MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Microprocessor**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	**UOMU024052**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	UGIII		**Semester of Delivery**	5	
Administering Department	MIET		**College**	EETC	
Module Leader			**e-mail**	Mayssalreem92@mtu.edu.iq	
Module Leader's Acad. Title	Asst. lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor			**e-mail**		
Peer Reviewer Name	M.sc Ali karam obiad		**e-mail**	Dr_ahmed.r@mtu.edu.iq	
Scientific Committee Approval Date	8/11/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Digital electronics	**Semester**	UGII-S4
Co-requisites module	none	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1- The student knows the definition of Microprocessor 8085 . 2- How to engage colleagues and stakeholders in managing information, knowledge and communication systems. 3. Design and implementation of 8085 microprocessors. 4- Principles, methods, tools and techniques for keeping information, knowledge and communication secure and how to establish appropriate security levels and approaches. 5- How to evaluate current information, knowledge and communication systems and their capability and capacity to meet future needs. 6- Information, knowledge and communication technologies, their features and benefits for your needs. 7- Suppliers of information, knowledge and 8085MP and their capabilities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon completion of the course, students should be able to: 1- Understand the difference between microprocessor and microcontroller 2- Understand application of microprocessor in medical devices 3- Know characteristics of 8085 microprocessor 4- Know the architecture of 8085 microprocessor 5- Know the pins of 8085 microprocessor IC 6- Know the op-code of instructions 7- Know how to transfer data between memory and processor programmatically 8- Know how to build program to execute any arithmetic operation 9- Know how to build program to execute any logical operation 10- Know how to build program by using branching instruction for multitask 11- Know how to calculate time delay of any program code 12- Know how to dram time diagram of any instruction 13- Know the types of memories
Indicative Contents المحتويات الإرشادية	1. Microprocessor , microcontroller (6hrs) 2. Microprocessor architecture, registers, accumulator, flag (8hrs) 3. Carry, axillary carry, parity(4 hrs) 4. Stack pointer, decoder, arithmetic/logic unit(6hrs) 5. Interrupt, serial I/O, address buffer, bus organization (6hrs) 6. Direct memory access, hold acknowledge (4 hrs) 7. Instructions, data transfer instructions (8hrs) 8. Arithmetic, logical, branching, control instructions (15hrs) 9. Time diagram, time delay, opcode (6hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Daily assessment - weekly assessment - quarterly assessment - objective questions - general questions - practical tests.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	4	20% (10)	3, 6, 8, 11	LO # 1-2 ,4-5, 6-7, 8-10
	assessment	2	10% (10)	9, 13	LO # 8 and 11-12
	Projects / Lab.	6	10% (10)	7 , 12	LO # 1-6 and 7-11
	Report	NA			
Summative assessment	**Midterm Exam**	2 hr.	10% (10)	7	LO # 1-7
	Final Exam	4hr.	50% (50)	14	All
Total assessment			100% (100)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to microprocessor and microcomputer
Week 2	MP architecture
Week 3	MP IC pins
Week 4	bus signal
Week 5	Introduction to Instruction set MP and addressing mode

Week 6	Data transfer instructions
Week 7	Mid-term Exam +
Week 8	Arithmetic instructions
Week 9	Logical instructions Branching instructions
Week 10	Review instructions and Tutorial
Week 11	Op-code and machine cycle
Week 12	Timing diagram of instructions
Week 13	Time delay of code
Week 14	Types and architecture for memory
Week 15	Preparatory week before the final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: introduction to 8085 simulator
Week 2	Lab 2: move data
Week 3	Lab 3: ADD two data
Week 4	Lab 4: SUB two data
Week 5	Lab 5: multiplication of two 8-bit data
Week 6	Lab 6: division of two 8-bit data
Week 7	Lab 7: OR , AND two data
Week 8	Lab 8: largest number
Week 9	Lab 9: smallest number
Week 10	Lab 10: copy memory locations array
Week 11	Lab 11: count blank memory locations
Week 12	Lab 12: exchange two memory locations array
Week 13	Lab 13: find first and second complement
Week 14	Lab 14: rotate 8-bit data

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Recommended Texts	Microprocessor Architecture, Programming and Applications with the 8085 (6th Edition)	NO
Websites	https://www.mediafire.com/file/xnu0xhfknbp9bml/sim8085_win_7.rar/file	

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.