B.Sc. Computer Science

Motto

Disseminating Technology in Young Minds.

ComSTA:

Vision

To endow young women to acquire specialized knowledge in Computer Science so to succeed in their profession, and contribute to society at large.

Mission

- Concentrate on the overall development of the students.
- To meet the challenges of industrial need.
- Better the nation through research in science and technology of computing.

Gnosis Club

Vision

GNOSIS inspires positive action and helps to create an environment of love respect and cooperation in society.

Mission

- To encourage the marginalized sectors of society.
- To proliferate the food with mortal by providing relevant and responsive programs.

Preamble

The B.Sc. Computer Science programme at St. Joseph's College of Arts and Science for Women, Hosur (Autonomous), is designed to empower women with a comprehensive education in computer science, preparing them for dynamic roles in the IT industry and advanced academic pathways. This programme blends technical excellence with value-based learning to foster holistic development.

The curriculum is structured to cover essential domains such as programming, database systems, operating systems, software engineering, web development, and contemporary technologies like Artificial Intelligence, Machine Learning, Cloud Computing, and Cybersecurity. It emphasizes both theoretical knowledge and practical application through major lab courses, projects, and internships.

In addition to core academic offerings, the department also conducts Bridge Courses to support first-generation learners and students from diverse academic backgrounds. Certificate Courses in emerging areas are offered to enhance employability and skill sets beyond the syllabus. Field visits to industries and tech hubs are organized to expose students to real-time applications of classroom learning.

The programme also integrates Capacity Development and Skill Enhancement Initiatives, helping students build soft skills, communication abilities, and leadership traits essential for their professional journey. As part of social learning and civic responsibility, the department encourages active participation in Outreach Activities that connect students with communities and societal issues.

Furthermore, students are sensitized to social and environmental issues through interdisciplinary subjects such as Women Studies, Environmental Studies, Human Rights, and Indian Knowledge System. These courses instill ethical awareness, inclusivity, and cultural sensitivity.

Supported by a team of experienced faculty and modern infrastructure, the programme provides a learner-centric environment that promotes innovation, collaboration, and independent thinking. It aims to produce graduates who are not only technically competent but also socially conscious and professionally committed.

Nature and Extent of the Programme

The **Bachelor of Science – Computer Science (B.Sc. CS)** is a foundational undergraduate programme that marks the entry point into the higher education framework in the field of computer science and applications, both in India and globally. As a versatile and industry-relevant degree, B.Sc. [CS] equips students with the necessary theoretical knowledge and practical skills to either pursue **immediate employment** or undertake **higher studies** in specialized areas of computer science.

Upon successful completion of the programme, graduates are well-prepared to explore diverse career opportunities in the **Information Technology (IT) industry, BPO services, Banking and Financial sectors**, and other digitally-driven domains. They may serve in roles such as **Software Engineer, Web Developer, System Analyst, Database Administrator, or IT Support Specialist**, contributing meaningfully to organizational growth and societal advancement.

The curriculum developed under the **Learning Outcomes-based Curriculum Framework (LOCF)** incorporates comprehensive and diversified aspects of computer applications. It emphasizes a balanced integration of **theoretical concepts, problem-solving skills, programming abilities**, and **professional competencies**. The programme also aims to impart a depth of knowledge that allows students to specialize in various domains of computing, while fostering innovation, critical thinking, and ethical responsibility.

Aim of the Programme

The primary aim of the **B.Sc. CS undergraduate programme** is to develop in students a robust understanding of the **core concepts and practical methodologies** in computer applications. The programme is designed to foster **technological awareness**, **skill development**, and **professional preparedness**, enabling students to become proficient in addressing real-world computing challenges.
To achieve this, the programme integrates:

- A well-structured **teaching-learning process** that delivers foundational and advanced knowledge in computing;

- **Hands-on laboratory experience** to strengthen practical problem-solving and application-building skills;
- **Opportunities for industry exposure** through guest lectures, workshops, internships, and expert interaction;
- Platforms for enhancing **communication, articulation, and presentation skills** essential for professional success.

Duration of the Programme

The B.Sc. CS programme shall extend over a period of **three academic years,** comprising **six semesters**. Each academic year shall consist of **two semesters**:

- **Odd Semester**: June to November
- **Even Semester**: December to May

Each semester shall have **a minimum of 90 working days**, exclusive of examination days.

Eligibility for Admission

A candidate shall be eligible for admission to the B.Sc. CS programme if she has passed the **Higher Secondary Examination of the Government of Tamil Nadu** or any other equivalent examination recognized by the University, with any one of the following subjects:

- Mathematics
- Business Mathematics
- Computer Science
- Computer Applications
- Statistics
- Information Technology
- Computer Technology

This includes both **Academic** and **Vocational** streams, as per the eligibility norms prescribed by the **Government of Tamil Nadu**. Those who have not studied must undergo a bridge course on Mathematics for a minimum duration for 15 days.

Credit Requirements and Eligibility for Award of Degree

A candidate shall be eligible for the **award of the B.Sc. CS degree** only if she has:

- Successfully completed the prescribed **course of study** in a college affiliated to the University for a **minimum duration of three academic years (six semesters)**.
- Passed all prescribed **semester examinations**.
- **Earned a minimum of 140 credits** as distributed under the following Parts:
    - **Part I** – Language
    - **Part II** – General English / Advanced English
    - **Part III** – Discipline Specific Core, Generic Specific Elective, Discipline Specific Elective, Professional Enhancement Course and Project
    - **Part IV** – Skill Enhancement Courses, Non-Major Electives, Internship, Environmental Studies, Digital Literacy, Women Studies and Indian Knowledge System
    - **Part V** – Extension Activity

The candidate must also have fulfilled any other requirements as prescribed by the College/University regulations for the award of the degree.

PROGRAMME OUTCOMES (POs)

PO1: Graduates will apply logic-based reasoning and analytical skills to evaluate and solve complex computing problems.
PO2: Graduates will communicate clearly and effectively using appropriate verbal, written, and digital modes in professional and social contexts.
PO3: Graduates will apply knowledge of programming languages, tools, and methodologies to design and develop software systems.
PO4: Graduates will integrate knowledge from mathematics, electronics, and data science to develop computing solutions.
PO5: Graduates will design innovative solutions using algorithmic and computational thinking to address societal or industrial needs.
PO6: Graduates will work effectively in diverse teams with leadership skills, contributing to collaborative projects and interdisciplinary tasks.
PO7: Graduates will apply ethical principles and commit to professional responsibilities in computing practice.
PO8: Graduates will recognize the need for self-directed learning and engage in continuous upskilling to remain relevant in a fast-changing technological world.
PO9: Graduates will demonstrate awareness about environmental issues and adopt sustainable IT practices.
PO10: Graduates will use digital tools, platforms, and emerging technologies effectively in academic, research, and professional settings.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1: Graduates will apply core concepts of computer science including data structures, operating systems, databases, and networking to build functional software systems.
PSO2: Graduates will demonstrate proficiency in multiple programming paradigms and platforms (C, Java, Python, Web Technologies, Android) for developing dynamic and scalable applications.
PSO3: Graduates will analyze real-world problems, design computational models, and implement optimized solutions using modern development tools and technologies.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Graduates will attain a solid foundation in Computer Science with practical knowledge of software and hardware systems to solve real-world problems effectively.
PEO2: Graduates will be competent in adapting to emerging trends in Information Technology and pursue higher education, research, or professional careers in the computing domain.
PEO3: Graduates will demonstrate ethical responsibility, teamwork, and leadership in their professional and societal engagements, contributing to national development and sustainability.

MAPPING OF PEO WITH PO AND PSO:

PEO \ Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
PEO1	3	2	3	3	3	2	2	2	2	3	3	3	3
PEO2	3	2	2	3	3	2	2	3	2	3	3	3	3
PEO3	2	2	2	2	3	3	3	2	3	2	2	2	2

3 = Strongly Related, 2 = Moderately Related, 1 = Slightly Related

Course Components and Credit Distribution

The curriculum framework for the B.Sc Computer Science programme under the autonomous structure is designed to ensure holistic academic development, skill enhancement, and societal contribution. The credit distribution across the various components is as follows:

S. No.	Study Components	Part	Sem I		Sem II		Sem III		Sem IV		Sem V		Sem VI		No. of Hours	Total Credit
			No. of Hours	Credit	No. of Hours	Credit	No. of Hours	Credit	No. of Hours	Credit	No. of Hours	Credit	No. of Hours	Credit		
1	Language	I	6	3	6	3	6	3	6	3					24	12
2	English	II	6	3	6	3	6	3	6	3					24	12
3	Core Course / DSC	III	8	7	9	7	8	7	9	7	20	16	14	11	68	55
4	Allied / GSE	III	5	4	5	4	5	4	5	4					20	16
5	Elective / DSE	III									8	8	8	8	16	16
6	PEC	III											2	2	2	2
7	Project	III											4	4	4	4
8	SEC	IV	3	2	2	2	3	2	2	2					10	8
9	NME	IV	2	2	2	2									4	4
10	Environmental Studies / IDC	IV					2	2							2	2
11	Digital Literacy / IDC	IV							2	2					2	2
12	Women Studies	IV									2	2			2	2
13	Indian Knowledge System / IDC	IV											2	2	2	2
14	Internship	IV										2				2
15	Extension Activity	V												1		1
	Total		**30**	**21**	**30**	**21**	**30**	**21**	**30**	**21**	**30**	**28**	**30**	**28**	**180**	**140**

Details of Course of Study for Parts I–V

PART I – Tamil and Other Languages

Students shall study Tamil or one of the other approved languages (e.g., Hindi or French), as per their choice and subject to availability. The syllabus and prescribed textbooks for these languages shall be periodically updated by the respective Boards of Studies and approved by the Academic Council of the College.

PART II – English

Courses in English aim to improve students' proficiency in language, literature, communication, and critical thinking. The curriculum and instructional materials are prepared by the Board of Studies of English and approved through the academic governance structure.

PART III – Core, Allied, Project and Elective Courses

This part comprises the Discipline Specific Core Courses, Generic Specific Elective, Discipline Specific Elective, Professional Enhancement Course and a Project in the final semester. The content and structure of these courses are prescribed by the respective Board of Studies in Computer Science and approved by the Academic Council to align with current academic and industry standards.

PART IV – Value and Skill-Oriented Courses

i. Non-Major Elective (NME):

- Students must choose **Non-Major Elective (NME)** comprising from the options offered by other departments.

ii. Additional Courses under Part IV:

- Skill Enhancement Courses (SEC)
- Environmental Studies
- Women studies
- Indian Knowledge System
- Internship

PART V – Extension Activity

Students shall earn **a maximum of 1 credit** through participation in **Compulsory Extension Services**. Every student must enrol in **NSS, Red Ribbon Club, Youth Red Cross, Field Work, Outreach Activities or any other Clubs** recognized by the College.

Inclusion of Massive Open Online Courses (MOOCs) via SWAYAM and NPTEL MOOC Courses for Credit Mobility

As part of the credit-based curriculum design and in alignment with the guidelines of higher education regulatory bodies, students are encouraged to enrol in Massive Open Online Courses (MOOCs) offered on SWAYAM or NPTEL platforms. These courses can be opted under Core, Elective, or Soft Skill categories. The student shall be eligible for award of the degree only upon submission of a valid certificate as proof of successful completion of the chosen MOOC course. **Two credits** will be given to candidates who successfully complete the course.

