**Course Title:** Computing Fundamentals

**Course Code:** CSC 110

**Credit Hours:** 2+1

**Prerequisite:** None

**Course Content**: This course covers an introduction to computers, including its fundamental functions and operations. It provides elementary knowledge about the present-day technologies. Information technology concepts are covered, along with basic awareness of how computers work and communicate. Emphasis is placed on developing rudimentary computer skills for students.

**Course Learning Outcomes:**

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| CLO | Statement | Bloom’s Taxonomy | Associated PLO |
| 1 | Define the basic concepts and terminologies of a computer system and various components of computer system. | C1 | PLO1 |
| 2 | Explain and differentiate between the various component of computer. | C2 | PLO1 |
| 3 | Solve variety of problems related to computer systems including binary operations, number system conversions**,** network topologies, and databases. | C3 | PLO2 |
| 4 | Present given Computing Fundamentals course topics clearly and professionally in the front of class. | A2 | PLO10 |

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| Week | Lectures | Topics |
| 1 | 1 | Introduction to Computers, and its various terminologies |
| 2 | History of Computers; Introduction to Information Technology concepts |
| Lab: 0 | Introduction to MS WORD: Textbox, watermarks, table of content and mail Merge. |
| 2 | 3 | Components of System Unit: Motherboard, Processor: CU & ALU, Memory & its Types, Buses, Ports, Connectors, Machine Cycle. |
| 4 | Machine Architecture: Harvard Model, & Princeton Model (von Neumann Architecture) |
| Lab: 1 | Introduction to PowerPoint: Design professional presentations, add animations, create personalize theme, import templates |
| 3 | 5 | Input and Output Devices |
| 6 | Storage Devices |
| Lab: 2 | Performing arithmetic operation using MS excel, studying advance formulas. |
| 4 | 7 | Number Systems: Decimal, Binary, Octal, and Hexadecimal  QUIZ # 1 |
| 8 | Number Base Conversions (Decimal to Binary, Binary to Decimal, Octal to Binary, Binary to Octal) |
| Lab: 3 | Converting Number Base using Microsoft Excel, & learning Pivot Tables & Pivot Charts |
| 5 | 9 | Number Base Conversions (Hexadecimal to  Binary, Binary to Hexadecimal, Decimal to  Octal, Octal to Decimal, Decimal to Hexadecimal, Hexadecimal to Decimal) |
| 10 | Binary Arithmetic, 1’s and 2’s Complement |
| Lab: 4 | Working with flow charts and UML diagrams in Microsoft Visio. |
| 6 | 11 | Software: Application and System Software;  The Components of System Software, Operating System, Common Operating Systems |
| 12 | Other System Software: Device Drivers & Utility Programs; File Allocation |
| Lab: 5 | Web designing using HTML, Insert and modify Tables, image and etc. |
| 7 | 13 | Application Software: Productivity Software  QUIZ # 2 |
| 14 | Application Software: Graphics, & Other Types of Application Software  ASSIGNMENT # 1 |
| Lab: 6 | Introduction to bootstrap |
| 8 | 15 | REVISION |
| 16 |
| Lab: 7 | LAB EXAM - I |
| 9 | MID EXAM | |
| 10 | 17 | Introduction to Flowcharting, Basic Flowchart  Symbols, Structures, Connectors, & Modules |
| 18 | Algorithms; Algorithms versus Programs |
| Lab: 8 | Using JavaScript, JavaScript Pop-up Boxes |
| 11 | 19 | Introduction to Programming Paradigms: Procedural, Functional, Logical, Object Oriented, C (Basic) Data Types, User Defined (Data) Types, Derived (Data) Types |
| 20 | Web Designing Basics |
| Lab: 9 | Introduction to MS Access, create table, inset/update/sort records |
| 12 | 21 | XML, XHTML, JavaScript |
| 22 | Web Applications |
| Lab: 10 | working with queries, forms, ERD using Access |
| 13 | 23 | Introduction to World Wide Web & Internet; OSI Model  ASSIGNMENT # 2 |
| 24 | Emails, Social Networking, Blogs, File & Video Sharing |
| Lab: 11 | Working with Microsoft publisher. |
| 14 | 25 | Impact of Internet: Security, Privacy, Ethical, & Legal Issues; Virus & Other Threats |
| 26 | Databases, Database Management Systems, Query Languages, Database Forms, Database Reports |
| Lab: 12 | Working with MS project. |
| 15 | 27 | Networks: Types, Components, Architecture, Topologies.  QUIZ # 3 |
| 28 | Encryption, Decryption, Compression  ASSIGNMENT # 3 |
| Lab: 13 | Introducing Basic Network Commands, & Compression Utilities |
| 16 | 29 | Wired Communication Media |
| 30 | Wireless Communication Media, & its Types & Connections |
| Lab: 14 | Introduction to google forms. |
| 17 | 31 | REVISION |
| 32 |
| Lab: 15 | LAB EXAM – II |
| 18 | FINAL EXAM | |

**Recommended Books:**

**Text Book(s):**

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| S/No | Title | Author | Recommended Edition(s), Year | Publisher |
|  | Computing Fundamentals: Introduction to Computers | Faithe Wempen, | 4 th Edition, 2015 | John Wiley & Sons Publication |
|  | Introduction to Computers | Peter Norton | 7 th Edition, 2012 | Jones & Bartlett Learning |

**Reference Book(s):**

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| --- | --- | --- | --- | --- |
| S/No | Title | Author | Recommended Edition(s), Year | Publisher |
|  | Introduction to Computer Science | G. Michael Schneider and Judith Gersting | 6 th Edition, 2013 | Cengage Learning |
|  | Computer Networks. | Andrew S. Tanenbaum and David J. Wetherall | 5th edition | Pearson |