



MUSLIM ARTS COLLEGE

(Accredited by NAAC with B+ grade & Affiliated to Manonmaniam Sundaranar University,
Tirunelveli; Recognized US 2(f) 12 (B) of UGC Act.)

Thiruvithancode, Kanyakumari District, Tamil Nadu - 629174.

DEPARTMENT OF COMPUTER SCIENCE

CBCS SYLLABUS

Learning Outcome-based Curriculum Framework for

COMPUTER SCIENCE (B.Sc.)

*Applicable for students admitted from June 2026 as per the Resolutions of the Academic Council Meeting held
on 01.06.2026*

Vision

- To be a centre of excellence in computer science education and research, fostering innovation, technical expertise, and ethical values to meet global technological challenges.

Mission

- To provide quality education in computer science and emerging technologies
- To develop programming, analytical, and problem-solving skills
- To promote research, innovation, and project-based learning
- To prepare students for careers in IT, industry, and entrepreneurship
- To encourage ethical practices and lifelong learning

Academic and Professional Attributes of the Graduates

1. **Knowledge and Technical Competence**
Demonstrate comprehensive knowledge of computer science principles, programming, algorithms, data structures, databases, networking, software engineering, and emerging technologies.
2. **Programming and Problem-Solving Skills**
Analyze computational problems and develop efficient, reliable, and innovative software solutions using appropriate programming languages, tools, and technologies.
3. **Communication Skills**
Communicate technical concepts, project outcomes, and documentation effectively through oral, written, and digital modes for academic, professional, and collaborative environments.
4. **Research and Innovation**
Apply research methodologies, analytical thinking, and creative problem-solving skills to develop innovative computing solutions and contribute to technological advancements.
5. **Ethical and Professional Responsibility**
Demonstrate professional ethics, integrity, cybersecurity awareness, and social responsibility while developing and deploying computing solutions.
6. **Global and Technological Awareness**
Adapt to emerging technologies, global computing trends, industry standards, and sustainable practices in the field of computer science.
7. **Lifelong Learning**
Pursue continuous learning and professional development by updating technical knowledge and acquiring new skills to meet evolving technological demands.
8. **Leadership and Teamwork**
Work effectively as an individual and as a member or leader of multidisciplinary teams, demonstrating collaboration, interpersonal skills, and project management abilities.
9. **Professional Readiness**
Exhibit the technical competencies, entrepreneurial mindset, and employability skills required for higher education, research, software development, IT industries, and related professions.
10. **Reflective Learning and Adaptability**
Evaluate personal and professional performance through self-assessment, embrace

constructive feedback, and adapt effectively to technological and organizational changes.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Upon completion of the B.Sc. Computer Science Degree Programme, graduates are expected to	Mapping with Mission
PEO1	Demonstrate strong foundations in computer science, programming, software development, databases, networking, and emerging technologies to solve real-world computing problems.	M1 & M2
PEO2	Apply analytical thinking, problem-solving abilities, research aptitude, and innovation to design, develop, and evaluate efficient computing solutions.	M2 & M3
PEO3	Exhibit professional ethics, effective communication, teamwork, leadership, and social responsibility while contributing to the IT industry, academia, entrepreneurship, and society.	M4 & M5
PEO4	Pursue higher education, research, certifications, entrepreneurship, and lifelong learning by continuously upgrading technical knowledge and adapting to emerging technologies.	M5 & M6

Programme Outcomes (POs)

POs	Upon completion of the B.Sc. Computer Science Degree Programme, students will be able to	Mapping with PEOs
PO1: Disciplinary Knowledge	Demonstrate comprehensive knowledge of computer science fundamentals, programming, data structures, algorithms, databases, computer networks, operating systems, software engineering, and emerging technologies.	PEO1
PO2: Critical Thinking	Analyze computing problems, evaluate alternative approaches, and apply logical and critical thinking to develop effective software and technology-based solutions.	PEO1, PEO2
PO3: Problem Solving	Design, implement, test, and maintain software applications using appropriate programming languages, tools, and modern computing practices to address real-world problems.	PEO1, PEO2
PO4: Analytical Reasoning	Apply mathematical, computational, and analytical reasoning to interpret data, optimize algorithms, and make informed decisions in computing applications.	PEO2
PO5: Scientific Reasoning	Conduct investigations, analyze experimental results, apply research methodologies, and evaluate emerging technologies using scientific and evidence-based approaches.	PEO2
PO6: Self-directed and Lifelong Learning	Engage in continuous learning, acquire new technical skills, adapt to evolving technologies, and pursue higher studies, professional certifications, and	PEO3, PEO4

