Course Description Form

1. Course Name:
Computer Architecture
2. Course Code:
3. Semester / Year: Year (3rd year)
2024–2025
4. Description Preparation Date: 28-9-2024
2024
5. Available Attendance Forms:
Google form
6. Number of Credit Hours (Total) / Number of Units (Total):
2Units
7. Course administrator's name (mention all, if more than one name)
• Name: Dalia Adil Younus • Email: dalia.adil@uobasrah.edu.iq
8. Course Objectives

Course Objectives	• The fundamentals of computer architecture • Instruction Set Architecture (ISA) • Memory Hierarchy • Processor Organization • Pipelining

9. Teaching and Learning Strategies

Strategy	• PowerPoint • Assignments • Discussion • Quizzes • Exam

10.Course Structure

Week	*Hours*	*Required Learning Outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
1-3	*6*	• General definition, • Purpose of Digital Arithmetic and Introduction to computer architecture, CPU organization and parts	Introduction & Overview		• PowerPoint • Assignments • Discussion • Quizzes
4-9	*12*	• Addition and Subtraction Algorithms • Multiplication Algorithms • Booth Multiplication Algorithms • Division Algorithm	Algorithm and design of the common fixed points arithmetic operations		
10	*2*		***Exam***		
11-14	*8*	• Design of Shifter • General Purpose Register • Arithmetic logic unit	Execution Unit		
15-20	*12*	• Secondary memory • Cache memory • Virtual memory • Main memory	Memory Hierarchy		
21	*2*		***Exam***		
22-25	*8*	• Synchronous Pipeline • Nonlinear Pipeline • Pipeline Performance measures	Asynchronous Pipeline		
26-30	*10*	• Synchronous Pipeline • Nonlinear Pipeline • Pipeline Performa measures	Asynchronous Pipeline		

11.Course Evaluation

30% Exams
20% (Assignments, Quizzes, and Discussions)
50 Final Exams

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Fundamentals of Computer Organization and Architecture, 7th (W.Stallings), 2005 Computer System Architecture 3rd ed. (Morris Mano), 1992
Main references (sources)	Essentials of Computer Architecture, 2nd ed. (Douglas Comer), CRC press, 2017
Recommended books and references (scientific journals, reports…)	Essentials of Computer Architecture, 2nd ed. (Douglas Comer), CRC press, 2017