய்திகள்.
13. கம்பராமயணம் வாலிவதைப் படலச் செய்திகள்.
14. வில்லிபாரதம் சபா பருவச் செய்திகள்.
15. கண்ணப்ப நாயனாரின் பக்தி நெறி.
16. இராவண காவியத்தில் இராவணனின் பாத்திரப் படைப்பு.
17. இராவண காவியத்தில் அறநெறிச் சிந்தனைகள்.
18. இராவண காவியத்தின் இலக்கியப் பங்களிப்பு.

Seminar Topics

1. தமிழ்க் காப்பியங்கள் காட்டும் தமிழர் பண்பாடு.
2. மணிமேகலையில் சமயச் சிந்தனைகள்.
3. காப்பியங்களில் நீதி மற்றும் அறநெறி.
4. கம்பராமயணம் வாலிவதைப் படலம் கதைச் செய்திகள்.
5. சீவகசிந்தாமணியில் இல்லறமும் துறவறமும்.
6. சீவகசிந்தாமணியின் காப்பியச் சிறப்புகள்.
7. தேம்பாவணி முடிசூட்டுப் படலத்தின் இலக்கியப் பங்களிப்பு.
8. கண்ணப்ப நாயனாரின் பக்திச் சிறப்பு.
9. இராவண காவியத்தில் வீரரும் தலைமைத்துவமும்.

பொதுத்தமிழ் -4

[illegible]

	வைக்கும் அறக்கருத்துகள்,அற இலக்கியங்களின் இலக்கிய மதிப்புகள் போன்றவற்றை அறிந்துகொள்ளுதல். தமிழர்களின் பண்டைய அறவாழ்வுப் பெருமிதங்களை அறிந்து பின்பற்றும் விருப்பத்தைத் தூண்டுதல்.சமுதாய ஒற்றுமை,சமத்துவம்,மனித மாண்பு ஆகியவற்றை வலியுறுத்தல்.சிந்தனைத் திறன் வளர்ச்சி, நல்ல முடிவுகளை எடுக்க உதவும் நெறிமுறைகளை அறியச் செய்தல்.
Units	Course Contents
Unit - I	சங்க இலக்கியம் 1.1. எட்டுத்தொகை, பத்துப்பாட்டு - குறிஞ்சித் திணை - ஐங்குறுநூறு-205-கபிலர். - முல்லைத் திணை - அகநானூறு-74-மதுரைக் கவுணியன் பூதத்தனார். - மருதத் திணை - நற்றிணை-120- மாங்குடி கிழார். - நெய்தல் திணை - குறுந்தொகை-345-அண்டர் மகன் குறுவழுதி. - பாலைத் திணை - பாலைக்கலி -9-பாலை பாடிய பெருங்கடுங்கோ. 1.2. பத்துப்பாட்டு –முல்லைப்பாட்டு முழுவதும்.
Unit - II	புறப்பாடல்கள் புறநானூறு - ஒளவையார் பாடல்கள்- 91,206,235,392. - பாரி மகளிர் -112. - பேய்மகள் இளவெயினார் -11. - பூதப்பாண்டியன் தேவி பெருங்கோப்பெண்டு – 246. - காக்கை பாடினியார் – 278. - ஒக்கூர் மாசாத்தியார் – 279. - அள்ளூர் நன்முல்லையார் – 306. - காவற்பெண்டு -86.
Unit - III	திருக்குறள் - நாலடியார் – நான்மணிக்கடிகை - இன்னாநாற்பது - திருக்குறள் – அறத்துப்பால்- (அறன் வலியுறுத்தல் – செய்ந்நன்றி அறிதல், நடுவுநிலைமை, ஒழுக்கமுடைமை , அற உடைமை). - நாலடியார், – பொருட்பால் – (கல்வி – 131- 140) குஞ்சியழகும் முதல் அலகுசால் வரை. - நான்மணிக்கடிகை (11-20) கன்றாமை முதல் மனைக்குப்பாழ் வரை - இன்னா நாற்பது (21 – 30) ஈத்தவகையால் முதல் நெடுமரம். வரை

