Syllabi of Computer Science IDC Courses

Semester : I
Course Type : IDC
Course Code : CSCIDC101
Name of the Course : Computer Fundamentals and Applications
Learning level : Foundation or Introductory Course
Credits : 3
Contact Hours : 45
Total Marks : 100
End Semester Marks : 70
Internal Marks : 30

Course Objectives:

1. To introduce the basic components of a computer and software
2. To provide overview of number system, operating system and computer language
3. To provide overview and use of Internet and online services.

UNIT I

Introduction to Computer: Computer Definition, Characteristics of Computers, Evolution of Computers & its applications, Types of Computers, Basic Organization of a Digital Computer, Hardware and Software, Central Processing Unit, Input devices, Output devices, Application Software, Systems Software, Utility Software, Open source and Proprietary Software, Mobile Apps.

UNIT II

Data Representation:Number systems and character representation, Binary, Octal, Decimal and Hexadecimal numbers.

Operating System: Basics of Operating System, Functions of Operating System.

Computer Language: Definition, Types of Languages, Language Processors: Assembler, Interpreter, Compiler, Linker and Loader; Algorithm and flowchart.

UNIT III

Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, harddisks, optical disks.

UNIT IV

IT Tools overview: Word Processing Basics, features of word processor, clipboard, font, page and paragraph formatting, table creation, page setup and spelling and grammar. Spreadsheet concept, Elements of Spreadsheet, Creating of Spreadsheet, cell address, formula bar, formulas and chart. Creation of Slides, Inserting & Editing Text on Slides, Slide transition and Animation.

UNIT V

Overview of Internet and IT Enabled Services: Internet, WWW, URL, E-mail, Using E-mails: Opening, Creating and Sending, forwarding and Replying to an E-mail message, Introduction to Blogs, Basics of E-commerce, Overview of e-Governance Services, e-

Governance Services on Mobile Using "UMANG APP", Digital Locker. Digital Financial Tools, eWallet, PoS, Internet Banking.

Course Outcomes: *After successful completion of the course, the students will be able to*

1. Describe the hardware, software and components of a digital computer
2. Explain number systems, functions of operating systems and language processors.
3. Create and use of email, e-Governance, and financial services

Text Books:

1. Pradeep K. Sinha and Priti Sinha, **Computer Fundamentals**, BPB Publication, 8th Edition, 2018.
2. V. Rajaraman, **Introduction to Information Technology**, PHI Learning; 3rd edition, 2018
3. Anita Goel, **Computer Fundamentals**, Pearson Education India; First Edition, 2010

Reference Books:

1. David Riley and Kenny Hunt, **Computational Thinking for Modern Solver**, Chapman and Hall/CRC; 1st edition, 2014.
2. Glenn Brookshear, **Computer Science: An Overview**, Pearson Education; Twelfth edition, 2017.
3. Puneet Kumar, Sushil Bhardwaj, *et al.*, **Introduction to Information Technology**, Kalyani Publishers; 2018th edition, 2018.

Semester : II
Course Type : IDC
Course Code : CSCIDC151
Name of the Course : Programming Fundamentals with C
Learning level : Foundation or Introductory Course
Credits : 3
Contact Hours : 45
Total Marks : 100
End Semester Marks : 70
Internal Marks : 30

Course Objectives:

1. Write algorithms, flowcharts and programs.
2. Implement different programming constructs and decomposition of problems into functions.
3. Use and implement data structures like arrays to obtain solutions.