

## ME181: Computer Programming

Teaching Scheme			Credits C	Marks Distribution				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE	CE	ESE	CE	
3	0	2	5	70	30	30	20	150

### Course Content:

Sr. No.	Topics	Teaching Hrs.
1	<p><b><u>Introduction:</u></b></p> <p>Basic block Diagram and functions of various components of a computer, Concept of Hardware and Software, Compiler and interpreter, Concepts of machine level, assembly level and high level programming, Developing logic of program through flowcharts and Algorithms.</p>	05
2	<p><b><u>Fundamentals:</u></b></p> <p>Features of 'C' language, structure of 'C' program, Basic data types, constants and variables, Basic operators and their hierarchy, Evaluation of expressions, Writing simple programs using 'C', Concept of header files, Basic I/O functions.</p>	06
3	<p><b><u>Control Structures of 'C':</u></b></p> <p>If – else statement and its use in programming, Variations in usage of if – else statement, Switch, break, continue and goto statements, Applications and implementation of various looping structures (i.e. for, while, do - while).</p>	06
4	<p><b><u>Arrays and Strings:</u></b></p> <p>One dimensional and multidimensional arrays and implementation of these concepts in 'C'. Strings and related functions.</p>	06
5	<p><b><u>Functions and Recursion:</u></b></p> <p>Concepts of functions with various types of parameters. Various types of parameter passing mechanisms. Recursive functions and implementation of these concepts in 'C'. Macros and Pre-processors.</p>	06

6 **Pointers and Structures:** 06

Concepts of pointers and simple programs using pointers in 'C', Applications of pointers, Pointer and array, Dynamic memory allocation: malloc and calloc, Concepts of structure and its implementations. Structure as argument to Functions, Structures and pointers, Union and its applications.

7 **File Management in C:** 04

Introduction, Opening, Closing, Input/ Output operations on Files. Error handling during I/O operations, Random Access of files. Command line arguments.

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**Total Hrs. 39**

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**Reference Books:**

1. Balagurusamy E., "*Programming in ANCI C*", Sixth edition, Tata McGraw-Hill Publishing Company Limited.
2. Gottfried, "*Programming with C*", Second edition, Tata McGraw-Hill Publishing Company Limited.
3. Kernigham B.W. and Ritchie D.M., "*C Programming language*", Second edition, Prentice Hall
4. Kanetkar Y. P, "*Let us C*", Fifth Edition, BPB Publication.