

<i>DEPARTMENT OF COMPUTER SCIENCE</i>				<i>CLASS: I B.Sc. Computer Science</i>				
Semester	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
I	Major Core - 1	20U1DMC1	Programming in C	3	4	25	75	100

Course Objectives:

This course is designed to provide a comprehensive study of the C programming language and rendering basic programming concepts.

Units	Programming in C --Course Contents	Total Hours: 60
Unit -1	C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical, Assignment and Conditional Operators - Library functions.	12 hrs
Unit-2	Data input output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.	12 hrs
Unit-3	Functions -Definition - proto-types - Passing arguments - Recursions. Storage Classes - Automatic, External, Static, Register Variables - Multi-file programs.	12 hrs
Unit-4	Arrays - Defining and Processing - Passing arrays to functions - Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures - Unions - Bit wise operations.	12 hrs
Unit-5	Pointers - Declarations - Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files: Creating Processing, Opening and Closing a data file.	12 hrs

Text Book

1. E. Balagurusamy, "Programming in ANSI C", Fifth Edition, Tata McGraw Hill.

Reference Books

1. B.W. Kernighan and D M.Ritchie, "The C Programming Language", 2nd Edition, PHI, 1988.
2. H. Schildt, "C: The Complete Reference", 4th Edition. TMH Edition, 2000.
3. Gottfried B.S, "Programming with C", Second Edition, TMH Pub. Co. Ltd., New Delhi 1996.
4. Kanetkar Y., "Let us C", BPB Pub., New Delhi, 1999.

Lesson Plan:

Unit	Topics	Hrs	Mode
Unit I	C fundamentals -Character set - Identifier and keywords	3	Chalk and talk, Quiz and assignment
	Data types - constants - Variables	2	
	Declarations- Expressions - Statements	2	
	Operators - Arithmetic, Unary, Relational ,logical operator	3	
	Assignment and Conditional Operators- Library functions Library functions.	2	
Unit II	Data input output functions - Simple C programs	2	Chalk and talk, Group discussion
	Flow of control - if, if-else statement	3	
	Looping statement- while, do-while, for loop, Nested loop	3	
	control structures - Switch, break and continue	2	
	go to statements - Comma operator.	2	
Unit III	Functions -Definition - proto-types	3	Chalk and talk, Quiz and assignment
	Passing arguments - Recursions	3	
	Storage Classes - Automatic, External	3	
	Static, Register Variables - Multi-file programs.	3	
Unit IV	Arrays - Defining and Processing	2	PPT, Chalk and talk, Quiz and assignment
	Passing arrays to functions	2	
	Multi-dimension arrays - Arrays and String.	2	
	Structures - User defined data types - Passing structures to functions	3	
	Self-referential structures - Unions - Bit wise operations.	3	
Unit V	Pointers - Declarations	2	PPT, Chalk and talk, Quiz and assignment
	Passing pointers to Functions - Operation in Pointers	3	
	Pointer and Arrays - Arrays of Pointers	3	
	Structures and Pointers – Files- Creating Processing	2	
	Creating Processing, Opening and Closing a data file.	2	

COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOMES	Knowledge Level (basis of Bloom's Taxonomy)
CLO-1	Know the knowledge of the structured programming and basic syntax of 'C' language.	K1 , K3
CLO-2	Identify the fundamental operators, data types and all library functions	K4
CLO-3	Identify and design the various features such as Flow control and control structures.	K4, K3
CLO-4	Analyse and construct the programs for Bitwise operators, Union and Structure concept	K2,K4
CLO-5	Design C programs with the concept of pointers, pointers & Arrays, Pointers & Files.	K4
CLO-6	Construct a file program with various operations like create, open, close, process and close.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CLO-1	3	3	3	2	3	2
CLO-2	1	2	2	1	2	1
CLO-3	3	3	3	3	3	2
CLO-4	2	2	3	1	2	3
CLO-5	2	2	3	2	2	3
CLO-6	3	3	3	2	3	2

3- Advanced Application

2- Intermediate

1- Introductory