Department of Computer Systems Engineering
University of Engineering and Technology, Peshawar

CSE-101 – Computer Fundamentals

General Information

Instructors	Dr. Safdar Nawaz Khan Marwat
Credit Hours	3 Units
Course Delivery	Lecture: 3 hours/week
Prerequisite(s)	Nil
Semester	1st Semester, Fall
Lecture Hours	Sec A: Mon, 08:00-09:30 (Lab 1) & Thu, 11:00-12:30 (Lab 1) Sec B: Mon, 11:00-12:30 (Lab 1) & Thu, 12:30-02:00 (Lab 1) Sec C: Tue, 02:00-03:30 (DSP Lab) & Thu, 08:00-09:30 (Lab 1)
Group Email	2021_CF_fall@googlegroups.com
Contact	safdar@uetpeshawar.edu.pk, DCSE FYP Lab

Statement

This course provides an introduction to computers, features of computer systems, data processing, data storage, word processors, operating systems, number conversions, networking, and basic concepts of programming.

CSE 101: Computer Fundamentals

Credit Hours: 3

Contact Hours: 3

Grading: As per UET rules

1. COURSE OUTLINE

Computer Fundamentals (CF) course provides an introduction to components of a computer system. Various types of computer for both individual and organizational users are described along with impact of computers on society. The four parts of a computer system named hardware, software, data and user are elaborated in detail. The information processing cycle i.e. input of data, processing of data and obtaining useful information for output as well as storage and retrieving data is part of the course. Other topics include input/output devices, ergonomics, processors, storage devices, number conversion for different base systems and logical operations.

This course also provides an overview of advanced topics like operating systems, computer networks, data communication, database management and computer programming. Due to the importance of programming proficiency in computer systems engineering, students are provided with a platform of programming concepts. Students are trained to develop skills for planning computer programs by using two conventional methods; flowchart and pseudocode. Students are trained to illustrate programming ideas graphically using flowchart and textually using pseudocode.

2. Weekly Plan

Week	Contents
Week 1	Computer Systems Looking Inside the Computer System Parts of the Computer System Information Processing Cycle
Week 2	Hardware and Software Input and Output Devices
Week 3	Information Processing Numbering Systems (Base 2 to 16)
Week 4	Number Conversions (Base 2 to 16) Binary Arithmetic
Week 5	Logical Operations Truth Table Diagrammatic Representation
Week 6	Seeing and Hearing Printers Projectors
Week 7	Microprocessors Instruction Set and Machine Cycle Memory

	Components Affecting Speed
Week 8	Modern CPUs Extending Processing Power Storage Devices Magnetic, Optical and Solid State Storage
Midterm Examination	
Week 9	Network Basics Uses of a Network Network Types, BAN, PAN, LAN, WAN, Hybrid Private Network, Virtual Private Network
Week 10	How Networks are Structured Network Topologies Network Media, Wired, Wireless and Mobile Networks Network Hardware, Cabling, Protocols, OSI Model Data Communication
Week 11	Operating Systems Uses of Operating Systems Types of Operating Systems Survey of PC and Network Operating Systems Windows, DOS, UNIX, Linux, MAC OS, Embedded OS
Week 12	Computer Program Machine, Assembly and High Level Languages Planning Tools Algorithm and Heuristic Structured and Object Oriented Programming
Week 13	Markup Languages Scripting Languages Systems Development Life Cycle
Week 14	Pseudocode and Flowchart Arithmetic Operations Variable Types if Statement, if else Statement
Week 15	Nested if else Statement Loop, for, while, do-while loop
Week 16	Practice Examples of Pseudocode and Flowchart
Final Term Examination	

3. CLOs and its Mapping with PLOs

CLO #	CLO	Cognitive Domain	PLOs
CLO-1	Describe components of a computer system and explain the information processing cycle of computer	C2 (Comprehension)	PLO1 (Engineering Knowledge)
CLO-2	Explain the role of computers in society and discuss the benefits of computer for technological advancement	C2(Comprehension)	PLO6 (The Engineer and Society)
CLO-3	Apply computer programming structures for solving engineering problems with flowchart and pseudocode	C3 (Application)	PLO3 (Design/Development of Solutions)

4. CLOs Assessment Mechanism

Assessment Tools	CLO1	CLO2	CLO3
Assignments	✔	✔	✔
Quizzes			
Mid Term	✔	✔	
Final Term			✔
Semester Project			

5. Resources

- TEXT BOOK
    1. Peter Norton, “Introduction to Computers”, McGraw-Hill Education, 7th or 8th Edition

6. Tentative Grading Criteria

- Midterm Examination : 25%
- Final Examination : 50%
- Assignments : 12.5%
- Quizzes : 12.5%