Unit - IV	இனியவை நாற்பது - திரிகடுகம் – சிறுபஞ்ச மூலம் – ஏலாதி ஆசாரக்கோவை – பழமொழி • இனியவை நாற்பது (11-20) அதர் சென்று முதல் சலவரைச் சாரா வரை • திரிகடுகம் (11-20) விளியாதான் முதல் ஆசை பிறன்கண் வரை • சிறுபஞ்ச மூலம் (11-20) கோறலும் நஞ்சு முதல் பூவாதுகாய்க்கும் வரை • ஏலாதி (11-20) அவாஅறுக்கல் முதல் மின் தேர் வரை • ஆசாரக்கோவை (11 – 20) உடுத்து அலால் முதல் உண்ணுங்கால் வரை • பழமொழி – (11-20) 1. விதிப்பட்ட நூலுணர்ந்து வேற்றுமை யில்லார். 2. கற்றானும் கற்றார்வாய்க் கேட்டானும் இல்லாதார். 3. கல்லாதான் கண்ட கழிநுட்பம் கற்றார்முன் . 4. கல்லாதான் கண்ட கழிநுட்பம் காட்டரிதல். 5. கல்வியா னாய கழிநுட்பம் கல்லார்முன். 6. கல்லா தவரிடைக் கட்டுரையின் மிக்கதோர். 7. கற்றாற்று வாரைக் கறுப்பித்துக் கல்லாதார் . 8. கேட்பாரை நாடிக் கிளக்கப் படும்பொருட்கண். 9. ஒருவ ருரைப்ப உரைத்தால், அதுகொண். 10. துன்னி இருவர் தொடங்கிய மாற்றத்திற்.
Unit - V	முதுமொழிக் காஞ்சி - களவழி நாற்பது 5. 1.முதுமொழிக் காஞ்சி -(6-10) இல்லைப் பத்து முதல் தண்டாப் பத்து வரை. 5. 2. களவழி நாற்பது முழுவதும்.
Question paper Coverage - 100% theory	
Text book	• சங்க இலக்கியம் மூலமும் உரையும்- ச.வே. சுப்பிரமணியன்,மணிவாசகர் பதிப்பகம்,சென்னை,2014. • பத்துபாட்டு மூலமும் உரையும்,ச.வே. சுப்பிரமணியன்,மணிவாசகர் பதிப்பகம்,சென்னை,2014 • பதினெண்கீழ்க்கணக்கு நூல்கள், அ.மாணிக்கம், வர்த்தமானன் பதிப்பகம், சென்னை,2007.
Reference Book	• தமிழ் இலக்கிய வரலாறு, மு.வரதராசன்,சாகித்ய அகாடெமி பப்ளிகேஷன், சென்னை.1972. • தமிழ்ச் செவ்வியல் நூல்கள், ச.வே.சுப்பிரமணியன்,மணிவாசகர்

	பதிப்பகம்,சென்னை,2008.		
E-Reference	- Tamil Heritage Foundation- www.tamilheritage.org - Tamil virtual University Library- www.tamilvu.org/library - Project Madurai - www.projectmadurai.org - Chennai Library- www.chennaiLibrary.com - Tamil Universal Digital Library- www.ulib.prg - Tamil E-Books Downloads- tamale booksdownloads. blogspot.com - Tamil Books on line- books.tamil cube.com - Catalogue of the Tamil books in the Library of British Congress archive.org - Tamil novels on line - books.tamilcube.com		
Course learning outcomes	On successful completion of the course, the students will be able to		
	COs	Course Outcomes	Learning Outcomes (LO1-LO15)
	CO1	பழந்தமிழ் இலக்கியங்களின் தோற்றம், வளர்ச்சி மற்றும் இலக்கியப் பின்னணியை அறிதல்.	LO1
	CO2	சங்க இலக்கியங்களின் அகப்பொருள்,புறப்பொருள் கோட்பாடுகளைப் புரிந்து பழந்தமிழ் இலக்கியக் கருத்துக்களை கல்வி,சமூகம் மற்றும் வாழ்வியல் சூழல்களில் பயன்படுத்தும் திறனைப் பெறுவார்.	LO4
	CO3	பழந்தமிழ் இலக்கியங்களை நவீன இலக்கியங்களுடன் ஒப்பிட்டு பகுத்தறிதல்.	LO5
	CO4	பழந்தமிழ் இலக்கியங்களில் காணப்படும் வாழ்வியல் நெறிகளை மதிப்பீடு செய்தல்.	LO11
	CO5	பழந்தமிழ் இலக்கியம் தொடர்பான ஆய்வு,கருத்தரங்கம், ஒப்படைப்பு மற்றும் படைப்பாக்கப் பயிற்சியினைப் பெறுதல்.	LO2 LO15 LO3 LO8 LO9

Mapping of Cos	Programme Outcomes	Programme Specific Outcomes	Mapping Score of Cos with POs &
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with Pos & PSOs											PSOs	
	COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO3	PSO3	Mean Score	2.6
	CO1	3	2	2	2	2	2.2	2	2	2	2	
	CO2	3	3	2	2	2	2.4	2	2	2	2	
	CO3	3	3	2	3	3	2.8	3	3	3	3	
	CO4	3	3	2	3	3	2.8	3	3	3	3	
	CO5	3	3	3	3	3	3	3	3	3	3	
	Overall score for PO						2.6	Overall score for PSO			2.6	
Strongly Correlating (S)							-	3 Marks				
Moderately Correlating (M)							-	2 Marks				
Weakly Correlating (W)							-	1 Mark				
No Correlation (N)							-	0 Mark				
Teaching–Learning & Assessment Framework												
Teaching Methodology Experiential learning, Flipped Learning, Blended Learning, Participative Learning							Assessment Types Written mode – exam, class test, assignment Integrated mode – paper presentation / seminar					

Assignment Topics

- 1.சங்க இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் .
- 2.எட்டுத்தொகை நூல்களின் இலக்கியச் சிறப்பு.
- 3.பத்துப்பாட்டு நூல்களின் தோற்றமும் வளர்ச்சியும் .
- 4.முல்லைப்பாட்டில் தலைவியின் உணர்வு.
5. திருக்குறள் காட்டும் வாழ்வியல் நெறிகள்.
- 6.பதினெண் கீழ்க்கணக்கு நூல்களில் அறக்கருத்துகள்.
- 7.திரிகடுகம் காட்டும் அறச்சிந்தனைகள்.
- 8.பழமொழி நானூற்றில் மக்களின் வாழ்க்கை அனுபவங்கள்.
9. புறநானூற்றில் ஒளவையார் பாடலின் கருத்துக்களை தொகுக்க.