	research.	
PO7: Reflective Thinking	Demonstrate self-evaluation, ethical decision-making, adaptability, and continuous improvement in academic, professional, and personal contexts.	PEO3, PEO4
PO8: Digital and Project Skills	Apply modern computing tools, software development methodologies, project management practices, technical documentation, and collaborative technologies in software projects.	PEO2, PEO4
PO9: Communication Effectiveness	Communicate technical concepts, project outcomes, and research findings effectively through oral, written, and digital media while working with multidisciplinary teams.	PEO3
PO10: Leadership, Ethics and Social Responsibility	Demonstrate leadership, teamwork, professional ethics, cybersecurity awareness, environmental consciousness, and social responsibility while developing sustainable computing solutions.	PEO3, PEO4

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of the B.Sc. Computer Science Degree Programme, students will be able to	Mapping with POs
PSO1	Apply fundamental knowledge of computer science, programming, data structures, algorithms, databases, operating systems, and computer networks to develop efficient computing solutions.	PO1, PO2, PO3
PSO2	Design, develop, test, and deploy software applications using appropriate programming languages, development tools, database technologies, and modern software engineering practices.	PO2, PO3, PO4, PO8
PSO3	Analyze real-world computing problems using critical thinking, computational techniques, data analysis, and emerging technologies such as Artificial Intelligence, Cloud Computing, Data Science, and Cyber Security.	PO2, PO4, PO5, PO8
PSO4	Demonstrate effective communication, teamwork, leadership, professional ethics, and project management skills while working in multidisciplinary and multicultural environments.	PO6, PO7, PO9, PO10
PSO5	Pursue higher education, research, entrepreneurship, professional certifications, and lifelong learning by adapting to evolving technologies and industry requirements.	PO5, PO6, PO7, PO10
PSO6	Develop innovative, sustainable, and socially responsible computing solutions by integrating technical expertise with ethical values, environmental awareness, and global perspectives.	PO3, PO7, PO9, PO10

Mapping of Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

POs / PSOs	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
PO1: Disciplinary Knowledge	3	2	2	1	2	2
PO2: Critical Thinking	3	3	3	2	2	2
PO3: Problem Solving	3	3	3	2	2	3
PO4: Analytical Reasoning	2	3	3	2	2	2
PO5: Scientific Reasoning	2	2	3	1	3	2
PO6: Self-directed and Lifelong Learning	2	2	2	3	3	2
PO7: Reflective Thinking	2	2	2	3	3	3
PO8: Digital and Project Skills	2	3	3	2	2	2
PO9: Communication Effectiveness	2	2	2	3	2	3
PO10: Leadership, Ethics and Social Responsibility	1	2	2	3	3	3

•3 – High Correlation

•2 – Moderate Correlation

•1 – Low Correlation

COURSES OFFERED

SEMESTER I

Part	Course Code	Title of the Course	Credits	Hours / Week
Part I	AGTL11/ AGMY11/ AGAB11	Language: Tamil /Malayalam/Arabic	3	6
Part II	AGEN11	English:	3	6
Part III	AMCS11	Core Course I: Python Programming	5	5
	AMCSP1	Core Course II: Practical- Python Programming	5	5
	AECS11	Elective Course I: Modern Digital Logic And Communication	3	4
Part IV	ASCS11	Non-Major Elective I: Office Automation Lab	2	2
	AFCS11	Foundation Course: Introduction To Problem Solving Techniques	2	2
Total			23	30

SEMESTER I

CORE COURSE I: PYTHON PROGRAMMING

Course Code:

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AMCS11	Core	Y	Y	-	-	4	5	25	75	100

Learning Objectives

The course aims to:

1. To make students understand the concepts of Python programming.
2. To apply the OOPs concept in PYTHON programming.
3. To impart knowledge on demand and supply concepts.
4. To make the students learn best practices in PYTHON programming.
5. To know the costs and profit maximization.

