COURSE PLAN

FIRST: BASIC INFORMATION

College	
College	
Department	
Course	
Course Title	Computer Architecture
Course Code	020406132
Credit Hours	3 (2 Theoretical, 1 Practical)
Prerequisite	020406131 / 020406121
Instructor	
Name	
Office No.	
Tel (Ext)	
E-mail	
Office Hours	

Sunday	Monday	Tuesday	Wednesday	Thursday

Class Times

Building	Day	Start Time	End Time	Room No.

Text Book

- Computer Architecture, Al-Balqa Applied University & KOICA, 2022

References

- Linda Null and Julia Lobur, "Essentials of Computer Organization and Architecture," 5th Ed., Jones & Bartlett Learning, 2018
- William Stallings, "Computer Organization and Architecture: Designing for Performance", 10th ed., Pearson.

SECOND: PROFESSIONAL INFORMATION

COURSE DESCRIPTION

This course explains how a computer works in the aspect of hardware and software. The basic components including CPU, memory, and input output subsystems are handled in the hardware aspect and installing and managing operating system and application software are covered in the software aspect. Various computer networks and related software are also covered.

COURSE OBJECTIVES

The Objectives of this course are to enable the students to do the followings:

- Explain the computer structure and its operation entirely and each unit separately.
- Explain the function, characteristics, and the services of the operating systems.
- Implement simple computer network.

- Explain the internet protocols, internet structure, and IoT

COURSE LEARNING OUTCOMES

By the end of the course, the students should be able to:

CLO1. Explain the structure and operate characteristics of computers internally
CLO2. Explain the function of CPU
CLO3. Identify the elements of instruction sets
CLO4. Explain the function of each element in memory hierarchy
CLO5. Explain the function and the characteristics I/O system
CLO6. Explain the structure and operate characteristics of storage system
CLO7. Explain the function of the OS
CLO8. Describe how computer networks are organized
CLO9. Implement a simple LAN with hubs, bridges, and switches
CLO10. Explain the Internet protocols
CLO11. Explain IoT fundamentals

COURSE SYLLABUS

Week	Topic	Topic details	Reference chapter	Proposal assignments
1	Components in computers	• The main component of a computer • An example system. • Standard organization.	CLO1	
2	Components in computers	• The computer level Hierarchy. • The Von Neumann Models. • The Non-Von Neumann Models	CLO1	
3	CPU and instruction set	• How the CPU works • CPU Organization • Input/Output Subsystem. • Memory Organization and Addressing.	CLO2	
4	CPU and instruction set	• The MARIE Architecture. • Registers and Buses. • The Instruction Set Architecture. • Clock - synchronization	CLO3	
5	CPU and instruction set	• The Fetch-Decode-Execute Cycle. • Interrupts and I/O. • A Simple Program	CLO3	
6	Memories	• Memory • Types of Memory. • The memory Hierarchy	CLO4	
7	Input/output system	• Amdahi's Law • I/O Architectures: • I/O Control Methods.	CLO5	

Week	Topic	Topic details	Reference chapter	Proposal assignments
		• I/O Bus Operation		
8		**Midterm Exam**	**Midterm Exam**	
9	Storage systems.	• Magnetic Disk Technology: • Rigid Disk Drives. • Optical Disk • CD ROM and DVD • Hard driver and SSD	CLO6	
10	System software (OS)	• Operating systems (OS) concepts. • OS History • OS Design.	CLO7	
11	System software (OS)	• Process management. • Resource management • Security and protection.	CLO7	
12	Computer Network	• Computer network overview. • Installation of computer network • Local Area Network and Wide Area Network	CLO98	
13	Computer Network	• TCP/IP • Network Installation • Wired and wireless connection	CLO9	
14	Internet	• The Internet Overview. • The HTTP protocols. • The HTTPS protocols.	CLO10	
15	Internet of Things	• IoT (Internet of Things) fundamentals • IoT Architecture & Protocols. • Services through IoT	CLO11	
16		**Final Exam**	**Final Exam**	

COURSE LEARNING RESOURCES

Teaching will be achieved using available resources including lectures, data show, and materials uploaded on the e-learning system.

ONLINE RESOURCES

Any web site or tutorial that offers information about Automatic control systems analysis and design.

ASSESSMANT TOOLS

Assessment Tools	%
Projects and Quizzes	20%
MID Exam	30%
Final Exam	50%

	Total Marks	100%	

THIRD: COURSE RULES

ATTENDANCE RULES

Attendance and participation are extremely important, and the usual University rules will apply. Attendance will be recorded for each class. Absence of 10% will result in a first written warning. Absence of 15% of the course will result in a second warning. Absence of 20% or more will result in forfeiting the course and the student will not be permitted to attend the final examination. Should a student encounter any special circumstances (i.e. medical or personal), he/she is encouraged to discuss this with the instructor and written proof will be required to delete any absences from his/her attendance records.

GRADING SYSTEM

Grade	points
FAILED	0-49
PASSED	50-100

REMARKS

- Copying assignments, quizzes, or exams from another student will not be tolerated.
- Helping other students to cheat in any way or form will not be tolerated.
- Excellent attendance is expected.
- BAU policy requires the faculty member to assign ZERO grade (F) if a student misses 20% of the classes without a valid excuse.
- If student miss a class, it is his responsibility to find out about any announcements or assignments he/she may have missed.
- Participation in, and contribution to class discussions will affect the final grade positively.
- Making any kind of disruption (side talks or mobile ringing) in the class is not allowed and it will affect student negatively.
- Makeup exam should not be given unless there is a valid excuse according to BAU policies.

COURSE COORDINATOR

Course Coordinator:	**Department Head:**
Signature:	**Signature:**
Date:	