Seminar Topics

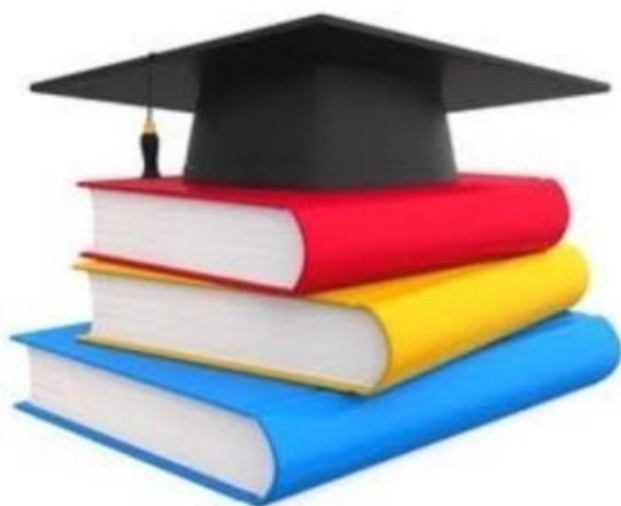
- 1.சங்க இலக்கியத்தில் திணைகளும் தமிழர் வாழ்வியலும்.
- 2.திணைக்கோட்பாடுவழி சங்ககால மக்களின் வாழ்க்கைமுறை.
- 3.முல்லைப்பாட்டில் சங்ககால சமூகப் பண்பாடுகள்.
- 4.திருக்குறளில் அறநெறிச் சிந்தனைகள்.
- 5.பழமொழி நானுற்றில் வாழ்வியல் கூறுகள்.
6. பதினெண் கீழ்க்கணக்கு நூல்களில் நீதிக் கருத்துக்கள்.
7. பதினெண் கீழ்க்கணக்கு நூல்களில் அற இலக்கிய மரபு.

Department of English and Foreign Languages Syllabus

for

Part II English

(University Department and Affiliated Colleges)



Curriculum Framework and Syllabus for 2026-2029



Department of English and Foreign Languages Minutes of the BoS meeting

Date & Time: 25.6.2026, 10.30.am

Meeting Link: meet.google.com/vsu-qqto-yka

The Department of English and Foreign Languages has convened the Board of Studies for the curriculum of UG & P.G Programme in English offered by the Affiliated Colleges, M.A. English Programme offered by the Department of English and Foreign Languages, Mother Teresa Women's University, Kodaikanal Certificate Programme in English (News Reporting and Environmental Journalism), Part II English, Part I French, and Value Based Education for both MTWU & Affiliated Colleges to be offered from the academic year 2026-2027 onwards.

It is resolved that the Board of Studies of the Department of English having reviewed in detail the syllabus placed before it, hereby, confirmed and approved the curriculum framed for the M. A. English literature (University), M. A. English literature (All Affiliated Colleges) UG B. A. English literature (All Affiliated Colleges) Programmes, Part -II English, Part -I French, Certificate Programme and Value Based Education for the Academic Year 2026-2027.

It is further resolved that the said Curriculum have been framed and revised on the basis of the recommendations of Subject experts, Faculty members, Industry representatives, Alumnae and Student feedback, all of whose suggestions have been systematically considered and incorporated, and that the syllabus duly reflect the emerging trends in English Literature and the current requirements of the Society. The syllabus of Part -II English, Part -I French, Certificate Programme and Value Based Education submitted to the board has been approved.

It is further resolved that the aforementioned syllabus stand approved with minor modifications to the curriculum of the M A. English literature (University), M. A. English literature (All Affiliated Colleges) and UG B. A. English literature (All Affiliated Colleges) programmes, by incorporating the regional needs of the area, and that theses syllabus be implemented with effect from the academic year 2026-2027 for next three years.

 25/06/26

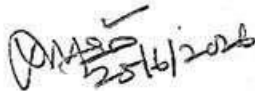
Dr. P. Jeyappriya, Professor and Head, Chair Person, BOS
Department of English and Foreign Languages
Mother Teresa Women's University, Kodaikanal



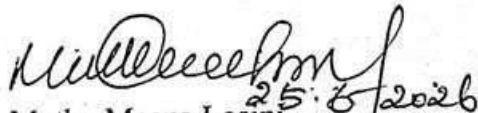
Mr. Lokesh,
Lady Hawk Language Research Foundations,
Gandhipuram,
Coimbatore.

 25/6/2026

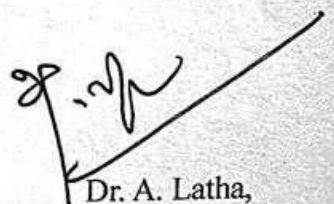
Dr. P. Nagaraj, Professor and Head,
Department of English,
Bharathiar University,
Coimbatore.