Course Outcomes (COs)

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Learn the basics of python, Do simple programs on python, Learn how to use an array.	K1
CO2	Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.	K2
CO3	Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.	K3
CO4	Work with List, tuples and dictionary; Write program using list, Tuples and dictionary.	K4
CO5	Usage of File handlings in python, Concept of reading and writing files, Do programs using files.	K3

Bloom's Taxonomy Levels

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

Course Content

Units	Contents	No. of Hours
I	Basics of Python Programming: -Features of Python- -Variables - Identifiers–Keywords- Data Types-Output Statements – Input Statements- Comments –Operators- Python Arrays: Defining and Processing	15
II	Control Statements: Selection/Conditional Branching statements: if, if-else, nested if and if-elif-else statements. Iterative Statements: while loop, for loop, Jump Statements: break, continue and pass statements.	15
III	Functions: Function Definition – Function Call Function Arguments: Required Arguments, Keyword Arguments, Default Arguments and Variable Length Arguments- Recursion. Python Strings: Built-in String Methods - String Comparison. Modules: import statement-The Python module–dir() function	15
IV	Lists: Creating a list -Access values in List-Updating values in Lists-Basic list operations-List Methods. Tuples: Creating, Accessing, Updating and Deleting Elements in a tuple– Difference between lists and tuples. Dictionaries: Creating, Accessing, Updating and Deleting Elements in a Dictionary	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()-Renaming and deleting files.	15
	Total	75

S. No.	Text Book
1	Reema Thareja, “Python Programming using problem solving approach”,First Edition, 2017, Oxford University Press.
2	Dr.R.NageswaraRao,”CorePythonProgramming”, FirstEdition,2017, Dreamtech Publishers.

S. No.	Reference Books
1	Vamsi Kurama,"Python Programming: AModern Approach", Pearson Education.
2	Mark Lutz,"Learning Python",Orielly.
3	Adam Stewarts,"Python Programming",Online.
4	Fabio Nelli,"Python Data Analytics", APress.
5	Kenneth A.Lambert,"Fundamentals of Python–First Programs", CENGAGE Publication.

S. No.	Web Resources
1	https://www.programiz.com/python-programming
2	https://www.guru99.com/python-tutorials.html
3	https://www.w3schools.com/python/python_intro.asp

4	https://www.geeksforgeeks.org/python-programming-language/
5	https://en.wikipedia.org/wiki/Python_(programming_language)

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1	1	2	1	2	1	1
CO2	3	3	3	2	1	2	1	2	1	1
CO3	3	3	3	2	2	2	1	3	2	1
CO4	3	3	3	3	2	2	2	3	2	1
CO5	2	2	3	2	3	2	2	3	2	2

3 – Strong, 2 – Medium, 1 - Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	1	1	2	1
CO2	3	3	2	2	2	1
CO3	3	3	2	2	2	2
CO4	3	3	3	2	2	2
CO5	2	3	3	2	3	2
Weightage	14	14	11	9	11	8
Weighted percentage of Course Contribution to PSOs	2.8	2.8	2.2	1.8	2.2	1.6

Mapping Scale: 3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation

FIRST YEAR - SEMESTER I**CORE II - PRACTICAL- PYTHON PROGRAMMING**

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AMCSP1	Core	Y	Y	-	-	4	5	25	75	100

Learning Objectives

The course aims to:

1. Be able to design and program Python applications.
2. Be able to create loops and decision statements in Python.
3. Be able to work with functions and pass arguments in Python.
4. Be able to build and package Python modules for reusability.
5. Be able to read and write files in Python.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Demonstrate the understanding of syntax and semantics of PYTHON language	K2
CO2	Identify the problem and solve using PYTHON programming techniques.	K4
CO3	Identify suitable programming constructs for problem solving.	K2
CO4	Analyze various concepts of PYTHON language to solve the problem in an efficient way.	K4
CO5	Develop a PYTHON program for a given problem and test for its correctness.	K5

Bloom's Taxonomy Levels

K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyse, K5 – Evaluate, K6 – Create

