

Course Name: Mechanical Engineering Group **Course Code:** ME/AE/PT/PG/MH

Semester: Fourth

Subject Title: Computer Programming

Subject Code:

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme						
TH	TU	PR	Paper Hrs	TH	Test	PR	OR	TW	Total
01	--	02	--	--	--	50@	--	--	50

Rationale:

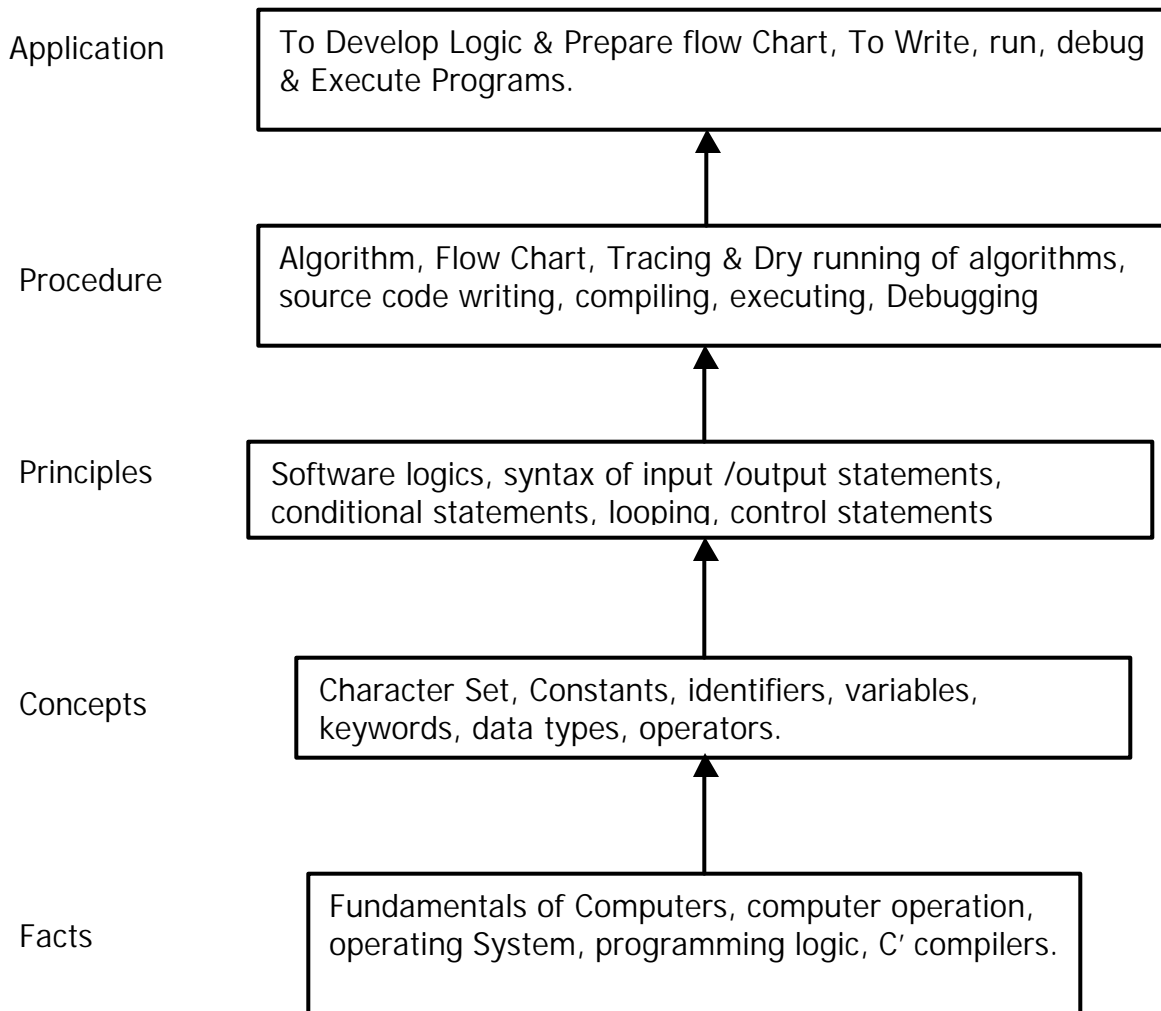
In advanced age of computer, it becomes essential to understand how to give instructions to computers. This course intends to expose a student to the basic principles of programming through a structured programming language like 'C'. Study of this course would enable the students to learn any advanced Object Oriented Language.

Objectives:

Students should be able to:

1. Break a given task into subtasks.
2. Enhance logical thinking.
3. Develop 'C' programs for simple applications.

Learning Structure:



Contents: Theory

Chapter	Name of the Topic	Hours
1.	Introduction - Problem, definition and analysis, algorithm, flow charts, tracing and dry running of algorithms. Introduction to 'C' programming, simple program using Turbo 'C' compiler and execution of 'C' program	02
2.	C Fundamentals: Character set, constants, data types, identifiers, key words, variable declarations Types of Operators – unary, binary, arithmetic, relational, logical, assignment. Hierarchy of operators, expressions, library functions, Use of input/ output functions viz. Printf(), Scanf(), getch(), putch()	03
3.	Use of Control Statements:- if-else, while loop, do – while loop, for loop, switch, break and continue. Writing, Compiling, Executing and debugging programs	05
4.	Introduction to Subscripted variables, arrays, defining and declaring one and two dimensional arrays, reading and writing	03
5.	Concept of String, string input / output functions Defining and accessing a user defined functions, Passing of arguments, declaration of function prototypes Storage classes: automatic, external, static variables	03
	Total	16

Practical:

Intellectual Skills:

- Prepare and interpret flow chart of a given problem.
- Represent data in various forms.
- Use various control statements and functions

Motor Skills:

- Write program in 'C' language.
- Run and debug 'C' program successfully.

List of Practical:

To write simple programme having engineering application involving following statements

1. Use of Sequential structure
2. Use of if-else statements
3. Use of for statement
4. Use of Do-While Statement
5. Use of While statement
6. Use of break and Continue statement
7. Use of multiple branching Switch statement
8. Use of different format specifiers using Scanf() and Printf()
9. Use of one dimensional array e.g. String, finding standard deviation of a group data
10. Use of two dimensional array of integers/ reals
11. Defining a function and calling it in the main

Learning Resources:

Books:

SR. No.	Author	Title	Publication
01	Byron Gotfried	Introduction to 'C' programming	Tata McGraw Hill
02	Yashwant Kanitkar	Let us 'C'	BPB publications
03	Denis Ritchie and Kerninghan	Introduction to 'C' programming	Prantice Hall Publications
04	Balguruswamy	Programming in 'C'	Tata Mc- Graw Hill