 25/6/2026

Dr. Rajaram,
Associate Professor,
Department of English,
M.V.M. Govt. Arts College for Women,
Dindigul.

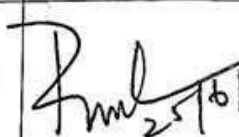
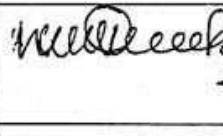
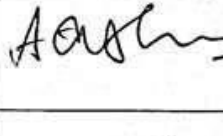
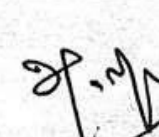
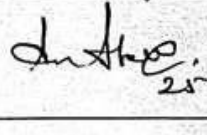
 25.6.2026

Dr. A. Muthu Meena Losini,
Department of English and Foreign Languages
Mother Teresa Women's University,
Kodaikanal



Dr. A. Latha,
Associate Professor,
Department of English
Govt. Arts college for Women,
Nilakottai

MOTHER TERESA WOMEN'S UNIVERSITY, KODAIKANAL
DEPARTMENT OF ENGLISH

S.NO.	BoS Members	Members Present	SIGNATURE
1.	Head of the Department/ CHAIRPERSON	Dr. P. Jeyappriya, Professor and Head, Department of English and Foreign Language Mother Teresa Women's University, Kodaikanal.	 25/06/2026
2.	Subject Expert from other Universities	Dr.P.Nagaraj, Professor and Head, Department of English, Bharathiar University Maruthamalai Road, Coimbatore 641 046	 25/6/2026
3.	One representative from Alumnae	S. Esther Vidhya Kumbar	 25/06/2026
4.	One representative from Industrial field	Mr. LOKESH Lady Hawk Language Research Foundation 289, SMB Toys Complex, 6th Street, Gandhipuram , Coimbatore.	
5.	Department Staff from our University	Dr.A.Muthumeena Losini, Asst.Professor	 25.6.26
6.		Dr.A.Rajalakshmi, Asst.Professor	
7.	One Co-ordinator from each affiliated College where the Respective course is offered	Dr.Rajaram, Associate Professor, Department of English, M.V.M. Government Arts College for Women, Dindigul.	 25/6/2026
8.		Dr.A.Latha, Associate Professor, Govt. Arts College for Women, Nilakottai.	
9.	One Student Representative	K. A. Ann Abano.	 25.6.26.

GENERIC ENGLISH (PART II)

SEMESTER I- IV

[illegible]

V	Writing Reading Comprehension General Essay Writing		
Course Outcomes			
Course Outcomes	On completion of this course, students will be able to		
		K Level	LO
CO1	To introduce students to foundational literary genres including poetry, prose, drama, and short fiction across varying socio-cultural periods.	K1 & K2	LO1
CO2	To cultivate critical thinking, aesthetic appreciation, and interpretive skills through textual analysis of classic and modern literature.	K3	LO4
CO3	To sensitise students to core human values, universal ethics, and ecological awareness embedded within structural texts.	K4	LO5
CO4	To strengthen baseline communicative proficiency by clarifying foundational principles of English grammar and syntax.	K5	LO11
CO5	To enhance workplace readiness and lifelong communication skills by training students to apply active/passive voice and precise tenses.	K5 & K6	LO15
Textbook (Latest Editions)			
1.	<i>Literary Gleam: An Anthology of Prose and Poetry</i> (Standard First-Year UG Foundation Textbook).		
2.	<i>An Introduction to the Study of English Literature</i> by B. Prasad.		
References Books (Latest editions, and the style as given below must be strictly adhered to)			
1.	<i>A Glossary of Literary Terms</i> by M.H. Abrams (Cengage Learning).		
2.	<i>The Pelican Guide to English Literature (Vol. 1–8)</i> , edited by Boris Ford.		
Web Resource			
1.	Poetry Foundation: For authorised, printable versions of Wordsworth, Frost, and Keats.		
2.	Cambridge Dictionary. — <i>Grammar and Language Reference</i> . Cambridge University Press, https://dictionary.cambridge.org/grammar .		
3.	The British Council. — <i>LearnEnglish</i> . British Council, https://learnenglish.britishcouncil.org .		

Mapping of Cos with Pos & PSOs

COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score
CO1	3	2	2	2	3	2.4	3	2	2	2.3
CO2	2	3	2	3	2	2.4	2	3	1	2
CO3	2	2	3	1	2	2	2	1	2	1.6
CO4	2	2	2	2	2	2	3	2	3	2.6
CO5	2	2	2	3	2	2.2	2	2	2	2
Overall score for PO						2.2	Overall score for PSO			2.1

