10B11CI111: Introduction to Computers and Programming

Course Credit: 4
Semester: I

Introduction

This course is designed to familiarize students with the basic components of a computer, so as to be able to operate it and be able to interact with it, and carry out simple tasks. In addition, it will initiate the students into the discipline of Programming. It aims to start off the development of problem solving ability using computer programming. This course teaches not only the mechanics of programming, but also how to create programs that are easy to read, maintain, and debug. Students are introduced to the design principles for writing good programs regardless of the hardware and the software platforms.

Course Objectives (Post-conditions)
Knowledge objectives:

Students will be acquainted with Data & Instruction representation, Architecture and functional operation of computer peripherals, User-interface of DOS, Windows and UNIX. In addition, they will develop their ability to design, develop, test and document structured programs in C language.

Application objectives:

1. Familiarize students with the basic components of a computer, so as to be able to operate it and be able:
   To interact with it and carry out simple task
2. It will initiate the students into the discipline of Programming
3. It aims to start off the development of problem solving ability using computer programming.
4. To create programs that are easy to read, maintain, and debug
5. Students are introduced to the design principles for writing good programs regardless of the hardware and the software platforms

Expected Student Background (Preconditions)
Nil

Topics Outline:

S NO	Topics	Hrs
1	Introduction to Computers, the Internet and the World Web Wide: Introduction	5
2	Bits, Data Types and Operations	3
3	The von Neumann Model	3
4	Introduction to C programming	2
5	C Program Control	4

6	C Functions	5
7	C Arrays	3
8	C Pointers	5
9	C Characters and Strings	3
10	C Formatted Input/Output	2
11	C Structures, Unions, Bit Manipulations and Enumerations	4
12	C File Processing	3
	Total	42

References

1. Yale N. Patt and Sanjay J. Patel, Introduction to Computing Systems, from bits & gates to C & beyond, 2nd Edition, 2004.
2. Deitel and Deitel, C How to Program, 7th Edition, 2013.
3. Venugopal Prasad, Mastering C, Tata McGraw Hill.
4. Complete Reference with C, Tata McGraw Hill.
5. Drmey, How to solve it by Computer, PHI.
6. Kerninghan and Ritchie, The C Programming Language.

Evaluation Scheme:

S.No	Examination	Marks
1	T-1	15
2	T-2	25
3	T-3	35
4	*Internal Marks	25

*Internal Marks Breakdown:

Assignments 9 marks (3x3)

Quizzes 12 marks (3x4)

Regularity 4 Marks