



MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية



Module Information			
معلومات المادة الدراسية			
Module Title	Microprocessor		Module Delivery
Module Type	Basic		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☐ Seminar
Module Code	Cys2113		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UGII	Semester of Delivery	
Administering Department	Cybersecurity Department	College	College of Computer Science & Information Technology
Module Leader	Zainab Raheem Oleiwi	e-mail	zainab@uowa.edu.iq
Module Leader's Acad. Title	Asst. Lecturer	Module Leader's Qualification	Msc
Module Tutor	Zainab Raheem Oleiwi	e-mail	zainab@uowa.edu.iq
Peer Reviewer Name	Dr. Ali Kareem	e-mail	alialmujab@uowa.edu.iq
Scientific Committee Approval Date	21/9/2026	Version Number	V1

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CSIT1104	Semester	1
Co-requisites module	None	Semester	

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Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	<p>The purpose of the course is to teach and understand the main components and working principles of the 8086 processor. Understanding of basic computer architecture. Understanding memory organization and interaction with memory . Handling I/O units. The course analyzes the several components of a computing system: from the microprocessor internal architecture, up to system bus for peripheral devices management. The course also covers programming at assembly level.</p>
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>The course has following specific objectives:</p> <ol style="list-style-type: none"> 1) Teaching the student about the microprocessor and its components and how to implement the instructions. 2) Learn assembly language 3) Knowing the methods and stages of converting an assembly language program into symbols. 4) Teaching the student, the principle of memory system and how it was divided the data into segments and how to link them. 5) To explain the principle of data flow.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <ul style="list-style-type: none"> ✓ Identifying the parts and components of the processor, the most important main units in the processor, identifying the memory, the most important signals that deal with it, and methods of accessing data inside the memory and the processor. ✓ A compiler design that uses specific algorithms in which data is entered in the manner of rules and laws are applied to it to know the results and to know the errors resulting in implementation and classify them according to their type and treat them

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	<p>The learning and teaching strategies for studying the microprocessor subject in an IT department involve a balanced approach of theoretical understanding and practical application. Lectures, interactive discussions, provide the necessary theoretical foundation. Practical exercises, group work, enable hands-on experience with microprocessor 8086. Giving lectures, carrying out assignments and practical issues inside the laboratories, conducting theoretical exams, discussions and scientific dialogues, and asking questions. These strategies ensure a comprehensive understanding of microprocessor and their relevance in the IT field.</p>
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Student Workload (SWL)			
الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10)	4,6,7,8,9,10	CLO1, CLO2, CLO3, CLO4
	Homework assignment	1	5% (5)	2,4,6,8,10	CLO2, CLO3, CLO4
	Report	2	10% (10)	5,10	CLO1, CLO3, CLO4, CLO5
	Lab	15	15%(15)	All	CLO1, CLO2, CLO3, CLO4, CLO5
Summative assessment	Midterm Exam	2hr	10% (10)	7	CLO1, CLO2, CLO3, CLO4
	Final Exam	3hr	50% (50)	16	CLO1, CLO2, CLO3, CLO4, CLO5
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Introduction to microprocessor 8086
Week 2	Microprocessor 8086 internal Architecture
Week 3	Execution Unit of Microprocessor
Week 4	Bus Interface Unit of Microprocessor
Week 5	Instruction Queue and Addressing Mode
Week 6	Instruction Format of Microprocessor
Week 7	Pins Diagram of Microprocessor
Week 8	Timing Diagram of Microprocessor
Week 9	Interrupt
Week 10	CPU Memory Configuration
Week 11	Hardware Memory Organization
Week 12	Stack and Memory Map
Week 13	Preparation for Final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Introduction To the Emulator 8086
Week 2	Variable and Memory in 8086 Assembler
Week 3	Array in 8086 Assembly
Week 4	Constants in 8086 Assembly
Week 5	Effective address and exchange in 8086 assembly
Week 6	Data Transfer Instruction
Week 7	Arithmetic Instruction
Week 8	Logical Instruction
Week 9	String Instruction
Week 10	Flag Control Instruction
Week 11	Rotate and Shift instruction
Week 12	Conditional and Unconditional Instruction (JUMP)
Week 13	Implemented a code for preparing to the final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	<ul style="list-style-type: none"> The 80x86 Family, Design, Programming and Interfacing, 3rd edition, Prentice Hall, 2002. 	No
Recommended Texts	<ul style="list-style-type: none"> The Intel Microprocessors, Architecture, Programming and Interfacing, Barry B. Brey, Prentice Hall, 1994. 	No

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.				