Course Code		Semester II	Year I	Credits	L	T	P	Hrs
Core/ Elective	General English II			3				6
Nature of the Course	Employability, Skill Development, Entrepreneurship							
Learning Objectives								
LO1	To introduce students to foundational literary genres, including poetry, prose, drama, and short fiction across varying socio-cultural periods.							
LO2	To cultivate critical thinking, aesthetic appreciation, and interpretive skills through text analysis of classic and modern literature.							
LO3	To sensitise students to core human values, universal ethics, and ecological awareness embedded within structural texts.							
LO4	To strengthen foundational syntactic clarity by training students to identify and construct standard sentence patterns.							
LO5	To enhance workplace readiness and situational fluency through conversational skills, dialogue production, and reporting mechanics.							
UNIT	Course Contents							
I	Poetry Rudyard Kipling - <i>If</i> Walt Whitman – <i>O’Captain, My Captain</i> Langston Hughes – <i>Dreams</i> P.B.Shelley – <i>Ozymandias</i> William Blake – <i>Poison Tree</i>							
II	Prose Malala Yousafzai’s <i>I am Malala(Chapter 1)</i> M.K. Gandhi’s moral and personal growth in <i>The Story of My Experiments with Truth (Chapters 1- 2)</i>							
III	Short story Stephan Leacock - <i>My Financial Career</i> O’ Henry - <i>After 20 Years</i>							
IV	Grammar and Communication Skills Sentence Patterns Direct and Indirect Speech							
V	Writing Letter Writing a. Formal Letters b. Application for Leave c. Letter to the Editor d. Complaint Letter e. Enquiry Letter 1. Informal Letters							

Course Outcomes			
Course Outcomes	On completion of this course, students will be able to		
		K Level	LO
CO1	Recall and explain structural, thematic, and stylistic traits belonging to specified literary eras and authors.	K1 & K2	LO1
CO2	Analyse and interpret underlying metaphors, socio-cultural contexts, and philosophical concepts across various genres.	K3	LO4
CO3	Critique and evaluate human actions, ethical choices, and social realities depicted across the literary texts.	K4	LO5
CO4	Apply rules of syntax and speech transformation accurately to modify sentences in spoken and written contexts.	K5	LO11
CO5	Synthesize and produce coherent dialogic exchanges, creative scenarios, and professional reports based on real-world situations.	K5 & K6	LO15
Textbook (Latest Editions)			
1.	Touchstone: An Anthology of Prose and Poetry (Orient BlackSwan).		
2.	Echoes: A Course in Literature and Language (Macmillan Education).		
References Books (Latest editions, and the style as given below must be strictly adhered to)			
1.	A Glossary of Literary Terms by M.H. Abrams and Geoffrey Galt Harpham (Cengage Learning).		
2.	A Remedial English Grammar for Foreign Students by F.T. Wood (Macmillan Publishers).		
Web Resource			
1.	Poetry Foundation: For authorized, printable versions of works by William Wordsworth, Robert Frost, and John Keats.		
2.	Oxford Reference. —English Language and Literature.∥ Oxford University Press, https://www.oxfordreference.com .		
3.	JSTOR. —Language and Literature Collection.∥ ITHAKA, https://www.jstor.org .		

Mapping of Cos with Pos & PSOs

COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score
CO1	3	2	2	2	3	2.4	3	2	2	2.3
CO2	2	3	2	3	2	2.4	2	3	1	2
CO3	2	2	3	2	2	2.2	2	2	2	2
CO4	3	3	2	2	2	2.4	3	2	3	2.6
CO5	2	3	2	1	2	2	2	2	2	2
Overall score for PO						2.28	Overall score for PSO			2.18

Course Code		Semester III	Year II	Credits	L	T	P	Hrs
Core/ Elective	General English III			3				6
Nature of the Course	Employability, Skill Development, Entrepreneurship							
Learning Objectives								
LO1	To introduce foundational literary genres including lyrical poetry, reflective prose, social drama, and gothic/realist short fiction across global contexts.							
LO2	To develop analytical skills and aesthetic evaluation by unpacking text metaphors, sensory imagery, and diverse structural narratives.							
LO3	To nurture socio-cultural empathy and moral consciousness by exploring human vulnerabilities, simple life joys, and ethical transformations.							
LO4	To rectify syntactic structural weaknesses through target training in modifiers, non-finite verbs, and common usage errors.							
LO5	To equip students with expressive, real-world communicative output including contextual descriptions, cohesive paragraphing, and personal letters.							
UNIT	Course Contents							
I	Poetry W. B. Yeats - <i>The Lake Isle of Innisfree</i> William Shakespeare – <i>All the World’s a Stage</i> Robert Herrick - <i>To Daffodils</i> Joyce Kilmer - <i>Trees</i> Robert Browning – <i>Incident of the French Camp</i>							
II	Prose Robert Louis Stevenson - <i>Walking Tours</i> Jessie Owen - <i>My Greatest Olympic Prize</i>							
III	Short Stories Isaac Asimov - <i>The Last Question</i> Guy de Maupassant - <i>The Necklace</i>							
IV	Grammar and Communication Skills Degrees of Comparison Gerunds and Infinitives Common Errors in Usage							
V	Writing Writing a Paragraph Dialogue writing Report Writing							

