Syrian Arab Republic	:
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Ministry of Higher Education



الجمهورية العربية السورية

وزارة التعليم العالمي

الجامعة الافتراضية السورية

Syrian Virtual University

Course Description: Microprocessors

1- Basic Information:

Course Name	Microprocessors
Course ID	MP
Contact Hours (Registered Sessions)	18.5 h
Contact Hours (Synchronized Sessions)	19.5 h
Mid Term Exam	-
Exam	75 min
Registered Sessions Work Load	19
Synchronized Session Work Load	20
Credit Hours	4

2- Pre-Requisites:

Course	ID
Computer architecture	

3- Course General Objectives:

To introduce the microprocessor architecture and how to write program in assembly 8086/8088 and how to design systems based on this microprocessors



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4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes			
ILO1	Understanding microprocessor architecture and microprocessor system			
ILO2	Knowing the architecture of different processors families and their performance			
ILO3	Understanding the 8086/8088 architecture in details			
ILO4	Writing programs in the assembly language of 8086/8088 microprocessor			
ILO5	Designing system based on the processor 8086/8088			
ILO6	Understanding interrupts' concept and their types in the processor 8086/8088			

5- Course Syllabus (20 hours of total synchronized sessions;19 hours of total Recorded Sessions)

• RS: Recorded Sessions; SS: Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Туре	Additional Notes
ILO1	Explain the general architecture of microprocessor (MP) and its components, the difference between HW and SW, how does an MP work. The basic components of a PC motherboard	2	3	Exercises Assignments	
ILO2	Explain the difference between RISC and SISC architecture, principle of pipelining and Superscalar MP, the difference between Harvard and von Neumann MP. Microcontrollers and	1.5	1.5	Exercises Assignments	

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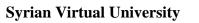
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	digital signal				
	processors.				
	Understanding the				
	8086/8088 architecture,				
	memory organization				
	and segment				
ILO3	addressing. Space of	3	4.5	Exercises	
IL05	the memory and the	5	4.5	Assignments	
	ports. Addressing				
	types for memory and				
	I/O.				
	Explain the structure of				
	a program in the				
	assembly language			Exercises Assignments	
ILO4	8086/8088 and its	6	4.5		
	instructions, with			rissignments	
	examples				
	Explain storage				
	elements on PC's,				
	address decoders, how				
	to interface program		3	Exercises	
ILO5	memory and	3		Assignments	
	Read/write memory			6	
	with the processor				
	8086/8088				
	Explain the structure of				
	I/O ports and how to				
	interface them with the				
	processor 8086/8088.				
ILO6	Explain interrupts'	3	3	Exercises	
	concept and their types	C	U	Assignments	
	and how to use them in				
	the processor				
	8086/8088				



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6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams		Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Wo	rk		

ILO				Assessment Type					
Code	ILO	Intended Results		PW	Ex	PF2F	Rpt		
ILO1	Understanding microprocessor architecture and microprocessor system	Capability to understand the architecture of any processor, and of a processor system: its tasks and components	N		N				
ILO2	Knowing the architecture of different processors families and their performance	Capability of distinguishing different processors' families, their performance and how to choose the best MP for an application	N		N				
ILO3	Understanding the 8086/8088 architecture in details	Capability of understanding the general architecture of the processor family x86, and how to use different addressing modes	N		N				
ILO4	Writing programs in the assembly language of 8086/8088 microprocessor	Capability to write mid-complex programs in the assembly language	\checkmark		N				

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		8086/8088			
ILO5	Designing system based on the processor 8086/8088	Capability of comparing different storage media and , how to link program memory and Read/write memory with the processor 8086/8088	N	N	
ILO6	Understanding interrupts' concept and their types in the processor 8086/8088	Capability of using interrupts in the processor 8086/8088			

7-Practice Tools:

Tool Name	Description
emu8086	Program used to emulate the work of 8088/8086 MP

8-Main References

• المعالجات الصغرية، منشورات جامعة دمشق-كلية المعلوماتية

The Intel Microprocessors, by Barry B. Brey, Prentice Hall •

9-Additional References

Art of Assembly Language **Programming** •