B.Sc. Computer Science Curriculum Design

First Year

Semester - I

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	I	Language I	25UTAM101 25UFRE101 25UHIN101 25UKAN101 25UTEL101 25UURD101	Tamil - I French - I Hindi - I Kannada - I Telugu - I Urdu - I	6	3	25	75	100
2	II	English I	25UGEN101 25UAEN101	General English - I Advanced English - I	6	3	25	75	100
3	III	DSC I	25UCS1C01	Python Programming **(Skill Development)**	5	5	25	75	100
4		DSC Practical I	25UCS1CP1	Practical I - Python Programming Lab **(Skill Development)**	3	2	25	75	100
5		GSE - Allied I		Allied Paper I	5	4	25	75	100
6	IV	SEC I	25UCS1SP1	SEC I - Procedural Programming using C - Lab **(Skill Development)**	3	2	25	75	100
7		SEC II NME I		NME I	2	2	25	75	100
Total					**30**	**21**	**175**	**525**	**700**

Semester – II

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	I	Language II	25UTAM202 25UFRE202 25UHIN202 25UKAN202 25UTEL202 25UURD202	Tamil - II French - II Hindi - II Kannada - II Telugu - II Urdu - II	6	3	25	75	100
2	II	English II	25UGEN202 25UAEN202	General English - II Advanced English - II	6	3	25	75	100

3	III	DSC II	25UCS2C02	Data Structure using C **(Skill Development)**	5	5	25	75	100
4		DSC Practical II	25UCS2CP2	Practical II - Data Structure using C Lab **(Skill Development)**	4	2	25	75	100
5		GSE - Allied II		Allied Paper II	3	3	25	75	100
6		GSE - Allied Practical I		Allied Practical I	2	1	25	75	100
7	IV	SEC III		SEC III	2	2	25	75	100
8		SEC IV NME II		NME II	2	2	25	75	100
Total					**30**	**21**	**200**	**600**	**800**

Second Year

Semester – III

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	I	Language III	25UTAM303 25UFRE303 25UHIN303 25UKAN303 25UTEL303 25UURD303	Tamil - III French - III Hindi - III Kannada - III Telugu - III Urdu - III	6	3	25	75	100
2	II	English III	25UGEN303 25UAEN303	General English - III Advanced English - III	6	3	25	75	100
3	III	DSC III	25UCS3C03	Object-Oriented Programming using C++ **(Skill Development)**	5	5	25	75	100
4		DSC Practical III	25UCS3CP3	Practical III - Object-Oriented Programming using C++ Lab **(Skill Development)**	3	2	25	75	100
5	III	GSE - Allied III		Allied Paper III	5	4	25	75	100
6	IV	SEC V		SEC V	3	2	25	75	100
7		IDC	25UEVS301	Environmental Studies	2	2	25	75	100
8				Health and Wellness *					
Total					**30**	**21**	**175**	**525**	**700**

Semester – IV

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	I	Language IV	25UTAM404 25UFRE404 25UHIN404 25UKAN404 25UTEL404 25UURD404	Tamil - IV French - IV Hindi - IV Kannada - IV Telugu - IV Urdu - IV	6	3	25	75	100
2	II	English IV	25UGEN404 25UAEN404	General English - IV Advanced English - IV	6	3	25	75	100
3	III	DSC IV	25UCS4C04	Application Development using Java **(Skill Development, Employability)**	5	5	25	75	100
4		DSC Practical IV	25UCS4CP4	Practical IV - Application Development using Java Lab **(Skill Development, Employability)**	4	2	25	75	100
5		GSE – Allied IV		Allied Paper IV	3	3	25	75	100
6		GSE - Allied Practical II		Allied Practical II	2	1	25	75	100
7	IV	SEC VI		SEC VI	2	2	25	75	100
8		IDC	25UDIL401	Digital Literacy	2	2	25	75	100
Total					**30**	**21**	**200**	**600**	**800**

Third Year

Semester – V

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	III	DSC V	25UCS5C05	R Programming **(Employability)**	5	5	25	75	100
2		DSC Practical V	25UCS5CP5	R Programming Lab **(Employability, Skill Development)**	5	3	25	75	100

3		DSC VI	25UCS5C06	Relational Database Management System **(Skill Development)**	5	5	25	75	100
4		DSC Practical VI	25UCS5CP6	Practical V - RDBMS Lab **(Skill Development)**	5	3	25	75	100
5		DSE I		Elective I	4	4	25	75	100
6		DSE II		Elective II	4	4	25	75	100
7	IV	IDC	25UWOS501	Women Studies	2	2	25	75	100
8		Internship	25UCS5INT	Internship	-	2	-	-	-
Total					**30**	**28**	**175**	**525**	**700**

Semester – VI

S. No	Part	Nature of the Course	Course Code	Name of the Course	Hours per Week	Credits	Marks		
							CIA	ESE	Total
1	III	DSC VII	25UCS6C07	ASP.NET Programming **(Skill Development)**	5	5	25	75	100
2		DSC Practical VII	25UCS6CP7	Practical VI - ASP.NET Programming Lab **(Skill Development)**	4	2	25	75	100
3		DSC VIII	25UCS6C08	Operating System (**Skill Development, Employability**)	5	4	25	75	100
4		DSE III		Elective III	4	4	25	75	100
5	III	DSE IV		Elective - IV	4	4	25	75	100
6		PEC	25UPEC601	Essential Aptitude and Logical Thinking	2	2	25	75	100
7		Project	25UCS6PRV	Project	4	4	50	50	100
8	IV	IDC	25UIKS601	Indian Knowledge System	2	2	25	75	100
9	V	Extension	25UEXT601	Extension Activity	-	1	-	-	-
Total					**30**	**28**	**225**	**575**	**800**
Grand Total					**180**	**140**	**1150**	**3350**	**4500**

		Extra Credit	Mandatory	Extra Credit - Swayam/MOOC/NPTEL Online Course	-	2	-	-	-
		Extra Credit	Not Mandatory	Self-Study	-	2	-	-	-
	*	Extra Credit	Semester III	Health and Wellness	-	1	-	-	-

DSC	Discipline Specific Core
GSE	Generic Specific Elective - Allied
DSE	Discipline Specific Elective
NME	Non-Major Elective
IDC	Inter Disciplinary Course
SEC	Skill Enhancement Course
PEC	Professional Efficiency Course

Discipline Specific Elective Courses

Semester	Part	Nature of the Course	Course Code	Name of the Course
V	III	DSE – I	25UCS5E01	Agile Project Management **(Employability, Entrepreneurship)**
			25UCS5E02	Architecture of Microprocessor and Microcontroller **(Skill Development)**
			25UCS5E03	Computer Networks: From OSI to Security **(Skill Development, Employability)**
		DSE – II	25UCS5E04	Data mining and Warehousing **(Skill Development)**
			25UCS5E05	Internet of Things **(Skill Development, Employability)**
			25UCS5E06	Big Data Analytics **(Skill Development)**
VI	III	DSE – III	25UCS6E01	Artificial Intelligence **(Employability)**
			25UCS6E02	Virtual Reality **(Employability, Entrepreneurship)**
			25UCS6E03	Cyber Threats and Security Management **(Skill Development, Employability)**
		DSE – IV	25UCS6E04	UI Design **(Skill Development, Employability)**
			25UCS6E05	Analytics for Service Industry **(Skill Development, Employability, Entrepreneurship)**
			25UCS6E06	Industry-Oriented Data models & NoSQL **(Skill Development, Employability, Entrepreneurship)**

Skill Enhancement Courses

Semester	Part	Nature of the Course	Course Code	Name of the Course
I	IV	SEC I	25UCS1SP1	Procedural Programming using C - Lab **(Skill Development)**
II	IV	SEC III	25UCS2SE1	PHP Programming **(Employability, Skill Development)**
			25UCS2SE2	Digital Computer Fundamentals **(Skill Development)**
III	IV	SEC V	25UCS3SP1	Mobile Application Development Lab **(Employability, Entrepreneurship, Skill Development)**
			25UCS3SP2	Advanced Excel **(Skill Development, Employability)**
IV	IV	SEC VI	25UCS4SE1	Robotics and its Applications **(Employability, Entrepreneurship)**
			25UCS4SE2	Cyber Forensics **(Employability)**

Non-Major Elective Courses

Subjects offered by the Department of Computer Science

Semester	Part	Nature of the Course	Course Code	Name of the Course
I	IV	NME I	25UCS1NM1	Fundamentals of Information Technology **(Skill Development)**
			25UCS1NM2	Office Automation **(Skill Development, Employability)**
II	IV	NME II	25UCS2NM1	Multimedia Systems **(Employability)**
			25UCS2NM2	Introduction to HTML **(Skill Development, Employability)**

Allied Courses offered to the Department of Computer Science

Semester	Part	Nature of the Course	Course Code	Name of the Course
I	III	GSE – I	25UMA1A01	Linear Algebra-I **(Skill Development)**
			25UMA1A02	Allied Mathematics – I **(Skill Development)**
			25UMA1A03	Allied Mathematical Statistics- I **(Skill Development)**
II	III	GSE – II	25UMA2A04	Linear Algebra-II **(Skill Development)**
			25UMA2AP1	Linear Algebra Practical **(Employability)**
			25UMA2A05	Allied Mathematics - II **(Skill Development)**
			25UMA2AP2	Allied Mathematics - II Practical **(Employability)**

			25UMA2A06	Allied Mathematical Statistics- II **(Skill Development)**
			25UMA2AP3	Allied Statistics - II Practical **(Employability)**
III	III	GSE – III	25UMA3A07	Discrete Mathematics- I **(Skill Development)**
			25UMA3A08	Optimization Techniques- I **(Employability)**
			25UPH3A01	Fundamentals of Physics: Elasticity, Heat, Waves and Electromagnetism **(Skill Development)**
IV	III	GSE – IV	25UMA4A12	Discrete Mathematics- II **(Skill Development)**
			25UMA4AP4	Discrete Mathematics- II Practical **(Employability)**
			25UMA4A13	Optimization Techniques- II **(Employability)**
			25UMA4AP5	Optimization Techniques- II Practical **(Employability)**
			25UPH4A02	Advanced Physics and Electronics **(Skill Development)**
			25UPH4AP1	Material Properties and Electronics Experiments **(Employability)**

Allied Courses offered by the Department of Computer Science

Semester	Part	Nature of the Course	Course Code	Name of the Course
I	III	GSE – I	25UCS1A01	C Programming **(Skill Development)**
			25UCS1AP1	C Programming Lab **(Skill Development)**
			25UCS1A02	Problem Solving Through C **(Skill Development)**
II	III	GSE – II	25UCS2A03	Office Automation for Business **(Skill Development, Employability)**
			25UCS2AP2	Office Automation for Business Lab **(Skill Development, Employability)**
II	III	GSE – II	25UCS2A04	Management Information System **(Employability)**
III	III	GSE – III	25UCS3A05	Web Technology(HTML) **(Skill Development, Employability)**
			25UCS3AP3	Web Technology(HTML) Lab **(Skill Development, Employability)**
			25UCS3A06	Internet and Web Designing **(Skill Development, Employability)**
IV	III	GSE – IV	25UCS4A07	Core Python Concepts **(Skill Development, Employability)**
			25UCS4AP4	Core Python Concepts Lab **(Skill Development, Employability)**

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1C01	**PYTHON PROGRAMMING**	**DSC THEORY**	**I**	**75**	**5**	**-**	**-**	**5**
Objective: To introduce the fundamentals of Python programming and problem-solving using structured and object-oriented approaches.								

