Course Name : 03 Years Diploma in Engineering

Semester   : Second

Subject Title : Programming in C

Subject Code : 205/208

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
L	T	P	Full Marks.	External Exam Marks	Internal Exam Marks	External Pas Marks	Total Pass Marks	Duration of External Exams
03	0		100	80	20	26	40	3 Hrs
Sessional		2	50	30	20		25	3 Hrs

NOTE:

Internal marks will be allotted on the basis of two snap tests and 2 assignment of equal marks to be conducted by the faculty teaching the subject.

Rationale : These days computer knowledge is essential for engineers. Analysis and logical development of basic entities is any engineering field requires software development which in turn requires a programming tool. The best opted tool for program development paving way for software is C language these days. The advancement of C and subsequent program development utilising the concepts of strings arrays decision making in unconditional and conditional manner is required.

<u>Objectives:</u>

1. Development of flowcharts/algorithms for engineering problem solutions.
2. Structural modular program development for software implementation.
3. Working upon a statistical attributes on different aspects of engineering problem for arriving at best suited solutions.
4. Decision making in various atmosphere and conditions.
5. A tool for better learning and grasp of basics.

Chapter	Contents	Hours	Marks
01	**Basics of C** 1.1 Introduction to number system 1.2 Introduction to flowchart and algorithm 1.3 History of C, where C stands 1.4 C character set ,tokens ,constants ,variables, keywords 1.5 C operators (arithmetic, Logical, assignment, relational, increment and decrement, conditional, bit wise, special, operator precedence),C expressions data types. 1.6 Formatted input, formatted output.	06	12
02	**Decision making** 2.1 Decision making and branching if statement (if, if-else ,else-if ladder, nested if-else) Switch case statement ,break statement. 2.2Decision making and looping while, do, do-while statements for loop, continue statement**.**	06	10
03	**Arrays and Strings** 3.1 Arrays Declaration and initialization of one dimensional, two dimensional and character arrays, accessing array elements. 3.2 Declaration and initialization of string variables, string handling functions from standard library (strlen(), strcpy(), strcat(), strcmp()).	08	16

04	**Functions, Structures**
	
	4.1 Functions
	
	  Need of functions, scope and life time of variables, defining functions, function call (call by value, call by reference), return values, storage classes. category of function (No argument No return value, No argument with return value, argument with return value), recursion
	
	4.2 Structures
	
	  Defining structure, declaring and accessing structure members, initialization of structure, arrays of structure.
		08	**16**

05	**Pointers** 5 Understanding pointers, declaring pointer variable, initialization of pointer variable, accessing address of a variable, pointer expressions, Pointers arithmetic, pointers and arrays, array of pointers	**08**	**16**
06	**File Handling** File System Basics, opening and closing of files, reading and writing in files, File opening modes, string I/O in files.	06	**10**
	Total	42	**80**

Exp. -1: Introduction to C compiler

Exp. -2: Simple basic program in C language using unconditional branching statements.

Exp. -3: Development of C program using conditional branching and subroutines.

Exp.-4 : Development of program for functions.

Exp. – 5 : Development of program in c for operation of one dimensional arrays.

Exp. – 6 : Development of program in c for operation of Multi-dimensional arrays.

Exp.- 7: Development of program in C for display using in different modes.

Exp.-8: Development of program in C for operation on structures.

Exp.-9 : Development of program in C for operation on pointers.

Exp.-10: Development of program in C for file handling.