Hashemite University
College of Engineering
Department of Computer Engineering
Computer Design and Organization (3 Credit Hours/Dept. Compulsory)

Instructor		**Grading info**		**Class Info**	
Dr. Khalil Yousef		1st Exam	30%	Days	Sun/Mon/Tue/Wed/Thurs
Email:	khalil@hu.edu.jo	2nd Exam	30%	Time	11:30-12:30 PM
Office:	E-3039	Final	40%	Location	Eng. 2013
Office hours:	Only by appointment				

Course

Course Number:	110408240
Prerequisite:	
Textbook:	**Computer Organization and Architecture**, **8th** or 9th or 10th or 11th edition, William Stallings, 2016, Prentice Hall. http://williamstallings.com/ComputerOrganization/
Course Description:	This course is an introductory course on computer organization. It introduces the underlying concepts and principles of computer organization with emphasis computer components and interconnection, computer arithmetic, processer structure and function, instruction set, internal, and external memory.
Specific Outcomes (SO's) of Instruction (Course Learning Outcomes)	1. **Describe** a brief history of computer evolution and differentiate among different computer generations. ABET SO(1) 2. **Explain** the basic functions of a computer by identifying the interconnection among its components (CPU, Memory, Input/ Output devices), and evaluate the effect of different design decisions on the overall performance. ABET SO's (1, 2, 4) 3. **Discuss** integer and floating-point numbers representation and the algorithms used for the basic arithmetic operations on them. ABET SO(1) 4. **Explain** characteristics, functions, addressing modes and format of instruction set in computer system. ABET SO's (1, 2, 4) 5. Ability to **understand**, **analyze** and **write** programs written in assembly language. ABET SO's (1, 2, 4)
Important material	- Lecture notes - Text books - Internet resources

Major Topics Covered and Schedule in Weeks:

Topic	# Weeks	# Contact hours*
Introduction to computer organization	0.5	3
Computer Evolution and Performance	1	6
Computer Function and Interconnection	1.5	9
Computer Arithmetic	1	6
Instruction Sets: Characteristics and Functions	1	6
Instruction Sets: Addressing Modes and Formats	1	**6**
CPU Structure and Function	1	6
	7	42

Course Policy

- The course will follow selected subjects as listed on the course schedule.
- Students are responsible for reading extra material to enhance their knowledge in the concepts discussed during the course.
- Students are responsible for solving assignments and extra problems given in the lectures.
- Students are expected to attend and be on time. If a student misses more than 15% of classes, then he/she will automatically fail the class.

ABET Student Outcomes (SO) Addressed by the Course:

#	*Outcome Description*	*Contribution*
General Engineering Student Outcomes		
(1)	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. *(Previously SO's (a, e, k))*	***H***
(2)	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. *(Previously SO's (c, k))*	***M***
(3)	An ability to communicate effectively with a range of audiences. *(Previously SO (g))*	
(4)	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. *(Previously SO's (f, h, j))*	***M***
(5)	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. *(Previously SO (d))*	
(6)	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. *(Previously SO's (b, k))*	
(7)	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. *(Previously SO (i))*	

H=High, **M**= Medium, **L**=Low

Prepared By: Dr. Khalil Yosuef **Date: 8/6/2019**