Unit	Course Content	Knowledge Levels	Sessions
I	Basics of Python Programming: History of Python - Features of Python - Literal Constants -Variables - Identifiers-Keywords - **Built-in Data Types**** Output Statements - Input Statements- Comments -Indentation- Operators Expressions - Type conversions. Python Arrays: Defining and Processing Arrays - Array methods. ****SDG 4 – Quality Education**	K1	15
II	Control Statements: Selection / Conditional Branching statements: if, if else, nested if and if-elif -else statements. **Iterative Statements**:** while loop, for loop, else suite in loop and nested loops. Jump Statements: break, continue and pass statements. ****SDG 9 – Industry, Innovation & Infrastructure**	K2	15
III	Functions: Function Definition - Function Call - Return Statement. Function Arguments, **Recursion****. Python Strings: String operations- Built-in String Methods and Functions - String Comparison. Modules: import statement- The Python module - dir() function - Namespace-Defining our own modules. ****SDG 17 – Partnerships for the Goals**	K3	15
IV	Lists: Creating a list- Access values in List-Updating values in Lists Nested lists Basic list operations-List Methods. **Tuples****: Creating, Accessing, Updating and Deleting Elements in a tuple-Nested tuples- Difference between lists and tuples. Dictionaries: Creating, Accessing, Updating and Deleting Elements in a Dictionary-Dictionary Functions and Methods Difference between Lists and Dictionaries. ****SDG 8 – Decent Work & Economic Growth**	K4	15
V	Python File Handling: Types of **files in Python**** -Opening and Closing files Reading and Writing files: write() and writelines() methods append() method -read() and readlines() methods-with keyword-Splitting words -File Methods-File Positions-Renaming and deleting files. ****SDG 16 – Peace, Justice, and Strong Institutions**	K3	15

Course Outcome	**CO1:** Understand the fundamentals of Python programming, including data types, variables, operators, input/output, comments, indentation, and arrays.	K1
	CO2: Apply control statements, loops, functions, recursion, string operations, and modules to implement Python programs.	K2
	CO3: Analyze and manipulate Python data structures including lists, tuples, and dictionaries effectively.	K3
	CO4: Apply file handling techniques for reading, writing, and managing files in Python programs.	K4
	CO5: Develop integrated Python applications combining programming constructs, data structures, and file handling.	K3

Learning Resources	
Text Books	1.Reema Thareja, "Python Programming using problem solving approach", First Edition, 2017, Oxford University Press. 2. Dr. R. Nageswara Rao, "Core Python Programming", First Edition, 2017, Dream tech Publishers. 3. Dhina Suresh, D., Aswini, G., Jayanthi, P., & Anusha Prem, I. Problem solving Text using Python. Charulatha Publications.
Reference Books	1. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st Edition. 2. John Zelle, "Python Programming: An Introduction to Computer Science", Second edition, Course Technology Cengage Learning Publications, 2013.
Website Link	1. https://onlinecourses.swayam2.ac.in/cec22_cs20/preview 2. https://www.geeksforgeeks.org/python/ 3. https://www.programiz.com/python-programming/ 4. https://www.programiz.com/python-programming/
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**	**PSO3**
CO1	3	1	3	2	2	-	1	2	-	2	3	2	2
CO2	3	2	3	2	3	1	1	2	-	2	3	3	2
CO3	3	2	3	2	3	1	1	2	-	2	3	3	3
CO4	3	1	3	2	3	1	1	2	-	2	3	3	3
CO5	3	2	3	2	3	2	1	3	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Princy T.M	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc., Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1CP1	**PRACTICAL I - PYTHON PROGRAMMING LAB**	**DSC PRACTICAL**	**I**	**45**	**-**	**-**	**3**	**2**

Objective:

To introduce the fundamentals of computers and Python programming, enabling students to develop problem-solving skills using algorithms, data structures, functions, and file handling techniques.

Sl. No	Course Content	Knowledge Levels	Sessions
	SDG 8 – Decent Work & Economic Growth		
1	Simple Calculator using Input/Output and Operators	K3	5
2	Grade Calculator using If-Elif-Else Conditions	K3	4
3	Prime Number Checker using Loops and Boolean Flag	K4	4
4	Palindrome String Checker	K3	4
5	List Operations: Sum, Max, Min, and Sorting	K3	5
6	Stack and Queue Implementation using Lists	K4	5
7	Factorial of a Number using Recursion	K4	4
8	Drawing Shapes using Turtle Graphics	K3	5
9	Word Frequency Counter using Dictionary and Set	K4	4
10	File Read/Write with Exception Handling	K5	5

Course Outcome	**CO1**: Understand the basic components of a computer system, software types, and the role of programming languages.	K1, K3
	CO2: Develop simple Python programs using variables, expressions, operators, and input/output statements.	K2, K3
	CO3: Apply decision-making and iterative control structures to solve algorithmic problems.	K3, K4
	CO4: Use strings, lists, stacks, queues, dictionaries, and sets in Python for data handling.	K3, K4
	CO5: Implement modular programming using functions, recursion, and variable scope effectively.	K4

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	1	2	1	2	2	2	1
CO2	3	1	3	2	2	1	1	2	1	2	3	3	2
CO3	3	1	3	2	3	1	1	2	1	2	3	3	3
CO4	3	1	3	2	3	1	1	2	1	2	3	3	3
CO5	3	2	3	2	3	2	2	2	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Aswini G	**Verified By HOD: Mrs. Anto Ramya S.I**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D., Professor, Department of Computer Science, Periyar University, Salem -11	Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D., Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D., Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
Mr. C. Rajiv Sharma M.Tech., Founder & CEO, NebulaSafe Tech, Hosur	Ms. U. Preethi Kumari M.Tech., Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1SP1	**PROCEDURAL PROGRAMMING USING C - LAB**	**SEC PRACTICAL**	**I**	**45**	**-**	**-**	**3**	**2**

Objective:

To introduce students to the fundamentals of C programming including data types, control structures, arrays, functions, pointers, and structures. The course aims to build logical thinking and problem-solving skills through hands-on implementation of real-time programs.

Sl. No.	List of Programs	Knowledge Levels	Sessions
SDG 4 – Quality Education SDG 9 – Industry, Innovation & Infrastructure			
1	Create a program to Temperature conversion problem (Fahrenheit to Celsius)	K3	4
2	Program to perform addition, subtraction, multiplication and division	K3	4
3	Program to check if a number is even or odd	K3	4
4	Create a program to find Fibonacci series	K3	4
5	Create a program to generate Prime numbers in an array	K4	4
6	Program to find sum of two numbers using function with return value	K3	5
7	Program to add two matrices (2D array)	K3	5
8	Create a program for Factorial using recursion	K4	5
9	Program to swap two numbers using pointers	K3	5
10	Program to create and display student records using structures	K4	5

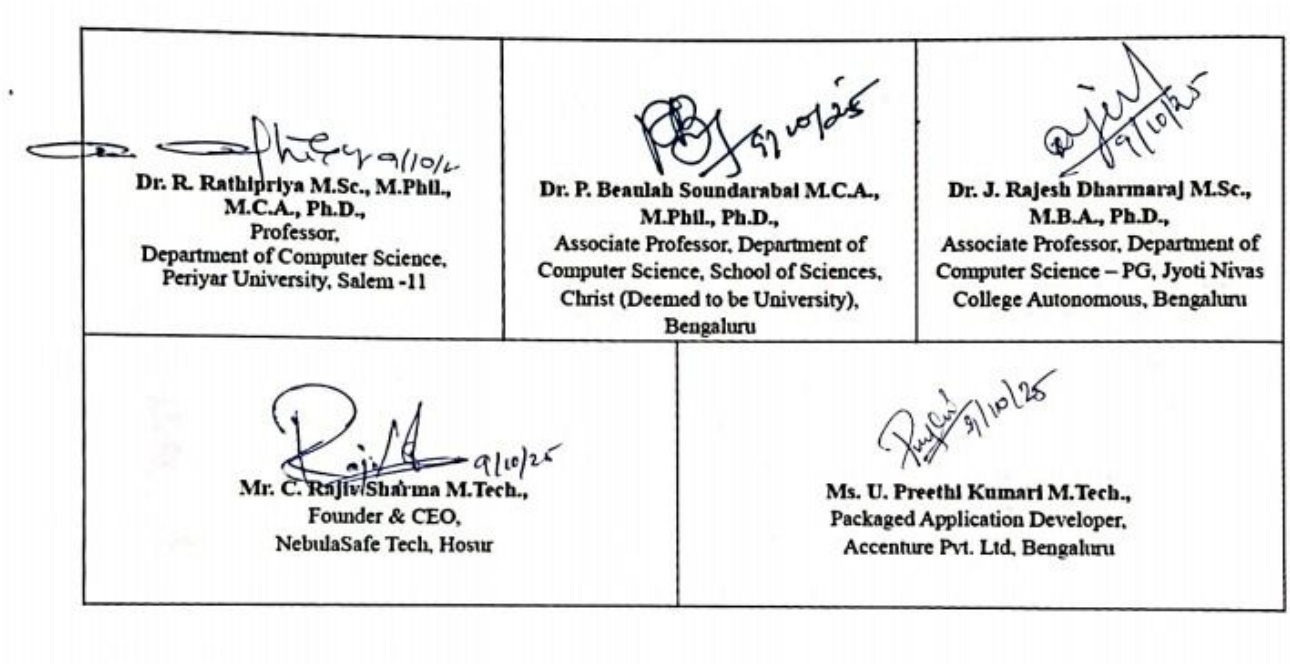
Course Outcome	**CO1:** Understand the basic syntax, structure, and operations of C programming including input/output, data types, and operators.	K2
	CO2: Apply control flow statements such as decision-making and looping to develop logic for real-world problems like even/odd checks, Fibonacci series, and prime numbers.	K4
	CO3: Develop and use user-defined functions and recursion to create modular and efficient C programs.	K3, K4
	CO4: Work with arrays and matrices to perform mathematical operations such as matrix addition and prime number generation.	K3
	CO5: Implement concepts of pointers and structures to manage memory and complex data types effectively.	K4

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	1	-	2	-	2	3	3	2
CO2	3	-	3	2	2	-	1	2	1	2	3	3	3
CO3	3	-	3	2	2	-	-	2	1	2	3	3	3
CO4	3	1	3	2	1	1	-	2	-	2	3	3	3
CO5	3	-	3	2	2	-	1	2	-	2	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Anusha Prem I.	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**



B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2C02	**DATA STRUCTURE USING C**	**DSC THEORY**	**II**	**75**	**5**	**-**	**-**	**5**

Objective:

To equip students with a strong foundation in data structures and algorithm design techniques for efficient problem-solving. The course aims to develop the ability to implement, analyze, and apply various data structures in real-world computing scenarios.

