



**Follow up of
Syllabus
Implementation**

Course Instructor	Mithak Ibrahim Hashem				
E_mail	mithak@utq.edu.iq				
Title	Computers Architecture				
Course Coordinator					
Course Objective	Computer architecture course aims to teach the student how the computer is working from inside point of view and how its components is connected and organized together. Also to give the student the necessary knowledge and skills to teach this subject in the primary and secondary schools.				
Course Description	This course consists of the advanced concepts of the computer system architecture, organization and design to understand how the computer components is working together and how they are connected.				
Textbook	<ol style="list-style-type: none"> 1. Computer System Architecture, Morris Mano, 3rd edition, 1993. 2. Computer Organization and Design, David A. Patterson, John L. Hennessy, 3rd Edition, 2005. 				
Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	40	-	10	-	50
General Notes					



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University: Thi Qar
College: Education for Pure Sciences
Department: Computer Science
Stage: Third
Lecturer Name: Mithak Ibrahim
Academic Status: Lecturer
Qualification: Ph.D.
Place of Work: University of Thi Qar

Week	Date	Course Weekly Outline	Lab.	Notes
1	17/9/2023	Introduction to Computer Architecture, Classification (Von Neumann and Non Von Neumann Machines).	-	
2	24/9/2023	Memory System Hierarchy	-	
3	01/10/2023	Memory System Decoding	-	
4	08/10/2023	Memory Chips Expansion: Horizontal, Vertical, Hybrid	-	
5	15/10/2023	Semiconductor Memories: - RAMs: Static, Dynamic - ROMs: ROM, PROM, EPROM, EEPROM	-	
6	22/10/2023	Virtual Memory: Principles, Techniques	-	
7	29/10/2023	- Paging - Segmentation	-	
8	05/11/2023	Cache Memory: Principles, Design	-	
9	12/11/2023	- Structure - Operations	-	
10	19/11/2023	Cache Memory Mapping: - Associative - Direct - Set Associative	-	
11	26/11/2023	Cache Issues: - Replacement - Writing - Initialization	-	
12	03/12/2023	Introduction to Instruction Set Architecture: - Instruction Format - Types of Machines Instruction - Addressing Modes	-	
13	10/12/2023	Register Transfer and Micro-operations	-	
14	17/12/2023	CPU Structure, Register Organization	-	
15	24/1/2023	Exams		
16	31/1/2023	Exams		

Half-year Break



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17	28/1/2024	Bus System Design	-	
18	04/2/2024	Arithmetic Unit Design: - Addition (traditional adders, carry look-ahead adders) - Subtraction	-	
19	11/2/2024	- Multiplication - Division	-	
20	18/2/2024	Logic Unit Design	-	
21	25/2/2024	Introduction to Control Unit Design - Timing and Control	-	
22	03/3/2024	Hardwired Control Unit	-	
23	10/3/2024	Basic Computer Machine, Instruction Set, Programs	-	
24	17/3/2024	Micro-programmed Control Unit, Microinstructions	-	
25	24/3/2024	Interrupts: External, Internal and Software Interrupt	-	
26	31/3/2024	Input Output System: Principles, I/O Controllers	-	
27	07/4/2024	I/O Techniques: - Programmed I/O - Direct Memory Access DMA - Interrupt I/O	-	
28	14/4/2024	Central Processing Unit (CPU) - RISC Instructions - CISC Instructions	-	
29	21/4/2024	Parallel Processing: - SISD - SIMD - MISD - MIMD	-	
30	28/4/2024	Pipelining, Instruction Pipelining.	-	
31	05/5/2024	Pentium		
32	12/6/2024	Exams		

Republic of Iraq
The Ministry of Higher Education
& Scientific Research
2024-2023



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تؤيد اللجنة العلمية مطابقة الخطة التدريسية لمفردات منهج المادة الدراسية

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Instructor Signature (Lab.)

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Instructor Signature (Theoretical)

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1st Scientific Committee Member

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2nd Scientific Committee Member

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3rd Scientific Committee Member

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Head of Scientific Committee

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Dean