Course Outcomes			
Course Outcomes	On completion of this course, students will be able to		
		K Level	LO
CO1	Recall and interpret core themes, character motivations, and literary imagery used across various global eras and authors.	K1 & K2	LO1
CO2	Deconstruct and examine underlying societal critiques, cultural practices, and existential concepts embedded within texts	K3	LO4
CO3	Critique and evaluate moral actions, financial vanities, and shifting emotional states depicted in diverse literary modes.	K4	LO5
CO4	Detect structural grammar flaws and construct accurate phrases using precise degrees of comparison, gerunds, and infinitives	K5	LO11
CO5	Draft well-structured paragraphs, situational narratives, and informal messages tailored to personal and social contexts.	K5 & K6	LO15
Textbook (Latest Editions)			
1.	<i>Symphony: An Anthology of Prose and Poetry</i> (Orient BlackSwan).		
2.	<i>Fluency in English: A Coursebook for Foundation English</i> (Macmillan Education).		
References Books (Latest editions, and the style as given below must be strictly adhered to)			
1.	<i>A Glossary of Literary Terms</i> by M.H. Abrams and Geoffrey Galt Harpham (Cengage Learning).		
2.	<i>Oxford Guide to English Grammar</i> by John Eastwood (Oxford University Press - Excellent for structural breakdowns of Gerunds vs. Infinitives).		
Web Resource			
1.	Poetry Foundation: For authorized, printable versions of works by W.B. Yeats, William Wordsworth, Robert Herrick, and Langston Hughes.		
2.	Cambridge Dictionary. — <i>Grammar and Language Reference</i> . Cambridge University Press, https://dictionary.cambridge.org/grammar .		
3.	Encyclopaedia Britannica. — <i>English Literature</i> . Encyclopaedia Britannica, https://www.britannica.com/art/English-literature .		
4.	Oxford Reference. — <i>English Language and Literature</i> . Oxford University Press, https://www.oxfordreference.com .		

Mapping of Cos with Pos & PSOs

COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score
CO1	3	2	3	2	3	2.6	3	2	2	2.3
CO2	2	3	2	3	2	2.4	2	3	2	2.3
CO3	2	2	3	3	2	2.4	2	2	2	2
CO4	3	1	2	2	2	2	3	2	3	2.6
CO5	2	3	2	3	2	2.4	2	3	1	2
Overall score for PO						2.36	Overall score for PSO			2.24

Course Code		Semester IV	Year II	Credits	L	T	P	Hrs
Core/ Elective	General English IV			3				6
Nature of the Course	Employability, Skill Development, Entrepreneurship							
Learning Objectives								
LO1	To analyze advanced global literary works across poetry, prose, drama, and short fiction, focusing on complex thematic structures and historical contexts							
LO2	To cultivate psychological insight and mature critical evaluation by unpacking text ironies, social behaviors, and motivational narratives							
LO3	To foster advanced professional language mechanics through sentence restructuring, syntax transformation, and reading comprehension.							
LO4	To develop modern workplace documents including formal electronic correspondence and industry-standard resumes or curricula vitae.							
LO5	To train students in corporate verbal skills covering competitive group discussions, recruitment interviews, and public presentation platforms.							
UNIT	Course Contents							
I	Poetry Christina Rossetti - <i>A Birthday</i> Walter de la Mare - <i>Silver</i> Thomas Hardy - <i>The Darkling Thrush</i> Wifred Owen – <i>Strange Meeting</i> Nissim Ezekiel - <i>Night of the Scorpion</i>							
II	Prose Martin Luther King – <i>I Have a Dream</i> A. P. J. Abdul Kalam - <i>The Power of Determination</i>							
III	Short Stories Ruskin Bond – <i>No Room for a Leopard</i> Saki - <i>The Open Window</i>							
IV	Grammar and Communication Skills Transformation of Sentences: Simple, Compound, and Complex Sentences Reading Comprehension							
V	Writing Resume / CV Writing Writing formal Emails Precise Writing							

Course Outcomes			
Course Outcomes	On completion of this course, students will be able to		
		K Level	LO
CO1	Identify and explain stylistic nuances, dramatic techniques, and underlying ironies across global genres	K1 & K2	LO1
CO2	Deconstruct and examine complex sociocultural identities, regional superstitions, and psychological character traits.	K3	LO4
CO3	Critique and evaluate human habits, societal systems, personal resilience models, and ethical dilemmas in literature	K4	LO5
CO4	Analyze syntactic relationships and alter structural data to convert sentences into simple, compound, or complex forms.	K5	LO11
CO5	Design, draft, and perform professional corporate communication tasks including CV creation, business emails, group presentation dynamics, and structured interview strategies.	K5 & K6	LO15
Textbook (Latest Editions)			
1.	Confluence: A Course in Literature and Language (Orient BlackSwan).		
2.	Prism: An Anthology of Prose, Poetry, and Drama (Macmillan Education India).		
References Books (Latest editions, and the style as given below must be strictly adhered to)			
1.	Poetry Foundation: For authorized, printable editions of poems by Christina Rossetti, Walter de la Mare, and Thomas Hardy		
2.	Poetry Foundation: For authorized, printable editions of poems by Christina Rossetti, Walter de la Mare, and Thomas Hardy		
Web Resource			
1.	Poetry Foundation: For authorized, printable editions of poems by Christina Rossetti, Walter de la Mare, and Thomas Hardy.		
2.	Cambridge Dictionary. —Grammar and Language Reference.℥ Cambridge University Press, https://dictionary.cambridge.org/grammar .		
3	Encyclopaedia Britannica. —English Grammar.℥ Encyclopaedia Britannica, https://www.britannica.com/topic/grammar .		