Unit	Course Content	Knowledge Levels	Sessions
I	Abstract Data Types (ADTs)- List ADT-array-based implementation linked list implementation **singly linked lists****-circular linked lists-doubly linked lists-applications of lists-Polynomial Manipulation- All operations Insertion-Deletion-Merge-Traversal ****SDG 9 – Industry, Innovation and Infrastructure**	K1, K2, K3	15
II	Stack ADT-Operations- Applications- Evaluating arithmetic expressions - Conversion of infix to postfix expression-Queue ADT-Operations-**Circular Queue****-Priority Queue- Queue applications of queues. ****SDG 11 – Sustainable Cities and Communities**	K1, K2	15
III	Tree ADT-tree traversals-Binary Tree ADT-expression trees-applications of trees-**binary search tree ADT****-Threaded Binary Trees-AVL Trees- BTree- B+ Tree - Heap-Applications of heap. ****SDG 12 – Responsible Consumption and Production**	K2, K3, K4	15
IV	Definition- **Representation of Graph****- Types of graph-Breadth first traversal - Depth first traversal-Topological sort- Bi-connectivity - Cut vertex Euler circuits-Applications of graphs ****SDG 13 – Climate Action**	K2, K3, K4	15
V	**Searching- Linear search**** - Binary Search - Sorting-Bubble sort - Selection sort Insertion sort-Shell sort - Radix Sort-Hashing-Hash Functions-Separate chaining-Open Addressing-Rehashing Extendible Hashing ****SDG 7 – Affordable and Clean Energy**	K2, K3, K4, K5	15

Course Outcome	**CO1:** Understand the fundamentals of Python programming, including data types, variables, operators, input/output, comments, indentation, and arrays.	K1, K2
	CO2: Apply control statements, loops, functions, recursion, string operations, and modules to implement Python programs.	K2, K3
	CO3: Analyze and manipulate Python data structures including lists, tuples, and dictionaries effectively.	K3, K4
	CO4: Apply file handling techniques for reading, writing, and managing files in Python programs.	K4, K5
	CO5: Develop integrated Python applications combining programming constructs, data structures, and file handling.	K3, K5

Learning Resources	
Text Books	Reema Thareja, Data Structures Using C, Oxford University Press, 2014.
Reference Books	1.Mark Allen Weiss, ―Data Structures and Algorithm Analysis in C++, Pearson Education 2014, 4th Edition. 2. ReemaThareja, ―Data Structures Using C‖, Oxford Universities Press 2014, 2nd Edition
Website Link	1. https://www.programiz.com/dsa – Data Structures 2. https://www.coursera.org/specializations/data-structures-algorithms – Data Structures and Algorithm Specialization
L – Lecture T – Tutorial P – Practical C – Credit	

Mapping of CO's with PO's and PSO's

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	3	2	2	-	1	2	-	2	3	2	2
CO2	3	2	3	2	3	1	1	2	2	2	3	3	2
CO3	3	2	3	2	3	1	1	2	2	2	3	3	3
CO4	3	1	3	2	3	1	1	2	2	2	3	3	3
CO5	3	2	3	2	3	2	1	3	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Anusha Prem I	Verified By HOD: Mrs. S. I. Anto Ramya
Checked By CDC: Dr. Reena Raj	Approved By: Dr. J. Caroline Rose Principal

9/10/25 Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D., Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D., Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D., Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 Mr. C. Rajiv Sharma M.Tech., Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 Ms. U. Preethi Kumari M.Tech., Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2CP2	**DATA STRUCTURE USING C- LAB**	**DSC PRACTICAL**	**II**	**60**	**-**	**-**	**4**	**2**

Objective:

To provide hands-on experience in implementing fundamental data structures such as arrays, linked lists, stacks, queues, trees, and graphs using C programming. The objective is to enable students to analyze and apply algorithmic techniques like searching, sorting, and traversal for solving computational problems efficiently.

Sl. No.	List of Programs	Knowledge Levels	Sessions
SDG 4 – Quality Education			
1	Write a program to implement the List ADT using arrays and linked lists.	K1	6
2	Write a programs to implement the following using a singly linked list. i)Stack ADT ii) Queue ADT	K2	6
3	Write a program that reads an infix expression, converts the expression to postfix form and then evaluates the postfix expression (use stack ADT).	K2, K3	6
4	Write a program to perform the following operations: • Insert an element into a binary search tree. • Delete an element from a binary search tree. • Search for a key element in a binary search tree	K3, K4	6
5	Write a program to perform the following operations • Insertion into an AVL-tree • Deletion from an AVL-tree	K3, K4	6
6	Write a program for the implementation of BFS and DFS for a given graph	K4	8
7	Write a program for implementing the following searching methods: • Linear search • Binary search.	K4	10
8	Write a program for implementing the following sorting methods: • Bubble sort • Selection sort • Insertion sort • Radix sort.	K4, K5	12

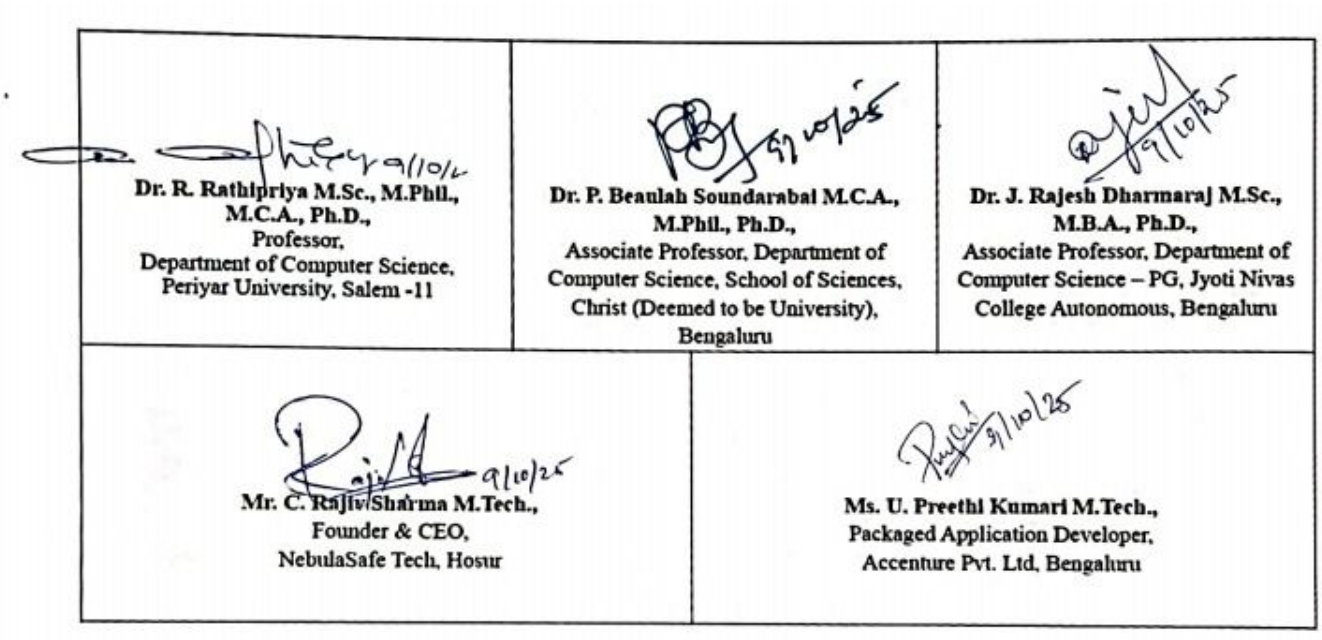
Course Outcome	**CO1:** Understand and differentiate between various data structures like arrays, linked lists, stacks, queues, trees, and graphs.	K2
	CO2: Apply suitable data structures for solving real-world computational problems using C.	K3
	CO3: Implement linear and non-linear data structures and perform operations such as insertion, deletion, traversal, and searching.	K3
	CO4: Analyze the time and space complexity of searching, sorting, and traversal algorithms.	K4
	CO5: Evaluate and apply appropriate algorithmic techniques like sorting, searching, and graph traversal for optimization and efficiency.	K5

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	1	2	2	2	1	1	2	1	2	3	2	2
CO2	3	1	3	2	3	1	1	2	1	3	3	3	3
CO3	3	1	3	2	3	1	1	2	1	3	3	3	3
CO4	3	1	2	2	3	1	1	3	1	2	3	2	3
CO5	3	1	3	2	3	1	1	3	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Anusha Prem I	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**



B.SC Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2SE1	**PHP PROGRAMMING**	**SEC THEORY**	**II**	**30**	**2**	**-**	**-**	**2**

Objective:
To introduce the basics of PHP scripting and web form handling .Understand server-side scripting, PHP syntax, variables, operators, and control structures to create dynamic web pages**.**

Unit	Course Content	Knowledge Levels	Sessions
I	**PHP crush course: creating a sample application** – embedding php in html** – adding dynamic content**** – accessing form variables - identifiers – variable types – constants - using operators – making decisions with conditionals - repeating actions through iteration ****SDG 9 – Industry, Innovation and Infrastructure**	K3	6
II	**Storing and retrieving data:** opening a file – writing a file - closing a file - reading from a file - using arrays - numerically indexed arrays - arrays with different indices – array operators – multidimensional arrays – sorting arrays - **String manipulation and regular expressions** – formatting strings** - comparing strings**** ******SDG 4 – Quality Education**	K3, K4	6
III	**Object oriented php:** Error and exception handling - **using MySQL** – Designing your web database** - creating your web database**** - working with your MySQL database – Accessing your MySQL database from the web with php – advanced MySQL programming ****SDG 8 – Decent Work and Economic Growth**	K4, K5	6
IV	**Web application security: Building a secure web application**** – Advanced php techniques - interacting with the file system and the server - generating images ****SDG 16 – Peace, Justice and Strong Institutions**	K4, K5	6
V	**Building practical php and MySQL projects :** using php and MySQL for large projects - **building user authentication and personalization**** ******SDG 11 – Sustainable Cities and Communities**	K3, K4, K5	6

Course Outcome	**CO1:** Demonstrate the ability to embed PHP in HTML and develop simple dynamic web pages. Apply variables, constants, operators, conditionals, and loops to create interactive applications.	K3
	CO2: Implement file handling operations to store and retrieve data efficiently. Use various array types, sorting techniques, and string manipulation methods to process textual data.	K3, K4
	CO3: Apply object-oriented concepts and exception handling to build robust PHP applications. Design, create, and interact with MySQL databases using PHP for dynamic data-driven websites**.**	K4, K5
	CO4: Implement secure coding practices to protect web applications from common security threats. Utilize advanced PHP features to work with the file system, server environment, and generate dynamic media.	K4, K5
	CO5: Develop large-scale PHP and MySQL projects with user authentication and personalization features. Integrate PHP and MySQL in real-world scenarios to deliver scalable, maintainable web solutions.	K3, K4, K5

Learning Resources	
Text Books	PHP and MySQL Web Development, Luke Welling & Laura Thomson, Pearson Education,5th Edition or Latest,ISBN: 978-0321833891
Reference Books	1.Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5, Robin Nixon Publisher: O'Reilly Media,6th Edition or Latest,SBN: 978-1491978917 2.PHP: A Beginner's Guide,Vikram Vaswani,Publisher: McGraw-Hill Education, ISBN: 978-0071633033 3. Programming PHP, Kevin Tatroe, Peter MacIntyre, Rasmus Lerdorf (PHP creator) Publisher: O'Reilly Media,ISBN: 978-1449392772 4. Modern PHP: New Features and Good Practices, Josh Lockhart, O'Reilly Media ISBN: 978-1491905012
Website Link	1.https://ptgmedia.pearsoncmg.com/images/9780321833891/samplepages/9780321833891.pdf 2.https://www.oreilly.com/library/view/php-and-mysql/9780133038644/
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	2	3	1	1	1	1	2	1	3	3	1
CO2	3	3	2	3	2	1	1	1	2	1	3	3	-
CO3	3	3	3	3	2	-	1	1	2	1	3	3	3
CO4	3	3	3	3	2	1	1	3	2	-	3	3	2
CO5	3	3	3	3	3	2	2	3	3	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By : Mrs. R. Geetha	**Verified By HOD : Mrs. S. I. Anto Ramya**
Checked By CDC : Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D., Professor, Department of Computer Science, Periyar University, Salem -11	Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D., Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D., Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
Mr. C. Rajiv Sharma M.Tech., Founder & CEO, NebulaSafe Tech, Hosur	Ms. U. Preethi Kumari M.Tech., Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B. Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2SE2	**DIGITAL COMPUTER FUNDAMENTALS**	**SEC THEORY**	**II**	**30**	**2**	**-**	**-**	**2**

Objective:

To introduce students to the fundamental concepts of number systems, digital codes, and error detection techniques. It aims to develop a deep understanding of logic gates, Boolean algebra, and logic simplification methods for the efficient design of digital circuits.

