

Institute of Computer Science/Information Technology (ICS&IT)  
Faculty of Management Sciences & CS/IT (FMCS)  
The University of Agricultural Peshawar

Program: BS(CS+IT)-I  
Course Name: Application of ICT (Introduction to ICT)  
Course Code: GE-301  
Course Hours: 03  
Total Weeks: 16  
Total Hours: 48

Course Objectives

The students after successful completion will be able to: (i) Answer questions regarding computers in general, computers hardware and its peripherals, System unit; Concepts regarding software, its types, basic operations, basic OS concepts, Networks and its types, The need and type of programming languages, Internal circuit of computer system its designing and working using Boolean Logic: number system used by a computer and their conversion from one number system to another. Introduction to various Application Packages: List the principal features of a word processing program (MS-Word) and Spreadsheets (MS-Excel); (ii) Manipulate data in reports using database tables (MS-Access); and (iii) plan and design a presentation (MS-PowerPoint). Set up a computer for World Wide Web connection; Use e-mail to send / receive messages and file attachments; Learn about Artificial intelligence and its applications, software development methodologies and processes.

Week-1

- Introduction to Computers
- Computer, its characteristics
- History, generations of computers,
- Computer system and its Components

Week-2

- Types of Computers
  - Microcomputer Systems
  - Mainframe Computer Systems
  - Super Computers
  - Workstation
  - Minicomputer
  - Wearable Computer
  - Personal Computers
  - Tower Model
  - Desktop Model
  - Notebook, Laptop
  - Palmtop, PDA
  - Hand-held computer

### Week-3

- Computer Hardware
- Basic Architecture of Computer System
- Computer Memory: Primary (i.e., RAM-SRAM & DRAM, ROM-MROM, ROM, PROM, EPROM, EEPROM, BIOS Cache, CPU Register) and
- Secondary/Permanent storage (i.e., magnetic, SSD, optical, flash, Memory Card, Input/output devices, system buses .CPU and its components.

### Week-4

- Software – basic operations;
- Types: System Software's (Operating Systems, Utility programs, embedded operating systems, Drivers, Firm-wares, BIOS, Translators)
- Application Software's (desktop Applications, web, mobile, Word processing, Presentation, MS Excel, Educational, Multimedia, Database Management),
- Software Copyright status and piracy Categorization of software w.r.t. Copyright status

### Week-5

- Operating systems
  - Introduction to DOS, Common Commands, Introduction to Windows
  - Familiarization with Windows Icons
  - My Computer
  - Recycle Bin
  - Control panel
  - Start Button
  - Other Sub Menus
  - Task Bar
  - Shut down Processes

### Week-6

- Numbering Systems
  - Binary, Octal, Decimal and Hexadecimal
  - Conversion from one number system to other
  - Binary to Decimal
  - Binary to Octal
  - Binary to Hexadecimal
  - Octal to Binary
  - Octal to Decimal
  - Octal to Hexadecimal
  - Decimal to Binary
  - Decimal to Octal
  - Decimal to Hexadecimal
  - Hexadecimal to Binary
  - Hexadecimal to decimal
  - Hexadecimal to Octal

#### Week-7

- Computer Programming
  - The need of Programming
  - Programming Languages
  - Machine Language
  - Low Level Languages
  - High Level Languages

#### Week-8

- Word Processing Basics
- Create, save, close, open, and print MS word document, insert tables, figures, header and footer in a word document, automatic table of contents, table of tables and table of figures creation, linking excel with word.

#### Week-9

- Spreadsheet Applications Formulas,
- Data visualization (charts and graphs design)
- Introduction to Data Analysis Tool
- How to create relational databases in Excel 2013 and Higher Versions

#### Week-10&11

- Database Applications
- Traditional file processing
- Database management system
- Database basics (Table/relation/file, record, field)
- Types of databases
- Design of a database
- Practical database design in MS ACCESS (create Tables, Queries, Form, Reports)

#### Week-12&13

- Presentations through PowerPoint; Adding Smart Art, Inserting Shapes, Inserting an Image, Slide Transitions, Adding Animations
- Integration (export slides into Word documents and import/link Excel charts within your presentation)

#### Week-14

- Network & Networking Basics,
- Data transmission Modes (Simplex, Half Duplex, Full Duplex)
- Types of Network LAN, MAN, WAN, GAN,
- Network Topologies
- Intranet, Extranet
- Client-server,
- Peer-to-peer network,
- Wi-Fi
- Bluetooth,
- Cellular radio (2G, 3G, 4G, 5G)

Week-15&16

- Computer viruses (Trojan horse, worms and viruses),
- Protection from viruses (Antivirus)
- Firewalls and its types
- Introduction to IT,
- Introduction to software engineering (elements of software design life cycle)
- Internet & E-mail: WWW and Web 1.0 to 4.0 (higher versions)
- Web browser, Web sites/design steps, HTML, Web Searching, Search Engines, Chat rooms, VoIP, GPS, Newsgroup, RSS, Voice Mail, Online Social Networks, Wireless messaging services, Firewall, cybercrimes, Electronic Commerce and Electronic Business

Total Marks: 100

Recommended Books:

- Rahman Ali and Asmat Ali (2021). *Introduction to Computer & ICT* (2<sup>nd</sup> Edition). Peshawar, Pakistan: Al-ilum Publication.
- Norton, P. (2006). *Introduction to Computers*, (6<sup>th</sup> Edition). Irwin McGraw-Hill Publications.
- Perry, G. (2013). *SAMs Teach Yourself Microsoft Office XP in 24 Hours*, (3<sup>rd</sup> Edition). SAMS Publishing.
- Perry, G. (2002). *SAMs Teach Yourself Microsoft Windows XP in 24 Hours*, (2<sup>nd</sup> Edition). SAMS Publishing.
- Crumlish, C. (1997). *The ABCs of the Internet*, (2<sup>nd</sup> Edition). Sybex Inc.
- Ramon, A., Mata-Toledo, Pauline, K., & Cushman. (2000). *Schaum's Outline of Introduction to Computer Science*(Latest Edition), McGraw-Hill Professional