**Indian Institute of Information and Technology, Allahabad**

**(Deemed University)**

**Introduction to Computer Technology & Programming Total lectures: 30**

## Credit hours: 3 hrs Program: MSCLIS (1ST Sem)

**Course Objective**

This course gives a basic introduction to computer theory with an emphasis upon the uses of computer technology in the field of Information Technology. Topic categories include *Computing Fundamentals*, *Key Applications* and *Living Online*. *Computing Fundamentals* covers hardware, software and operating systems. This course also gives the programming techniques based on 4GL language and Internet programming language.

**Detailed Syllabus**

**Unit 1: Introduction to Computer Technology**

* **History of computers**
  + Computer generations
  + Computer hardware and software
  + Computer Basics and Terminology
  + Key applications: MS Office. Internet E-mail.
  + Shell-scripting\*
* **Computer Systems Databases**
  + What is a database?
  + Relational databases
  + How is a database searched (principles of indexing)
  + Data-mining
* **Operating System**
  + Parallel
  + Distributed
  + Stand alone
  + Windows
  + Linux
* **Distributed Computing**
  + Timeshare
  + Client/server computing
  + Distributed processing

**Unit 2: Introduction to programming (C89/C++98)**

* + Programming generations
  + Program methodology, flowcharts\*, pseudocode\*
  + Introduction to algorithm and algorithm design, space-time tradeoff\*
  + C-Programming fundamentals includes Data types/ variable/ Structure/ pointers.
  + Object oriented programming concepts, learning programming in C++, class/objects, templates\*, operator overloading\*

**Unit 3: Internet programming concepts HTML/JAVA Scripting.**

**Books References:**

* www.w3schools.com
* www.wikipedia.org
* Parsons, J. J. & Oja, D. (2005). *Practical Computer Literacy.* Boston: Course Technology of Thomson Learning. **ISBN: 0-619-21389-2**.
* Fundamental of Computer by Rajaraman PHI.
* Mobile Communication by Schiller Pearson
* Internet and WWW How to Program by Deitel Deitel and Nieto
* Distributed System by Tanenbaum PHI
* XML by Example by Marchal EEE.
* The C programming by Kernighan/Ritchie Pearson
* Mastering Web Designing by BPB.
* Jumping Java Script by Watson/Freemon/Andreson Addison wesly
* PHP in A Nut Shell by Hudson Orelly.

**Lab:**

* Operating system: Linux (CentOS 6)
* Software: GCC Compiler Suite, Apache.
* Grading Policy
  + - * + Marks: Mid-Sem = 30%, End-Sem = 45%, Viva = 15%, Attendance = 10%.
        + Attendance: 80% or more gets proportionate attendance marks, 50%-75% penalty of a grade, <50% fail

\*Introducing for the first time as an experiment to improvise the curriculum.