Unit	Course Content	Knowledge Levels	Sessions
I	NUMBER SYSTEM AND CODES: Decimal Numbers, Binary Numbers, Decimal to Binary Conversions, Binary Arithmetic, 1's and 2's complements of Binary Numbers, Signed Numbers, Arithmetic Operations with Signed numbers, Hexadecimal Numbers, Octal Numbers, Digital Codes, **Error Detection Codes**** ****SDG 9 – Industry, Innovation and Infrastructure**	K2	6
II	LOGIC GATES: The Inverter, The AND gate, The OR gate, The NAND gate, NOR gate, The Exclusive–OR gate and Exclusive-NOR gate; **Boolean Algebra and Logic Simplification****- Boolean Operations and Expressions, Laws and Rules, DeMorgan's Theorems, Boolean Expressions and Truth Tables, **The Karnaugh Map, SOP minimizations**** ****SDG 4 – Quality Education**	K3	6
III	COMBINATIONAL LOGIC ANALYSIS: Basic combinational Logic Circuits, Implementing Combinational Logic, The Universal Property of NAND and NOR Gates. Functions of Combinational Logic - Basic Adder, Parallel Binary Adders, Comparators, Decoders, Encoders, Code Converters, Multiplexers, **Parity Generator/Checkers**** ****SDG 16 – Peace, Justice and Strong Institutions**	K4	6
IV	LATCHES AND FLIP-FLOPS: Latches, Edge Triggered Flip-Flops, Flip-Flop Operating characteristics, Flip-Flop Applications, **Registers, Counters****. ****SDG 8 – Decent Work and Economic Growth**	K3	6
V	MEMORY AND STORAGE: Memory Basics, The RAM, The ROM, Programmable ROMs, The Flash Memory, Memory Expansion, Special Types of Memories, **Magnetic and Optical Storage**.** ****SDG 12 – Responsible Consumption and Production**	K4	6

Course Outcome	**CO1:** Identify the logic gates and their functionality.	K2
	CO2: Perform number conversions from one system to another system.	K3
	CO3: Design basic electronic circuits (combinational circuits).	K4
	CO4: Perform a comparative analysis of the components of different memory units.	K4
	CO5: Perform number conversions.	K3

Learning Resources	
Text Books	1. Floyd, Thomas L, "Digital Computer Fundamentals", 10th Edition, University Book Stall, 1997.
Reference Books	1. Malvino, Paul Albert and Leach, Donald P, "Digital Principles and Applications", 4 th Edition, TMH, 2000. 2. Malvino, Paul Albert and Leach, Donald P, "Digital Computer Fundamentals", 3 rd Edition, TMH, 1995. 3. Bartee, Thomas C, "Digital Computer Fundamentals", 6th Edition, TMH, 1995.
Website Link	1. https://www.coursera.org/learn/digital-systems 2. https://nptel.ac.in/courses/117/106/117106086/
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**	**PSO3**
CO1	3	1	2	2	2	1	2	-	1	2	3	2	2
CO2	3	-	2	1	2	-	-	2	-	1	3	1	2
CO3	3	2	3	2	3	2	2	-	1	2	3	3	3
CO4	2	-	2	2	2	1	2	1	2	1	3	2	3
CO5	3	1	2	1	2	-	1	1	-	1	2	1	2

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. V. Niranjana	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1NM1	**FUNDAMENTALS OF INFORMATION TECHNOLOGY**	**SEC/NME THEORY**	**I**	**30**	**2**	**-**	**-**	**2**

Objective:
To provide foundational knowledge of information technology, computer hardware, software, memory systems, and operating systems for non - major students to enhance digital literacy and practical competence.

Unit	Course Content	Knowledge Levels	Sessions
I	**Fundamentals of Information Technology and Computers:** Basics of Information Technology - Information System (IS) - Classification of Information Systems - **Security Issues in Information Technology**** - Characteristics of Computers - Capabilities and Limitations of Computers - Generations of Computers - Classification of Computers - Parallel Computing - Distributed Systems - Personal Computer (PC) ****SDG 16 – Peace, Justice, and Strong Institutions**	K1, K2	6
II	**Computer Hardware and Peripherals:** Introduction - Input Devices - Output Devices - FireWire Universal Serial Bus (USB) - Sound Card - Graphics Card - Blu - Ray – **Bluetooth**** ****SDG 9 – Industry, Innovation & Infrastructure**	K2, K3	6
III	**Computer Memory Systems**: Basic Concepts of Memory - Memory Device Organization - Read - Only Memory (ROM) - Random Access Memory (RAM) - Memory Expansion - Surface **Storage Devices** - Special Memories**** ****SDG 12 – Responsible Consumption & Production**	K2, K3	6
IV	**Computer Software**: Introduction - Types of Software - Computer Algorithm - Software Development - Program Preparation - Computer Languages - Programming Languages - Graphics Software - Data **Communication Software**** ****SDG 17 – Partnerships for the Goals**	K2, K4	6
	Operating Systems: Introduction - History and Evolution of Linux - MS - DOS and MS - Windows - Web Browsers -		

V	**Database Management Systems (DBMS)**** ****SDG 11 – Sustainable Cities & Communities**	K2, K4, K5	6

Course Outcome	**CO1:** Understand the basics of Information Technology and types of Information Systems.	K1, K2
	CO2: Describe the functions of computer hardware and peripheral devices.	K2, K3
	CO3: Explain the organization and types of computer memory and storage.	K2, K3
	CO4: Analyze various types of software and the process of software development.	K4
	CO5: Evaluate operating systems, web browsers, and database systems.	K4, K5

Learning Resources	
Text Books	1.Anoop Mathew, S. KavithaMurugeshan (2009), ― Fundamental of Information Technology‖, Majestic Books.
Reference Books	1.GG WILKINSON, ―Fundamentals of Information Technology, Wiley - Blackwell. 2. A Ravichandran, ―Fundamentals of Information Technology‖, Khanna Book Publishing
Website Link	1.https://www.geeksforgeeks.org/computer-science- computer - fundamentals/ 2.https://www.tutorialspoint.com/computer_fundamentals/index.htm
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	1	2	2	1	3	3	2	2
CO2	3	2	3	2	2	-	2	2	1	3	3	3	2
CO3	3	2	3	2	2	1	2	2	1	3	3	3	3
CO4	3	2	3	3	3	1	2	2	-	3	3	3	3
CO5	3	2	3	3	3	-	2	2	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. D. T. Vimala	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1NM2	**OFFICE AUTOMATION**	**SEC /NME THEORY**	**I**	**30**	**2**	**-**	**-**	**2**

Objective:

The objective of this course is to equip students with practical skills in using Microsoft Office applications, including MS Word, Excel, PowerPoint, and Access. It aims to enable students to create and format documents, perform data analysis using formulas and charts, design effective presentations with animations, and manage basic databases by creating tables, queries, forms, and reports.

Unit	Course Content	Knowledge Levels	Sessions
I	**Microsoft Word:** Starting MS Word - Word Document Window - File Menu - New-Entering or Typing text - **Creating a webpage** - Sending E-Mail**** – Open Document – Close – Save - Edit Menu - Editing Text - Selecting Text - Undo Text - Redo Text – Cut - Deleting Text – Copy – Paste - Moving Text - Coping Text - Paste Special - Find and Replace - Go to - Links- Format Menu – Font – Paragraph - Bullets and Numbering - Borders and Shading – Columns ****SDG 9 – Industry, Innovation, and Infrastructure**	K2	6
II	**MS Excel:** Staring Excel - Navigating Worksheets - Keyboard – Menu bar – Mouse - Scroll bars - Opening a new workbook - Entering Data - Entering Text - Entering Numbers - Entering Formula - Excel Functions - Undo &Redo - Editing Worksheet - Saving Workbook - Clearing Cell - Copying data - Moving Data- Inserting Rows, Columns & Cell range - Deleting Rows, Columns & Cell ranges - Headers and footers - find and replace - **Charts**** ****SDG 8 – Decent Work and Economic Growth**	K2	6
III	**MS-PowerPoint:** Starting PowerPoint - **Creating a presentation using Auto content wizard**** - Creating Design template - Creating Blank Presentations - Open an Existing Presentation - Saving a presentation - Closing a presentation - Existing PowerPoint - Inserting clip art pictures - adding Movies and sounds - organizing chart ****SDG 4 – Quality Education**	K3	6

IV	**MS-Access:** Getting started with Access - **Concept of database** – RDBMS**** - Creating Database with a wizard - Creating blank database - Opening data base - Closing Database ****SDG 11 – Sustainable Cities and Communities**	K4	6
V	Creating a table by using Table Wizard, Entering data in table **Queries**** - Creating a Query Using the Query Wizard - Creating a Query using the Design view - Viewing query – **Forms** - Reports**** ****SDG 16 – Peace, Justice and Strong Institutions**	K5	6

Course Outcome	**CO1:** Create and format documents in Microsoft Word using basic editing and design tools.	K2
	CO2: Navigate and manage data in Excel**,** including formulas, functions, and charts.	K2
	CO3: Design and present engaging presentations using PowerPoint with multimedia and charts.	K3
	CO4: Create and manage databases in Access**,** including table design and data	K4
	CO5: Develop advanced queries, forms, and reports in Access for data	K5

Learning Resources	
Text Books	1. MS Office 2000 for everyone, Sanjay Saxena, Vikas Publishing House Pvt Ltd.
Reference Books	1.Microsoft Office 2019 Step by Step, Author: Joan Lambert and Curtis Frye Published by Microsoft Press
Website Link	1.https://support.microsoft.com/en-us/office
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PSO1**	**PSO2**	**PSO3**
CO1	2	3	1	-	-	1	-	2	1	2	2	-	1
CO2	2	2	-	1	2	-	1	2	1	3	3	2	2
CO3	1	3	1	-	2	2	-	2	1	3	2	1	2
CO4	2	2	2	2	3	-	1	2	1	3	3	3	3
CO5	3	2	2	2	3	1	2	2	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. M. Logeswari	**Verified By HOD: Mrs. S .I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2NM1	**MULTIMEDIA SYSTEMS**	**SEC/NME THEORY**	**II**	**30**	**2**	**-**	**-**	**2**

Objective:
To equip students with foundational and practical knowledge of multimedia systems, authoring tools, data representations, and processing techniques for images, video, and audio.

