MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Architecture**			**Module Delivery**	
Module Type	**Core**			☒**Theory** ☒**Lecture** ☐ **Lab** ☒ **Tutorial** ☐**Practical** ☒**Seminar**	
Module Code	**COM-223**				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	2		**Semester of Delivery**	4	
Administering Department	com		**College**	cos	
Module Leader	Khalid Mohammed Saffer		**e-mail**	dr.khaledmoh@uodiyala.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	20/08/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**Logic Design** **COM-123**	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	In a Computer Architecture module, the objectives typically revolve around understanding the structure, operation, and design of computer systems. Here are some common objectives you might encounter: 1. Understanding Fundamental Concepts. 2. Exploring Processor Design. 3. Memory Hierarchy and Management. 4. Understanding Data Paths and Control. 5. Performance Analysis. 6. Exploring Parallelism. 7. Input/Output Systems. 8. Pipelining and Hazards. 9. Exploring Emerging Trends. 10. Practical Application.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Learning outcomes for a Computer Architecture module define what students should be able to do upon successful completion of the course. Here are some typical learning outcomes: 1. Understand and Describe Core Concepts. 2. Analyze and Design Processor Architectures. 3. Evaluate and Optimize System Performance. 4. Understand Memory Organization and Hierarchy. 5. Demonstrate Knowledge of Parallelism. 6. Implement and Simulate Basic Computer Systems. 7. Identify and Address Pipelining Issues. 8. Understand Input/Output Mechanisms. 9. Apply Knowledge to Emerging Technologies. 10. Collaborate and Communicate Effectively.
Indicative Contents المحتويات الإرشادية	Introduction to computer architecture, basic organization of computer, basic operational concept, bus structures, requirements of I/O system, I/O interfacing techniques, memory system organization, 8085 Microprocessor, Intel core family.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• lecture • Tutorial • Conducting discussion panels within the lecture • Giving weekly homework • Asking questions during the lecture

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	10% (10)	2,6 and 9,11	LO #2, #6 and #9, #11
	Assignments	2	10% (10)	3,5 and 10,12	LO #3, #5 and #10, #12
	Home Works	1	10% (10)	2,5 and 8,11	LO #2, #5 and #8, #11
	Report	1	10% (10)	13	LO #13
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #8
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to computer architecture
Week 2	Basic organization of computer
Week 3	Basic operational concept

Week 4	Bus structures
Week 5	Requirements of I/O system
Week 6	I/O interfacing techniques
Week 7	Memory system organization
Week 8	Midterm exam
Week 9	Memory hierarchy
Week 10	Memory structure and its requirement
Week 11	Associative memory
Week 12	Cache memory
Week 13	8085 Microprocessor
Week 14	Intel core family
Week 15	Intel core family

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Weeks 1 and 2	
Weeks 3 and 4	
Weeks 5,6 and 7	
Weeks 8 and 9	
Weeks 10,11 and 12	
Weeks 13 and 14	
Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	Mano, M. Morris, Computer System Architecture, 3rd Edition, Prentice-Hall, Inc., 1993.	
Recommended Texts	- Mostafa Abd-El-Barr, Hesham El-Rewini, "Fundamentals of Computer Organization and Architecture", A John Wiley & Sons, Inc Publication, 2005. - M. Morris Mano, Computer Engineering Hardware Design, 1st Edition, Prentice-Hall, Inc., 1988.	
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.