

Indian Institute of Information and Technology, Allahabad (Deemed University)

Introduction to Computer Technology & Programming
Credit hours: 3 hrs

Total lectures: 30
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.

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.