Unit	Course Content	Knowledge Levels	Sessions
I	**Multimedia Authoring and Data Representations:** Definition and Components of Multimedia – Multimedia Research Topics and Projects – Multimedia vs Hypermedia – History and Evolution of Multimedia – **The World Wide Web (WWW)** – Web Technologies** HTTP **– HTML** – XML** - SMIL**** – Multimedia Software Tools Overview – Music Sequencing and Notation – Basics of Digital Audio – Graphics - Image Editing - Video Editing and Animation – Introduction to Multimedia Authoring. ****SDG 9 – Industry, Innovation and Infrastructure**	K1	6
II	**Multimedia Authoring and Tools:** Multimedia Authoring Metaphors – Multimedia Production and Presentation Stages – Automatic Authoring Concepts – **Overview and Applications of Authoring Tools** Adobe Premiere** - Macromedia Director** - Flash – Dreamweaver**** ****SDG 4 – Quality Education**	K2	6
III	**Graphics and Image Data Representations:** Image and Graphics Data Types – 1-Bit and 8-Bit Gray-Level Images – 24-Bit and 8-Bit Color Images – Use of Color Lookup Tables (LUTs) – **Common File Formats: GIF, JPEG, PNG, TIFF, EXIF**** – Animation File Formats and Document Formats: PS - PDF – Other Formats: WMF – BMP - PAINT - PICT - PPM. ****SDG 12 – Responsible Consumption and Production**	K3	6
IV	**Color in Image and Video:** Basics of Color Science – Light and Spectra – **Human Vision and Eye Sensitivity** – Image Formation and Camera Systems**** – Gamma Correction – Color-Matching Functions and Chromaticity Diagram – Monitor Specifications and White-Point Correction – Color **Coordinate Models:** XYZ, Lab*, Munsell – **Image Color Models:** RGB – CMY -CMYK – Video Color Models: YUV – YIQ - YCbCr. ****SDG 3 – Good Health and Well-Being**	K4	6

V	**Fundamental Concepts in Video:** Types of Video Signals: Component Video, Composite Video, S-Video – **Analog Video Standards**: NTSC – PAL - SECAM – **Digital Video Concepts**: Chroma Subsampling – CCIR Standards for Digital Video – **Introduction to High-Definition Video Formats****	K3	6

Course Outcome	**CO1:** Recall the components, history, and basic tools used in multimedia systems and the web.	K1
	CO2: Explain multimedia authoring methods and the use of editing and authoring tools	K2
	CO3: Apply different image data types and file formats in multimedia projects.	K3
	CO4: Analyze color models and their use in image and video processing.	K4
	CO5: Evaluate audio and video concepts, formats, and transmission techniques used in multimedia.	K3

Learning Resources	
Text Books	1. Fundamentals of Multimedia, Ze-Nian Li and Mark S. Drew, Pearson Education International
Reference Books	1. Multimedia: Computing, Communications and Applications (2nd Edition), Ralf Steinmetz & Klara Nahrstedt, Pearson Education. 2. Multimedia: Making It Work (9th Edition), Tay Vaughan, Publisher: McGraw-Hill Education
Website Link	1. https://www.tutorialspoint.com/multimedia/multimedia_systems.htm 2. https://www.cambridgeincolour.com/tutorials/color-space.html
L – Lecture T – Tutorial P – Practical C – Credit	

Mapping of CO's with PO's and PSO's for B.Sc(Computer Science)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	2	2	1	1	1	1	2	1	2	2	2	1
CO2	2	2	2	-	1	1	1	2	2	3	2	3	2
CO3	3	1	3	-	2	-	1	2	2	3	3	3	3
CO4	3	-	3	2	3	1	1	2	-	3	3	3	3
CO5	3	1	2	-	2	1	-	2	-	3	2	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. M. Geethanjali	**Verified By HOD: Mrs. S.I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2NM2	**INTRODUCTION TO HTML**	**SEC/NME THEORY**	**II**	**30**	**2**	**-**	**-**	**2**

Objective:
To provide foundational knowledge and hands-on skills in creating structured, styled, and interactive web pages using HTML and basic styling techniques.

Unit	Course Content	Knowledge Levels	Sessions
I	**Getting Started with HTML** Understand the Internet– The Anatomy of a Web Site – Web Browsers – Internet Service Providers – Be Aware of the Current Version of HTML – **Plan for the Audience, Goals, Structure, Content, and Navigation of Your Site**** – Identify the Target Audience – Set Goals – Create the Structure – Organize Content – Develop Navigation. ****SDG 4 – Quality Education**	K1	6
II	**Basic Page Structure** Create an HTML File – Naming Conventions – Preview an HTML File in a Browser – Describe and Apply the Basic HTML Document Format – Types of Tags – Attributes – Capitalization – Quotations – Nesting – Spacing and Breaks – Add Comments to an HTML File – **Set Up Style Sheets in an HTML File** – Define the Style** – Define the Values** – Create the Structure**** ****SDG 9 – Industry, Innovation and Infrastructure**	K2	6
III	**Working with Colors and Text** **Identify the Ways in Which Color Is Referenced in Web Development**** – Hexadecimal Color – Hexadecimal Shorthand – RGB Values and Percentages – Color Names – **Web-Safe Colors**** – Specify Document Colors – On the Horizon – RGBA – Working with Text – Organize Sections of Text – Identifying Natural Divisions – Paragraph Breaks – Horizontal Rules and Borders – Alignment. ****SDG 11 – Sustainable Cities and Communities**	K3	6
IV	**Working with Images** Use Images as Elements in the Foreground of a Web Page – Image File Types – Using Existing Graphics – Creating Your Own Graphics – Specify the Height and Width of Images – **Provide Alternative Text and Titles for Images**** – Link Images to Other Content on a Web Site – Link the Entire Image – Link Sections of an Image. ****SDG 10 – Reduced Inequalities**	K4	6

V	**Creating Lists and Table** Use Ordered Lists in a Web Page – Use Unordered Lists in a Web Page – Use Definition Lists in a Web Page – Combine and Nest Two or More Types of Lists in a Web Page – Style Lists – Customize the Bullets – **Understanding the concept of table** – Table structure** – Cell content** – Format tables**** – Format content within table cells. ****SDG 8 – Decent Work and Economic Growth**	K5	6

Course Outcome	**CO1:** Understand the basic structure of HTML and plan the layout of a web page.	K1
	CO2: Create and structure HTML documents with appropriate tags and attributes.	K2
	CO3: Apply colors, text formatting, and styles to enhance web page presentation.	K3
	CO4: Incorporate images, links, and multimedia elements effectively in web pages.	K4
	CO5: Design well-structured lists and tables for organizing and presenting data on web pages.	K5

Learning Resources	
Text Books	1. Wendy Willard, HTML: A Beginner's Guide‖, Fourth Edition, 2015, Tech Books Publishing.
Reference Books	1. Jon Duckett, HTML and CSS: Design and Build Websites, 2011, Wiley Publishing. 2. Terry Felke-Morris, HTML5 and CSS3: Visual QuickStart Guide, 8th Edition, 2018, Peachpit Press.
Website Link	1. https://www.w3schools.com/html/html_intro.asp 2. https://www.geeksforgeeks.org/html/html-tutorial/
L – Lecture T – Tutorial P – Practical C – Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	1	3	1	2	1	1	2	1	2	3	3	2
CO2	2	1	3	1	3	1	1	2	1	3	3	3	2
CO3	2	1	3	1	3	1	1	2	1	3	3	3	2
CO4	2	1	3	1	3	1	1	2	1	3	3	3	2
CO5	2	1	3	1	3	1	1	2	1	3	3	3	2

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. Aswini G	**Verified By HOD: Mrs. Anto Ramya S.I**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1A01	**C PROGRAMMING**	**GSE THEORY**	**I**	**45**	**3**	**-**	**-**	**2**

Objective:
This course introduces students to the foundational concepts of structured programming using the C language. It equips learners with the ability to write, analyze, and execute C programs, covering core topics such as data types, control structures, arrays, functions, pointers, and structures.

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction to C and Data Types:** Introduction to C - Basic Structure of C Programs - Executing a C Program - C Tokens – Keywords – Identifiers – Constants – Variables – **Data Types**** - Declaration and Assignment of Variables - Operators and Expressions – Arithmetic Operators – Evaluation – Precedence – Type Conversion. **Input and Output:** getchar(), putchar(), scanf(), printf() ****SDG 9 – Industry, Innovation and Infrastructure**	K1, K2	9
II	**Control Structures**: **Decision Making** - Simple if - **if…else**** - Nested if…else - else if ladder – switch - ?: operator - goto statement. **Looping:** while - do…while – for - break, continue, exit. ****SDG 4 – Quality Education**	K2, K3	9
III	**Arrays and Strings: Arrays**: Definition - Declaration – One-Dimensional, Two-Dimensional, **Multi-Dimensional**** - Dynamic Arrays - Control Arrays. **Strings**: String handling using arrays - Basic string operations. ****SDG 11 – Sustainable Cities and Communities**	K2, K3	9
IV	**Functions:** Introduction to Functions - Function Declaration, Definition, and Call - Return Statement - Categories of Functions (with/without arguments and return values) - **Recursive Functions**** - String Functions. ****SDG 8 – Decent Work and Economic Growth**	K3, K4	9
V	**Structures, Unions, and Pointers**: Structures: Defining – Declaring Variables – Accessing Members - Structures with Functions – Unions. **Pointers:** Understanding - Declaring and Initializing - Accessing variables via pointers - **Address operations**.** ****SDG 12 – Responsible Consumption and Production**	K3, K4	9

Course Outcome	**CO1:** Recall and explain the basic syntax, structure, and data types of the C programming language.	K1
	CO2: Apply conditional and looping constructs to develop decision-making programs.	K3
	CO3: Design and implement array and string-based operations for data storage and manipulation.	K3
	CO4: Develop modular programs using user-defined functions, including recursive and string functions.	K4
	CO5: Construct programs using structures, unions, and pointers to manage complex data.	K4

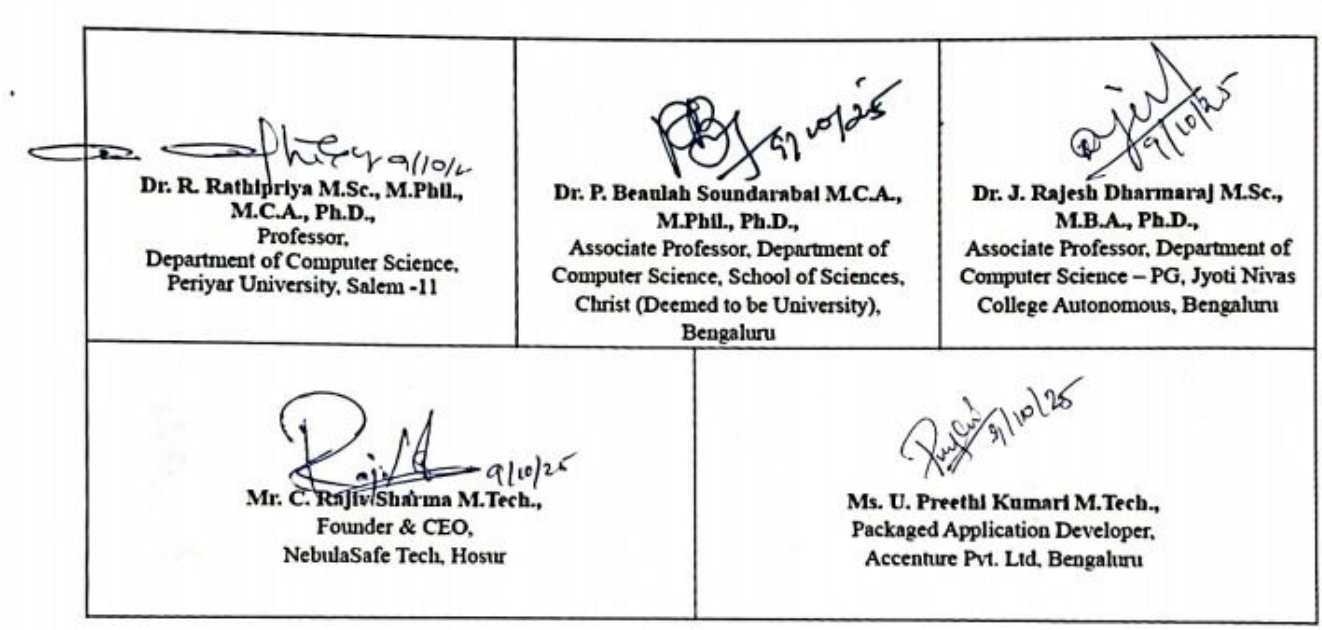
Learning Resources	
Text Books	Programming In Ansi C Eighth Edition by E Balagurusamy, published by Chaukhamba Auriyantaliya, 2023.
Reference Books	1. Gottfried Byron "Programming With C", Tata McGrew Hill
Website Link	1. https://www.tutorialspoint.com/cprogramming/index.htm 2. https://www.tpointtech.com/c-programming-language-tutorial 3. https://www.geeksforgeeks.org/c/c-programming-language/
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	1	3	2	1	-	-	-	2	2	-	3	-	2
CO2	-	3	3	-	-	-	-	2	2	-	3	-	2
CO3	-	3	2	-	1	-	-	3	2	-	3	2	3
CO4	-	3	3	-	-	-	-	2	2	-	3	-	3
CO5	-	3	2	-	-	-	1	3	2	-	3	2	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. G. Amalredge	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose Principal**



B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1AP1	**C PROGRAMMING LAB**	**GSE PRACTICAL**	**I**	**30**	**-**	**-**	**2**	**1**

Objective:
The course enables students to understand the fundamentals of C programming through hands-on practice. It focuses on basic programming constructs such as variables, decision-making, loops, arrays, functions, structures, strings, and pointers to build a strong foundation in structured programming and logical problem-solving.

