Syrian Arab Republic		الجمهورية العربية السورية
Ministry of Higher Education	**SVU** الجامعــة الافتراضيــة السوريــة SYRIAN VIRTUAL UNIVERSITY	وزارة التعليـم العالـــــي
Syrian Virtual University		الجامعة الافتراضية السورية

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	Type	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	

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

6- Assessment Criteria (Related to ILOs)

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

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	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	√	☐	√		☐
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	√	☐	√		☐
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	√	☐	√		☐
ILO4	Writing programs in the assembly language of 8086/8088 microprocessor	Capability to write mid-complex programs in the assembly language	√	☐	√		☐

		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	√	☐	√		☐
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***