Mapping of Cos with Pos & PSOs

COs	PO1	PO2	PO3	PO4	PO5	Mean Score	PSO1	PSO2	PSO3	Mean Score
CO1	3	2	2	2	2	2.2	3	2	2	2.3
CO2	2	3	2	3	3	2.6	2	3	3	2.6
CO3	2	2	3	3	2	2.4	2	2	2	2
CO4	3	2	2	2	2	2.2	3	2	3	2.6
CO5	3	3	2	2	2	2.4	2	2	2	2
Overall score for PO						2.36	Overall score for PSO			2.3

Value Based Education (for all UG courses)

[illegible]

Reference Book	1. S. Dinesh, <i>Education for Values, Environment and Human Rights</i> , Discovery Publishing House. 2. M.G. Chitkara, <i>Education and Human Values</i> , APH Publishing.			
E-Reference	1. UGC Consortium for Educational Communication (CEC): https://cec.nic.in/ 2. UNESCO Values Education Resource Portal: https://en.unesco.org/			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K Level	Learning Outcomes (LO1-LO15)
	CO1	Recall and explain the core foundations of truth, honesty, professional integrity, and academic authenticity.	K1,K2	LO1, LO2
	CO2	Apply empathetic listening, conflict-resolution mechanisms, and mindful self-regulation techniques in daily personal and campus interactions.	K3	LO4, LO7
	CO3	Analyze various sources of emotional triggers, ethical dilemmas, and the behavioral consequences of convenience-based choices.	K4	LO5, LO9
	CO4	Evaluate the social impact of inclusive civic citizenship, corporate/governance transparency, and ethical accountability in modern public life.	K5	LO11, LO12
	CO5	Evaluate biological roles, structural parameters, and dietary variations like Omega-3/Omega-6 fatty acids while addressing ethical concerns in modern biotechnology.	K5, K6	LO2, LO13
	CO6	Formulate and adopt a structured personal plan for lifelong ethical living, utilizing emotional journaling, mindfulness, and value-based professional goals.	K6	LO14, LO15
Teaching–Learning & Assessment Framework				
Teaching Methodology Experiential & Reflective Learning: Regular classroom breathing and pause exercises, guided emotional journaling sessions, and peer-to-peer role-plays simulating emotionally charged situations or ethical dilemmas.		Assessment Types Blended Learning: Reviewing selected case studies on corporate, health, and academic transparency via online open-source educational modules. Interactive Frameworks: Group discussions using Think-Pair-Share methodologies focused on real-world conflict resolution, empathy mapping, and establishing strong campus values.		

Semester III

U26EVS301

ENVIRONMENTAL STUDIES - (For all UG courses)

[illegible]

Unit III	Biodiversity and Conservation - Levels of biological diversity :genetic, species and ecosystem diversity; Biogeography zones of India; Biodiversity patterns and global biodiversity hot spots. India as a mega-biodiversity nation; Endangered and endemic species of India. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. Environmental pollution-Environmental pollution : types, causes, effects and controls; Air, water, soil, chemical and noise pollution. Nuclear hazards and human health risks. Solid waste management: Control measures of urban and industrial waste. Pollution case studies.
Unit IV	Environmental Policies & Practices- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environment Laws : Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act; International agreements; Montreal and Kyoto protocols and conservation on Biological Diversity (CBD). The Chemical Weapons Convention (CWC). Nature reserves, tribal population and rights, and human, wildlife conflicts in Indian context
Unit V	Human Communities and the Environment - Human population and growth: Impacts on environment, human health and welfares. Carbon foot-print. Resettlement and rehabilitation of project affected persons; case studies. Disaster management: floods, earthquakes, cyclones and landslides. Environmental movements: Chipko, Silent valley, Bishnios of Rajasthan. Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi). Field work- Visit to a local area to document environmental assets-river / forest/ grassland/ hill / mountain
Question paper Coverage - 100% theory	

Reference Book	1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt. 2. Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press. 3. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge. 4. Gleick, P.H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press. 5. Groom, Martha J. Gary K. Meffe, and Carl Ronald carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006. 6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37. 7. McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books. 8. McNeil, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century. 9. Odum, E.P., Odum, h.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders. 10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press. 11. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatement. Oxford and IBH Publishing Co. Pvt. Ltd. 12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons. 13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. Environmental law and policy in India. Tripathi 1992. 14. Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP. 15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi. 16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons. 17. Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian
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	Subcontinent. 18. Warren, C.E. 1971. Biology and Water Pollution Control. WB Saunders. 19. Wilson, E.O. 2006. The Creation: An appeal to save life on earth. New York: Norton. 20. World Commission on environment and Development. 1987. Our Common Future. Oxford University Press.			
E-Reference				
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	KL level	Learning Outcomes (LO1-LO15)
	CO1	Explain the basic concepts of environmental studies, ecosystems, natural resources, biodiversity, and environmental pollution.	K1 & K2	LO1
	CO2	Analyze environmental issues and the impact of human activities on natural resources and ecosystems.	K4	LO3
	CO3	Evaluate environmental conservation methods, pollution control measures, and environmental laws for sustainable development.	K5	LO5
	CO4	Apply environmental knowledge to identify environmental problems and suggest suitable solutions through field studies and community participation.	K3	LO5
	CO5	Demonstrate environmental awareness, ethical responsibility, and sustainable practices for environmental protection.	K3	LO13,LO14