S.No.	List of Programs	Knowledge levels	Sessions
1	Write a program to perform arithmetic operations (addition, subtraction, multiplication, division) using variables and operators	K2	3
2	Write a program to find the largest of two numbers using if...else	K2	3
3	Write a program to calculate the sum of n natural numbers using a for loop	K3	2
4	Write a program to print the multiplication table of a number using while loop	K3	3
5	Write a program to reverse a number using do...while loop	K3	2
6	Write a program to add two matrices	K3	2
7	Write a program to find the length of a string without using built-in functions	K3	3
8	Write a program to demonstrate a recursive function to calculate the Fibonacci series	K3	2
9	Write a program to define and call a function that returns the factorial of a number	K3	3
10	Write a program using structures to store and display student information	K3	2
11	Write a program to perform string concatenation using string functions	K3	2
12	Write a program to demonstrate the use of pointers to access and modify variable values	K3	3

Course Outcome	**CO1:** Understand and implement basic C programming concepts like variables, operators, and conditional statements.	K2
	CO2: Apply looping constructs to solve iterative problems.	K3
	CO3: Work with arrays, strings, and matrices for data manipulation.	K3
	CO4: Use functions (including recursion) and structures to create modular programs.	K3
	CO5: Demonstrate the use of pointers for efficient memory handling in programs.	K4

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	2	1	-	-	-	2	1	1	3	2	2
CO2	1	3	3	-	1	-	-	2	1	-	3	2	2
CO3	1	3	3	-	1	-	-	3	1	-	3	3	3
CO4	1	3	3	1	1	-	-	3	2	-	3	3	3
CO5	1	3	3	-	1	-	-	3	2	-	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. G. Amalredge	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS1A02	**PROBLEM SOLVING THROUGH C**	**GSE THEORY**	**I**	**75**	**5**	**-**	**-**	**4**
Objective: To introduce students to the fundamental concepts of C programming, including its structure, data types, operators, input/output operations, and control structures, enabling them to write and understand basic C programs.								

Unit	Course Content	Knowledge Levels	Sessions
I	**Overview of C:** History and Importance of C - Basic Structure of C Programs - Execution of C Program - **Compilation and Linking**** - Constants, Variables, and Data Types ****SDG 9 – Industry, Innovation and Infrastructure**	K1	15
II	**Operators and Expressions:** Introduction to Operators-Types of Operators: Arithmetic – **Relational**** - Logical- Assignment - Increment and Decrement - Conditional (Ternary) – Bitwise - Special Operators (size of, comma, etc.) - Arithmetic Expressions - Evaluation of Expressions - Operator Precedence and Associativity. ****SDG 16 – Peace, Justice, and Strong Institutions**	K1	15
III	**Managing Input and Output Operations:** Reading a Character: getchar(), scanf() - Writing a Character: putchar(), printf() - **Formatted Input and output with format specifiers**** ****SDG 4 – Quality Education**	K2	15
IV	**Decision Making and Branching:** Introduction to Decision Making - Simple if Statement - **The if...else Statement**** - Nested if...else - The else if Ladder - The switch Statement - The goto Statement - The ?: (Conditional) Operator. **Decision Making and Looping:** Introduction to Looping - The while Loop - The do...while Loop - The for Loop - Nested Loops - The break Statement - The continue Statement-Jump loops ****SDG 5 – Gender Equality**	K2	15
V	**Arrays:** One-dimensional Arrays - Declaration and Initialization of Arrays - **Two-dimensional Arrays**** - Multidimensional Arrays. **Character Arrays and Strings:** Declaration and Initialization of Character Arrays - Reading and Writing Strings - String Handling Functions ****SDG 11 – Sustainable Cities and Communities**	K3	15

Course Outcome	**CO1:** Understand the basic structure, data types, and execution process of C programs.	K1
	CO2: Identify and apply various operators and expressions to perform arithmetic and logical computations.	K1
	CO3: Apply input and output functions to interact with users and display formatted results in mathematical problems.	K2
	CO4: Develop logic for problem solving using decision-making and looping constructs.	K2
	CO5: Implement mathematical solutions using arrays and string manipulation techniques.	K3

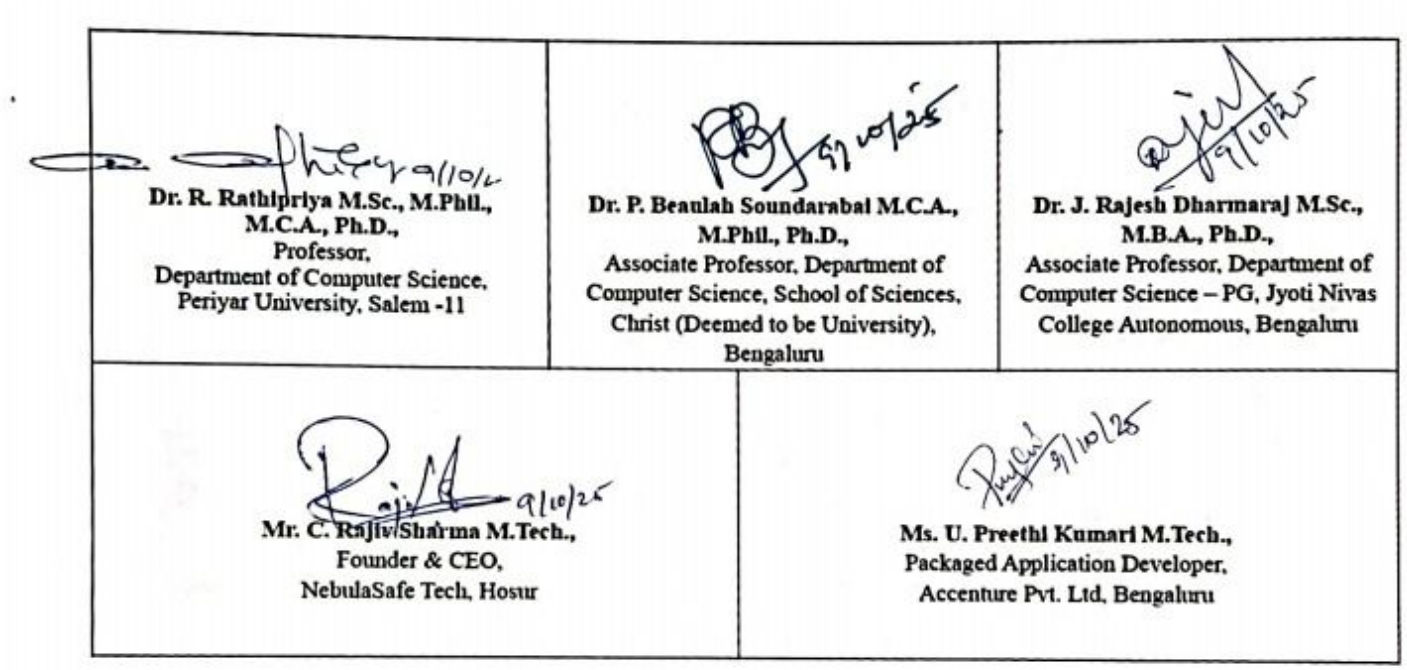
Learning Resources	
Text Books	**E. Balaguruswamy,** (2010), ―Programming in ANSI C‖, Fifth Edition, Tata McGraw Hill Publications
Reference Books	1. **Yashavant P. Kanetkar**, (2012), *"*Let Us C*"*, Thirteenth Edition, BPB Publications. 2. **Ashok N. Kamthane**, (2008), *"*Programming in C*"*, Second Edition, Pearson Education.
Website Link	1. https://www.geeksforgeeks.org/c-programming-language/ 2. https://www.tutorialspoint.com/cprogramming/index.htm 3. https://www.programiz.com/c-programming 4. https://www.javatpoint.com/c-programming-language-tutorial 5. https://www.learn-c.org/
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	1	2	1	2	3	2	2
CO2	3	1	3	2	2	1	1	2	1	2	3	3	3
CO3	2	3	2	1	1	1	1	2	1	3	2	2	2
CO4	3	2	3	3	3	1	1	2	1	3	3	3	3
CO5	3	1	3	3	3	1	1	2	1	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. S. I. Anto Ramya	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose Principal**



B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2A03	**OFFICE AUTOMATION FOR BUSINESS**	**GSE THEORY**	**II**	**30**	**2**	**-**	**-**	**2**

Objective:
The objective of this course is to equip students with practical skills in using Microsoft Office applications, including MS Word, Excel, PowerPoint, and Access. It aims to enable students to create and format documents, perform data analysis using formulas and charts, design effective presentations with animations, and manage basic databases by creating tables, queries, forms, and reports..

Unit	Course Content	Knowledge Levels	Sessions
I	**Microsoft Office:** Working in the Program Environment – Changing Program Settings - Customizing the Ribbon – Customizing the Quick Access Toolbar – Creating and Saving Files - Opening, Moving Around in, and Closing files – Viewing Files in Different Ways - Making Text Changes - Finding and Replacing Text- Fine -Tuning Text - **Correcting Spelling and Grammatical Errors****- Inserting Saved Text - Quickly Formatting Text - Creating and Modifying Lists - Organizing Information in Columns and Tables ****SDG 4 – Quality Education**	K2	6
II	**MS Excel:** Creating Workbooks - Modifying Workbooks - Modifying Worksheets - Customizing the Excel - Entering and Revising Data- Moving Data Within a Workbook - Finding and Replacing Data - **Performing Calculations on Data: Naming Groups of Data** - Creating Formulas to Calculate Values**** – Workbook Appearance – Formatting Cells - Defining Styles - Applying Workbook Themes and Excel Table Styles. ****SDG 8 – Decent Work and Economic Growth**	K3	6
III	**MS PowerPoint:** Work with Slides - Adding and Deleting Slides - Adding Slides with Ready-Made Content Dividing Presentations into Sections - Rearranging Slides and Sections- Work with Slide Text - Entering Text in Placeholders. Adding Text Boxes - Editing Text - Correcting and Sizing Text While Typing - Checking Spelling and Choosing the Best Words - Finding and Replacing Text and Fonts - Format Slides. **Applying Themes** - Using Different Color and Font Schemes****Changing the Slide Background – Changing the Look of placeholders – Changing the Alignments ****SDG 9 – Industry, Innovation, and Infrastructure**	K3	6
IV	**MS Access:** Working in Access - Understanding Database Concepts - **Exploring Tables**** - Exploring Forms - Exploring Queries - Exploring Reports ****SDG 11 – Sustainable Cities and Communities**	K4	6
V	Create Database form Templates – **Creating Databases and tables manually**** – Manipulating Table column and rows – Refining Table Structure ****SDG 12 – Responsible Consumption and Production**	K5	6

Course Outcome	**CO1:** Understand the basic features of MS Word including toolbars, menus, icons, and mail merge.	K2
	CO2: Apply basic and advanced functions of MS Excel to input data, use formulas, and create charts.	K3
	CO3: Create and edit MS PowerPoint presentations with menus, animation, and graphs.	K3
	CO4: Design a database using MS Access including tables and relationships.	K4
	CO5: Develop and evaluate queries, forms, and reports using MS Access.	K5

Learning Resources	
Text Books	MS Office 2000 for everyone, Sanjay Saxena, Vikas Publishing House Pvt Ltd.
Reference Books	Microsoft Office 2019 Step by Step, Author: Joan Lambert and Curtis Frye Published by Microsoft Press
Website Link	https://support.microsoft.com/en-us/office
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	1	-	-	1	-	2	1	2	2	-	1
CO2	2	2	-	1	2	-	1	2	2	3	3	2	2
CO3	1	3	1	-	2	2	-	2	-	3	2	1	2
CO4	2	2	2	2	3	-	1	2	2	3	3	3	3
CO5	3	2	2	2	3	1	2	2	2	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. M. Logeswari	**Verified By HOD: Mrs. S. I. Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.Sc. Computer Science LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2AP2	**OFFICE AUTOMATION FOR BUSINESS LAB**	**GSE PRACTICAL**	**II**	**30**	**-**	**-**	**2**	**1**

Objective:

To enhance productivity and efficiency by automating routine office tasks such as data entry, document management, communication, and scheduling using software tools and digital systems.

