

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: Introduction to ICT
Course Code: GE-301
Session: 2022-2026
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 (2nd Edition). Peshawar, Pakistan: Al-ilum Publication.
- Norton, P. (2006). *Introduction to Computers*, (6th Edition). Irwin McGraw-Hill Publications.
- Perry, G. (2013). *SAMs Teach Yourself Microsoft Office XP in 24 Hours*, (3rd Edition). SAMS Publishing.
- Perry, G. (2002). *SAMs Teach Yourself Microsoft Windows XP in 24 Hours*, (2nd Edition). SAMS Publishing.
- Crumlish, C. (1997). *The ABCs of the Internet*, (2nd Edition). Sybex Inc.
- Ramon, A., Mata-Toledo, Pauline, K., & Cushman. (2000). *Schaum's Outline of Introduction to Computer Science*(Latest Edition), McGraw-Hill Professional