Course Content

Units	Contents	No. of Hours
I	PRACTICALS 1. Write a Python program to perform addition, subtraction, multiplication, division, integer division and modulo division on two integer numbers.. 2. Write a Python program to determine whether the character entered is a vowel or not 3. Write a Python program to calculate the factorial of a number 4. Write a Python program to calculate the square root of a number 5. Write a Python program to check whether a number is even or odd. 6. Write a Python program to print the Fibonacci series using recursion 7. Write a Python program to reverse the order of the items in the array.	15
	Total	75

S. No.	Text Book
1	Y. Daniel Liang, Introduction to Programming Using Python, Pearson Education, Latest Edition.
2	Allen B. Downey, Think Python: How to Think Like a Computer Scientist, 2nd Edition, O'Reilly Media.
3	John V. Guttag, Introduction to Computation and Programming Using Python, 3rd Edition, MIT Press.

S. No.	Reference Books
1	Paul Barry, Head First Python, 2nd Edition, O'Reilly Media.
2	Mark Lutz, Learning Python, 5th Edition, O'Reilly Media.
3	Wesley J. Chun, Core Python Programming, 2nd Edition, Pearson Education.

S. No.	Web Sources
1	https://realpython.com/
2	https://www.geeksforgeeks.org/python-programming-language/
3	https://www.w3schools.com/python/
4	https://www.tutorialspoint.com/python/
5	https://www.programiz.com/python-programming

Mapping with Programme Out comes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1	1	2	1	2	1	1
CO2	3	3	3	3	2	2	2	3	2	1
CO3	3	3	3	2	2	2	1	3	2	1
CO4	3	3	3	3	3	2	2	3	2	2
CO5	3	3	3	3	3	3	2	3	2	2

3 – Strong, 2 – Medium, 1 – Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	1	1	2	1
CO2	3	3	3	2	2	2
CO3	3	3	2	2	2	1
CO4	3	3	3	2	3	2
CO5	3	3	3	3	3	2
Weightage	15	14	12	10	12	8
Weighted percentage of Course Contribution to PSOs	3	2.8	2.4	2	2.4	1.6

Mapping Scale: 3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation

FIRST YEAR - SEMESTER I

ME 1– MODERN DIGITAL LOGIC AND COMMUNICATION (ELECTIVE)

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
AECS11	Core	Y	Y	-	-	4	4	25	75	100

Learning Objectives

The course aims to:

1. To understand the concepts of number systems.
2. To learn conversions.
3. To construct truth tables.
4. To learn SOP and POS.
5. To understand various simplifications.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Understand the concept of various number systems.	K2
CO2	Understand basic concepts of digital systems	K5
CO3	Describe the storage structures	K2
CO4	Solve problems using SOP and PoS.	K4
CO5	Apply concepts for simplifications.	K2

Bloom's Taxonomy Levels

K1 – Remember, **K2** – Understand, **K3** – Apply, **K4** – Analyse, **K5** – Evaluate, **K6** – Create

Course Content

Unit	Contents	No. of Hours
I	Introduction: Analog vs digital – Binary System – The Basic Gates NOT, OR, AND – Universal Logic Gate NOR, NAND – AND-OR-Invert Gates	15
II	Number Systems and Codes: Binary Number System – Binary to Decimal Conversion – Decimal to Binary Conversion – Octal Numbers – Hexadecimal Numbers – The ASCII Code	
III	Flip-Flops: RS Flip Flops – Gated Flip flops – Edge Triggered RS Flip Flops – Edge Triggered D Flip Flops – Edge Triggered JK Flip Flops – JK Master Slave Flip Flops	15
IV	Registers: Types of Registers – Serial_In-Serial_Out – Serial_In-Parallel_Out – Parallel_In-Serial_Out – Parallel_In-Parallel_Out – Universal Shift Register – Modulation and Multiplexing – Electromagnetic Spectrum – Bandwidth	15
V	Digital Communication Techniques: Digital Transmission of Data – Parallel and Serial Transmission – Data Conversion – Pulse Modulation – Digital Signal Processing– Network Fundamentals – LAN Hardware – Ethernet LANs – Advanced Ethernet	15
	Total	75