S.NO	Course Content	Knowledge Levels	Sessions
SDG 8 – Decent Work & Economic Growth			
1	Describe how to customize the Quick Access Toolbar to include frequently used commands from the File, Edit, and Format menus.	K2	3
2	Discuss the process of creating conditional fields in Mail Merge to handle varying data scenarios.	K3	3
3	Demonstrate how to convert a table into text and vice versa in Word. Explain how to sort data within a Word table based on multiple columns.	K4	3
4	Describe the steps to insert and customize a SmartArt graphic in a Word document.	K2	3
5	Explain the difference between absolute and relative cell references with examples.	K3	3
6	Create a pivot chart to analyze sales data over different quarters and interpret the results.	K4	3
7	Design a 10-slide presentation incorporating various slide layouts and transitions to effectively convey a marketing plan.	K2	3
8	Demonstrate how to use the Reuse Slides feature to incorporate slides from another presentation.	K3	3
9	Describe how to set up data validation rules to prevent incorrect data entry in Access tables.	K2	3
10	Explain how to create a grouped report in Access that summarizes data by a specific category.	K3	3

Course Outcome	**CO1**: Apply formatting and editing features in MS Word to create professional documents.	K2
	CO2: Use MS Excel functions and formulas to perform calculations and data analysis.	K3
	CO3: Create impactful presentations using animations, transitions, and design tools in MS PowerPoint.	K3
	CO4: Design and create relational databases using MS Access by defining tables, fields, and relationships to organize and manage data efficiently.	K4
	CO5: Integrate tools from MS Word, Excel, and PowerPoint to automate and streamline tasks.	K3

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	2	3	3	1	1	1	2	1	2	2	2	-	1
CO2	3	2	2	-	-	2	-	2	2	3	3	2	-
CO3	2	3	3	1	1	1	2	1	2	2	2	-	1
CO4	3	2	3	2	1	1	2	1	3	3	3	3	2
CO5	3	3	2	2	-	2	-	2	3	3	3	2	2

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs.M.Logeswari	**Verified By HOD: Mrs.S.I.Anto Ramya**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose** **Principal**

9/10/25 **Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D.,** Professor, Department of Computer Science, Periyar University, Salem -11	9/10/25 **Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D.,** Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	9/10/25 **Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D.,** Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
9/10/25 **Mr. C. Rajiv Sharma M.Tech.,** Founder & CEO, NebulaSafe Tech, Hosur	9/10/25 **Ms. U. Preethi Kumari M.Tech.,** Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

B.B.A (CA) LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UCS2A04	**MANAGEMENT INFORMATION SYSTEM**	**GSE THEORY**	**II**	**75**	5	-	-	**4**

Objective:

- Understand MIS in decision making.
- Explain MIS, its structure and role in management functions.
- Classify & discuss information system categories, Database Management systems.
- To Discuss SDLC and functional information system categories.
- Outline functions of BPO, Data mining and the recent trends in information management

Unit	Course Content	Knowledge Levels	Sessions
I	Definition of Management Information System - MIS support for planning, Organizing and controlling - Structure of MIS - Information for decision -making. – **Ethical issues**** ****SDG 16 – Peace, Justice and Strong Institutions**	K1,K2	15
II	Concept of System - Characteristics of System - Systems classification - Categories of Information Systems - **Strategic information system and competitive advantage**** ****SDG 9 – Industry, Innovation and Infrastructure**	K1,K3	15
III	Computers and Information Processing - Classification of computer - Input Devices – Output devices - Storage devices, - Batch and online processing. Hardware - Software. **Database management Systems****. ****SDG 11 – Sustainable Cities and Communities**	K3,K4	15
IV	System Analysis and design – **SDLC**** - Role of System Analyst - Functional Information system - Personnel, production, material, marketing. ****SDG 12 – Responsible Consumption and Production**	K1,K5	15
V	Decision Support Systems - **Business Process Outsourcing**** - Definition and function - Introduction to business analytics & relevance of big data. ****SDG 8 – Decent Work and Economic Growth**	K3,K5	15

Course Outcome	**CO1:** Understand MIS in decision making	K1,K2
	CO2: Explain MIS, its structure and role in management functions	K1,K3
	CO3: Classify & discuss information system categories, Database Management systems	K3,K4
	CO4: Discuss SDLC and functional information system categories	K1,K5
	CO5: Outline functions of BPO, Data mining and the recent trends in information management	K3,K5

Learning Resources	
Text Books	1. Management Information Systems: Conceptual Foundations, Structure & Development by Davis, Olson, M. 2nd edition Tata McGraw Hill (TMH) Publications India. 2. Dr. S.P. Rajagopalan, ―Management Information Systems and EDP ",

	Margham Publications , Chennai 3. Management Information System by Jawadekar, Tata Mc Graw hill Publication, 2 nd Edition 4. Management Information System by Ozz Effy 5. Sadagopan, "Management Information Systems" - Prentice- Hall of India
Reference Books	1. Mudrick & Ross, "Management Information Systems", Prentice - Hall of India. 2. Management Information System by Concise study by Kelkhar S A 3.CSVMurthy -"Management Information Systems" Himalaya publishing House. 4. Michael Alexander (2014) Business Intelligence Tools for Excel Analysts. 5. Management Information System by Oka MM.
Website Link	1.https://www.tutorialspoint.com/management_information_system/management_information_system.htm 2 https://www.scribd.com/document/312335980/Information-Systems-Strategy?utm_source=chatgpt.com 3. https://www.scribd.com/presentation/729417724/Computer-Fundamentals-and-Information-Processing 4. https://tech-talk.org/2015/01/21/system-development-life-cycle-sdlc-approaches/?utm_source=chatgpt.com 5.https://en.wikipedia.org/wiki/Decision_support_system
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	1	3	2	1	2	2	1	2
CO2	3	2	1	1	2	1	3	2	1	2	2	1	2
CO3	3	1	3	2	2	1	2	2	1	3	3	3	3
CO4	3	2	3	2	3	2	3	2	1	3	3	3	3
CO5	3	2	2	2	3	1	3	3	1	3	3	2	3

(Correlation: 3 – High, 2 – Medium, 1 – Low

Course Designed By: Mrs. V. Niranjana	**Verified By HOD: Mrs. Anto Ramya S. I**
Checked By CDC: Dr. Reena Raj	**Approved By: Dr. J. Caroline Rose Principal**

Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D., Professor, Department of Computer Science, Periyar University, Salem -11	Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D., Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D., Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
Mr. C. Rajiv Sharma M.Tech., Founder & CEO, NebulaSafe Tech, Hosur	Ms. U. Preethi Kumari M.Tech., Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	

LOCF – CBCS with effect from 2025 - 2026 Onwards								
Course Code	**Course Title**	**Course Type**	**Sem**	**Hours**	**L**	**T**	**P**	**C**
25UDIL401	**DIGITAL LITERACY**	**IDC THEORY**	**IV**	**30**	**2**	**-**	**-**	**2**
Objective: The course aims to equip learners with foundational knowledge of digital literacy, its ethical dimensions, types of digital media, and educational applications. It also addresses the role of language in digital contexts and explores challenges, helping students develop responsible, effective, and critical use of digital tools in various domains.								

Unit	Course Content	Knowledge Levels	Sessions
I	**Introduction to Digital Literacy**** and its Types Digitizing Information ****SDG 9 – Industry, Innovation, and Infrastructure**	K1,K2	6
II	Values and **Ethics of Digital Literacy**** Significance of Digital Literacy Characteristics of Digital Literacy The Role of Language in Digital Literacy ****SDG 16 – Peace, Justice, and Strong Institutions**	K2	6
III	Digital Media and its Types Emai**l, Vlog, Blog, Twitter, Facebook, E-book**** ****SDG 17 – Partnerships for the Goals**	K1,K2	6
IV	**Digital Literacy in Education**** **SDG 4 – Quality Education**	K2,K3	6
V	**Challenges in Digital Literacy**** ****SDG 10 – Reduced Inequalities**	K1,K2,K3	6

Course Outcome	**CO1:**Understand the concept of digital literacy and identify various types of digitized information.	K1
	CO2: Demonstrate awareness of digital values, ethics, and the role of language in digital communication.	K2
	CO3: Recognize and differentiate between various forms of digital media such as blogs, vlogs, and social networking platforms.	K3
	CO4: Apply digital tools and platforms effectively in educational and academic contexts.	K4
	CO5: Evaluate the challenges related to digital literacy and propose strategies to overcome them.	K5

Learning Resources	
Text Books	1. Introduction to Digital Literacy (2nd Edition) – Mark Bowles. 2. Popular Culture, New Media and Digital Literacy in Early Childhood – J.Marsh. 3. Digital Literacy: Different Cultures, Different Understandings – E. Helsper.

Reference Books	1. **Paul Gilster** (1997) – *Digital Literacy* Publisher: Wiley *2.* **Belshaw, Doug** (2014) – *The Essential Elements of Digital Literacies* 3. **Rheingold, Howard** (2012) – *Net Smart: How to Thrive Online* Publisher: MIT Press 4. **Mike Ribble** – *Digital Citizenship in Schools: Nine Elements All Students Should Know* Publisher: ISTE
Website Link	1. https://recurpost.com/blog/what-is-digital-media-types-examples/ 2. https://www.futurize.studio/blog/what-is-digital-literacy-and-its-role-in-education
L – Lecture T – Tutorial P – Practical C - Credit	

Mapping of CO's with PO's and PSO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	2	2	2	1	2	3	2	2
CO2	3	3	2	2	2	2	3	2	2	3	3	3	3
CO3	2	1	1	2	1	2	3	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	3	3	2	3
CO5	3	3	3	3	2	3	3	3	2	3	3	3	3

(Correlation: 3 – High, 2 – Medium, 1 – Low)

Course Designed By: Mrs. N. Vadivu	**Verified By IQAC Coordinator: Dr. Dhina Suresh**
Checked By CDC: Mrs. Anto Ramya S. I	**Approved By: Dr. J. Caroline Rose Principal**

Dr. R. Rathipriya M.Sc., M.Phil., M.C.A., Ph.D., Professor, Department of Computer Science, Periyar University, Salem -11	Dr. P. Beaulah Soundarabai M.C.A., M.Phil., Ph.D., Associate Professor, Department of Computer Science, School of Sciences, Christ (Deemed to be University), Bengaluru	Dr. J. Rajesh Dharmaraj M.Sc., M.B.A., Ph.D., Associate Professor, Department of Computer Science – PG, Jyoti Nivas College Autonomous, Bengaluru
Mr. C. Rajiv Sharma M.Tech., Founder & CEO, NebulaSafe Tech, Hosur	Ms. U. Preethi Kumari M.Tech., Packaged Application Developer, Accenture Pvt. Ltd, Bengaluru	