	Ministry of Higher Education and Scientific Research - Iraq Al-Mustaqbal University College of Sciences Department of Cyber Security	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Microprocessors			**Module Delivery**	
Module Type	BASIC			**Theory** **Lecture** **Lab** **Tutorial** **Practical** **Seminar**	
Module Code	UOMU033042				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	4	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Muntather Saheb Khalaf		**e-mail**	muntather.saheb.khalaf@uomus.edu.iq	
Module Leader's Acad. Title	Asst. Lecture		**Module Leader's Qualification**	MSC	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**		

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	COLD123	**Semester**	1
Co-requisites module	COAR311	**Semester**	5
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	3. Students acquire skills in dealing with the internal computer system infrastructure to provide a solid foundation in the basics of microprocessors and their applications 4. Inform students about the historical development of processors 5. Understand the microprocessor infrastructure 6. Knowing the processor command sets 7. Connecting input and output devices to the processor 8. Show students the types of microprocessors 9. Introduce students to the basics of assembly language 10. Create new products using assembly language programming and solve real-time problems.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learning how to implement instructions using Microprocessor registers. 2. To provide a solid foundation on the fundamentals of microprocessors and applications.		
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. ➢ Introduction to Microprocessor and Microcomputer system. • Microprocessor Architecture and Register Set. • System Buses • Memory types and physical addressing. • I/O devices ➢ Instruction Set and Format ➢ Addressing Modes ➢ Introduction to Assembly Programming Language. • Arithmetic and logical Instructions (Shift and Rotate). • Program Control (interrupt and subroutine call).		

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.8
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**	1	10% (10)	5, 10	LO #1 and 2
	Assignments	1	5% (5)	2, 12	LO #1 and 2
	Projects / Lab.		20%(20)	7	LO #1 and 2
	Report	1	5%(5)	13	LO #1 and 2
Summative assessment	**Midterm Exam**	2 hr	20% (20)	7	LO #1 and 2
	Final Exam	3hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to microprocessor
Week 2	Introduction to Microcomputer system
Week 3	Microprocessor Architecture
Week 4	Register Set
Week 5	System Buses
Week 6	Memory types and physical addressing
Week 7	I/O devices
Week 8	Instruction Set and Format
Week 9	Addressing mode(real mode, protected mode)
Week 10	Introduction to Assembly Language Programming
Week 11	Arithmetic and logical Instructions (Shift and Rotate)
Week 12	Appling Examples
Week 13	Program Control (interrupt and subroutine call)
Week 14	Appling Examples
Week 15	Implement Full Program
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر(ليس مرتبط بمختبر)

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Abel P., "IBM PC Assembly Language and Programming", 4th Edition, Prentice Hall, 1998. 2. M. M. Mano, "Computer system architecture" third edition, prentice Hall, 1993. 3. Walter A. Triebel, "The 80386, 80486, and Pentium® Processors Hardware, Software, and Interfacing", 1998. 4. David A. Patterson and John L. Hennessy, "Computer	Yes

	Organization and Design",1999 5. Abel P., "IBM PC Assembly Language and Programming", 4th Edition, Prentice Hall, 1998. 6. M. M. Mano, "computer system architecture" third edition, prentice Hall, 1993. 7. Walter A. Triebel, "The 80386, 80486, and Pentium® Processors Hardware, Software, and Interfacing", 1998. 8. David A. Patterson and John L. Hennessy, "Computer Organization and Design",1998.	
Recommended Texts		
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required