S. No.	Text Books
1	Donald P. Leach, Albert Paul Malvino and Goutam Saha, “Digital Principles and Applications”, 7th Edition, Tata McGraw Hill, 2011
2	Louis E. Frenzel, “Principles of Electronic Communication Systems”, 4th Edition, McGraw Hill, 2016
3	Digital Principles and Applications, by Albert Paul Malvino & Donald P. Leach, Seventh Edition, McGraw Hill Education Private Limited
S. No.	Reference Works
1	Fundamentals of Digital Circuits, A. Anand Kumar, Second Edition, PHI Learning Private Limited
2	Digital design, M. Morris Mano, Third Edition, Pearson Education
S. No.	Web Sources (URL)
1	https://nptel.ac.in/
2	https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/
3	https://www.geeksforgeeks.org/digital-logic/
4	https://www.tutorialspoint.com/digital_circuits/
5	https://www.javatpoint.com/digital-electronics

Mapping with Programme Outcomes

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	2	1	1	1	1	1	1
CO2	3	3	2	3	2	2	1	2	1	1
CO3	3	2	2	3	2	2	1	2	1	1
CO4	3	3	3	3	2	2	2	2	1	1
CO5	3	3	3	2	2	2	2	2	1	2

3 – Strong, 2 – Medium, 1 - Low

Mapping with Programme Specific Outcomes

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	1	1	1	1
CO2	3	3	2	2	2	1
CO3	3	2	2	2	2	1
CO4	3	3	3	2	2	2
CO5	3	3	3	2	3	2
Weightage	15	13	11	9	10	7
Weighted percentage of Course Contribution to PSOs	3	2.6	2.2	1.8	2	1.4

Mapping Scale: 3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation

SEMESTER I

NON MAJOR ELECTIVE I (NME) OFFICE AUTOMATION LAB

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	Marks		
								CIA	External	Total
ASCS11	Core	Y	Y	-	-	2	2	25	75	100

Learning Objectives

The course aims to:

1. To understand the concepts of MS word.
2. To learn the features of Word.
3. To do calculations in excel.
4. To Design invitation set using Word.
5. To understand and design presentations.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	To make the students gain knowledge about document files, spreadsheets, presentations and databases.	K2
CO2	To process data using formulas and functions.	K3
CO3	Students can create and design presentations.	K3
CO4	Students can create databases and design tables.	K4
CO5	Demonstrate the effective use of technology for academic and professional area.	K3

Bloom's Taxonomy Levels

K1 – Remember, **K2** – Understand, **K3** – Apply, **K4** – Analyse, **K5** – Evaluate, **K6** – Create

Course Content

SNo	Contents	No. of Hours
1	Prepare your resume for a job in a detailed neat document. Highlight your credentials and strengths. Use proper page setting features to improve the readability. Use Numbering, Bullets and Tables whenever required.	6
2	Prepare a month calendar.	6
3	Prepare an interview call letter and send it to 10 candidates using mail merge.	6
4	Prepare a mark statement using spreadsheet	2
5	Prepare a spreadsheet and use abs, round, mod, log, product, sin, cos, tan, min, max functions.	2
6	Prepare a spreadsheet and process any 5 statistical functions.	2
7	Prepare a presentation about yourself with minimum 8 slides that include pictures, animations and transitions	4

8	Create a Student database with a table of fields: age, date of birth, gender, class, place, pin code etc. Apply validation rules for age (17-25), date of birth (valid date), pin code (6 digits), etc. Display your data with proper formatting.	2
	Total	30

S. No.	Text Book
1	Microsoft Office 2016 Step By Step, Lambert, Joan, Frye, Curtis D. ,Phi Learning
2	Microsoft Access 2016 Step By Step, By Lambert, Joan Phi Learning

S. No.	Reference Books
1	Microsoft Excel 2016 Step By Step, Curtis Frye, Phi Learning
2	Browse the Internet for Open Source Office Software

S. No.	Web Resources
1	https://support.microsoft.com/office
2	https://support.microsoft.com/word
3	https://support.microsoft.com/excel
4	https://support.microsoft.com/powerpoint
5	https://support.microsoft.com/access

MAPPING OF COURSE OUTCOMES WITH PROGRAMME OUTCOMES (POs)

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	2	2	1	1	2	1	2	2	1
CO2	2	2	3	2	1	2	1	3	2	1
CO3	2	2	2	2	1	2	2	3	3	2
CO4	2	3	3	3	2	2	2	3	2	2
CO5	2	2	3	2	2	3	2	3	3	3

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation.

