Introductory Computing CO 103

2 - 1 - 0 : 3 Credits : 3 Hours *Prerequsites:* None

Abstract: This course focuses on the development of programming and problem solving skills of the students. The course begins with familiarizing the students about the fundamentals of computer system. Itemphasizes how real problems can be analyzed, outlined and finally transformed into a well-organized program.

Computer Fundamentals:

- History, Generations, Classification of Computers;
- Software and hardware
- Organization of a Computer: Input/Output devices, Memory, CPU;
- Levels of computer languages.
- Character and number representations in computer.

Introduction to Programming:

- Concept of Algorithm, Flow Chart, Pseudocode, Illustrative Problem Solving Examples.
- Features of a Programming Language: Character Set, Identifiers, Keywords, Data Types, Variables, Declarations.
- Operators & Expressions: Types of operators, precedence and associativity rules;
- Statements: Assignment, formatted and unformatted Input/Output;
- Flow Control- Conditionals and Branching, Iteration;
- Functions: Defining and accessing function, function prototypes, Recursion, Scope rules;
- Data types: Derived and user defined data types (arrays, string, pointers, structures etc.)

 (A programming language like C/C++ shall be used as a basis language. The same language is to be used for the laboratory).

Books:

1. Fundamentals of Computers, Rajaram, V.
2. Programming in C, Balaguruswamy.
3. Programming in C, Gottfreid, McGrawHill

Reference:
1. Let us C, Kanetkar Y.
2. Theory and Problems of Computers and Programming, Schied, F. S.
3. The C Programming Language, Kerningham& Ritchie.
4. How to Solve it by Computer, R. G. Dromey

Outcomes:
- Students are able to develop algorithms and write programs related to simple and moderate real problems using a programming language.
- Students attain confidence and capability of problem solving using computer.