	CO6	Develop environmental responsibility and participate in environmental conservation and sustainable development activities.	K 6	LO14,LO15
Teaching–Learning & Assessment Framework				
Teaching Methodology Experiential learning, Blended Learning, Participative Learning		Assessment Types Written Mode - Exam, Class test, Assignment Integrated Mode - Paper presentation/ Seminar,		

Semester V

Course Code	U26DMG501	Semester V	Year III	Credits	L	T	P	Hrs
General Course	Disaster Management			2	2	-	-	2
Nature of the Course	Employability/ Skill Enhancement							
Learning objectives	1. To understand the fundamental classifications of hazards, vulnerabilities, and global DRR roadmaps. 2. To master essential community-based intervention practices, first-aid procedures, and psychosocial support mechanisms. 3. To analyze the institutional, economic, and structural frameworks governing disaster risk mitigation in India. 4. To evaluate geo-climatic profiles and employ standard methodologies for multi-hazard vulnerability assessments. 5.To assess the distinct coastal and highland environmental vulnerabilities specific to India and Tamil Nadu							
Units	Course Contents							
Unit I	Fundamental Concepts of Disaster and Vulnerability Myths, Maps, and Mitigation: Disaster Basics, Taming Trouble: How We Classify Hazards and Disasters, Global DRR Roadmaps: Charting Paths Past Disaster Drama, From Chaos to Foresight: How India Learned & Crafted its Disaster Governance, Eyes in the Sky, Brains on the Ground: Geo-Tech vs Disasters							
Unit II	Disaster Intervention Practices Community-Based Disaster Risk Reduction, First-Aid and Emergency Procedures, Psychosocial Support in Disaster Management .							
Unit III	Disaster Management Components of Disaster Management, Institutional framework for disaster management, Economic Instruments, Structural and Non-Structural Measures for Risk Mitigation, Role of Media, Education, and Civil Society in disaster management, Regional Issues Case studies							
Unit IV	Major Natural Disasters in India and Tamil Nadu -I India's Geo-Climatic Profile, Regional Vulnerability Patterns Across Tamil Nadu, Methods and Approaches in Vulnerability Assessment							
Unit V	Major Natural Disasters in India and Tamil Nadu -II Coastal Zone Vulnerabilities, Environmental and Socio-economic Vulnerability in the Coastal Plains, Highland Geomorphology and Erosion Vulnerability, Highland Geomorphology and Erosion Vulnerability							
Question paper Coverage - 100% theory								

Text book	1. Murthy, D. B. N. , <i>Disaster Management: Text and Case Studies</i> , Deep and Deep Publications. 2. Singh, R. B. , <i>Disaster Management, Global Challenges and Local Solutions</i> , Rawat Publications.			
Reference Book	1. Coppola, D. P. , <i>Introduction to International Disaster Management</i> , Butterworth-Heinemann. 2. Government of India , <i>National Policy on Disaster Management</i> , NDMA, New Delhi.			
E-Reference	1. NDMA India Portal : https://ndma.gov.in 2. UNDRR Prevention Web : https://www.preventionweb.net			
Course learning outcomes	On successful completion of the course, the students will be able to			
	COs	Course Outcomes	K L ev el	Learning Outcomes (LO1-LO15)
	CO1	Recall and describe basic hazards, classification paradigms, institutional frameworks, and disaster governance roadmaps.	K 1, K 2	LO1
	CO2	Apply geo-technical parameters, first-aid emergency procedures, and CBDRR strategies to mitigate field-level disaster risks.	K 3	LO4
	CO3	Analyze regional vulnerability patterns, geo-climatic data profiles, and the balance between structural and non-structural mitigation measures.	K 4	LO5
	CO4	Evaluate the efficacy of economic instruments, psychosocial support interventions, and the administrative performance of regional civil societies.	K 5	LO11
	CO5	Evaluate environmental and socio-economic vulnerabilities within vulnerable coastal and fragile highland geomorphologies.	K 5, K 6	LO2, LO13
	CO6	Design inclusive community-led response plans and structural framework models for localized disaster risk reductions.	K 6	LO3, LO6

Teaching–Learning & Assessment Framework

Teaching Methodology

Experiential Learning: Hands-on emergency simulations (triage modeling and mock drills) and participatory mapping of community-based vulnerability paths.

Blended Learning: Real-time analysis of GIS/Geo-Tech tracking tools and exploring spatial vulnerability databases from global DRR portals during dedicated tech laboratory hours.

Interactive Modules: Strategic problem-solving sessions focusing on policy implementation challenges and public administration parameters aligned with civil service competitive standards.

Assessment Types

Written Mode: Multi-hazard spatial mapping assignments, detailed case study evaluations focusing on recent extreme weather anomalies in Tamil Nadu, and structured periodic class examinations.

Oral Mode: Think-pair-share simulations focusing on immediate triage response coordination and panel presentations evaluating the socio-economic impacts of post-disaster recovery efforts.

Integrated Mode: Field-oriented poster presentations on community risk mitigation designs and a comprehensive SWOC analysis reviewing the structural vs non-structural resilience profiles of vulnerable regional coastal boundaries.