MAPPING OF COURSE OUTCOMES WITH PROGRAMME SPECIFIC OUTCOMES (PSOs)

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	2	1	1	2	1
CO2	2	3	2	2	2	1
CO3	2	2	2	2	3	2
CO4	2	3	3	2	3	2
CO5	2	3	2	3	3	3
Weightage	10	13	10	10	13	9
Weighted percentage of Course Contribution to PSOs	2	2.6	2	2	2.6	1.8

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation

FIRST YEAR – SEMESTER I

FOUNDATION COURSE- INTRODUCTION TO PROBLEM SOLVING TECHNIQUES

Subject Code	Category	L	T	P	S	Credits	Inst. Hours	CIA	External	Total
AFCS11	Foundation Course	Y	Y	-	-	2	2	25	75	100

Learning Objectives

The course aims to:

1. Familiarize with computer, computer types and computer software.
2. Understand the programming languages.
3. Know algorithm and flowcharts.
4. Write pseudo code, coding operators in programs.
5. Define and use of arrays, loops.

Course Outcomes

Upon successful completion of the course, students will be able to:

CO No.	Course Outcomes	BT Level
CO1	Study the basic knowledge of Computers.	K1
CO2	Analyze the programming languages.	K2
CO3	Know about the algorithms.	K3
CO4	Develop program using flowchart and pseudo code. Study the data types and arithmetic operations.	K3
CO5	Illustrate the concept of Loops Analyze about Arrays.	

Course Content

Unit	Contents	No. of Hours
I	Introduction: Definition of computer, characteristics of Computer. Hardware/Anatomy of Computer: CPU, Memory, Secondary storage devices, Input Devices and Output devices. Types of Computers: PC, Workstation, Minicomputer, Main frame and Supercomputer. Software: System software and Application software.	6
II	Programming Languages: Machine language, Assembly language, High-level language, 4GL and 5GL. Translators: Interpreters and Compilers, Different phases in Program Development Cycle (PDC).	6
III	Structured Programming: Algorithm: Features of good algorithm, Benefits and drawbacks of algorithm. Flowcharts: Advantages and limitations of flowcharts, when to use flowcharts, flowchart symbols and types of flowcharts.	6
IV	Pseudo code: Writing a pseudo code. Coding, documenting and testing a program, Comment lines and types of errors, Selection Structures: Relational and Logical Operators – Selecting from Several Alternatives – Applications of Selection Structures.	6
V	Counter Controlled Loops, Data: Numeric Data and Character Based Data. Arrays: One Dimensional Array - Two Dimensional Arrays – Strings as Arrays of Characters.	6
	Total	30

S. No.	Text Books
1	Stewart Venit, Introduction to Programming: Concepts and Design, Fourth Edition, 2010, Dream Tech Publishers.
2	R.G. Dromey, How to Solve It by Computer, Pearson Education, Latest Edition.

S. No.	Reference Books
1	V. Rajaraman, Fundamentals of Computers, 6th Edition, PHI Learning.
2	M. M. Mano, Computer System Architecture, Pearson Education.

S. No.	Web Resources
1	https://www.codesansar.com/computer-basics/problem-solving-using-computer.htm
2	http://www.nptel.iitm.ac.in/video.php?subjectId=106102067
3	http://utubersity.com/?page_id=876

MAPPING OF COURSE OUTCOMES WITH PROGRAMME OUTCOMES (POs)

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	1	1	2	1	1	2	1
CO2	3	3	2	2	1	2	1	2	2	1
CO3	2	3	3	2	2	2	1	2	2	1
CO4	2	3	3	3	2	2	2	2	2	1
CO5	2	3	3	3	2	2	2	3	2	2

Mapping Scale

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation

MAPPING OF COURSE OUTCOMES WITH PROGRAMME SPECIFIC OUTCOMES (PSOs)

CO / PSO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	1	1	1	1	1
CO2	3	2	1	1	2	1
CO3	2	3	2	1	2	1
CO4	2	3	2	2	3	2
CO5	2	3	3	2	3	2
Weightage	12	12	9	7	11	7
Weighted percentage of Course Contribution to PSOs	2.4	2.4	1.8	1.4	2.2	1.4

Mapping Scale

3 – Strong Correlation, 2 – Moderate Correlation, 1 – Low Correlation