



Philadelphia University

Faculty of Engineering - Department of Computer Engineering
First Semester 2020/2021

Course Details:

Title:	Microprocessors (630313)
Prerequisite:	Logic Circuits (630211)
Credit Hours:	3 credit hours (approximately 44 contact hours)
Textbook:	"Assembly Language for x86 Processors," Seventh Edition, Kip R. Irvine, Prentice Hall, 2014.
References:	1) The Intel microprocessors: 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, Pentium Pro processor, Pentium II, Pentium III, and Pentium 4, and Core2 with 64-bit extensions, Barry B. Brey, 8th ed., Pearson / Prentice Hall, 2009. 2) Introduction to Assembly language programming : Pentium and RISC processors / Sivarama P. Dandamudi.— 2nd ed., Springer, 2005.
Course Description:	This course covers the basic concepts of microprocessor based systems, and introduces the assembly language for Intel microprocessor.
Website:	http://www.philadelphia.edu.jo/academics/srushdan/
Instructor:	Eng. Sultan M. Al-Rushdan Email: srushdan@philadelphia.edu.jo Office: Engineering building, room: 6715, ext: 2149 Office hours: SUN, TUE, THU (09:00 – 10:00), MON, WED (12:45-14:00)

Course Outlines:

Week	Topic
1 (18/10 – 22/10)	Introduction to the microprocessor, Basic Concepts
2 (25/10 – 29/10)	x86 Microprocessor architecture
3 (1/11 – 5/11)	Assembly Language Fundamentals
4 (8/11 – 12/11)	Data Transfers, Addressing, and Arithmetic
5 (15/11 – 19/11)	Procedures
6 (22/11 – 26/11)	Conditional Processing
7 (29/11 – 3/12)	Integer Arithmetic
8 (6/12 – 10/12)	Advanced Procedures
9 (13/12 – 17/12)	Strings and Arrays
10 (20/12 – 24/12)	Structures and Macros
11 (27/12 – 31/12)	Floating-Point Processing and Instruction Encoding
12 (3/1 – 7/1)	16-Bit MS-DOS Programming
13 (10/1 – 14/1)	BIOS-Level Programming
14 (17/1 – 21/1)	High-Level Language Interface
15 (24/1 – 28/1)	Expert MS-DOS Programming
16 (31/1 – 4/2)	Review, and final exam

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, the student should:

1.	Have a clear understanding of the microprocessor terminology.	[a]
2.	Be able to use the assembly language to design and write programs that use different data types, x86 Instruction set and Data-Related Operators and Directives.	[a , b, e , k]
3.	Have knowledge of x86 Microprocessor architecture and 8086 Hardware specifications.	[a]
4.	Have knowledge and programming skills of different microprocessor mechanisms and techniques such as: x86 Memory Management: Addressing Modes, I/O interfacing, Stack Operations, BIOS and MS-DOS Interrupts and Defining and Using Procedures	[a , b, c , e , k]
5.	Be able to work effectively alone or as a member of a small group working on some programming tasks.	[d , g]

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to scheduled written exam, during the semester.

Quizzes and Assignments: (5) Quizzes and Assignments will be conducted during the semester.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

Mid Exam	30% (13-17/12/2020)
Quizzes and Assignments	20%
Final Exam	50% (31/1 - 4/2/2021)
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Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

Absent of final written exam without a medical or emergency excuse approved by the deanship will result in Zero mark recorded for final exam.