CPIS-210 Syllabus

Catalog Description

CPIS-210 Computer Architecture and Organization
Credit: 3 (Theory: 3, Lab: 1, Practical: 1)
Prerequisite: CPCS-202
Classification: Department Required

The objective of this course is to study the internal architecture/components of the computer, how they are integrated together, and the way they are controlled. This course should be preceded by an introduction in Logic and Digital Design. Topics include basic scientific concepts of how data networks function, data transferring techniques starting from hardware levels to high levels of data transferring protocols over intra-networks, and the scientific theories on which the modern digital communication technology is based.

Class Schedule

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Lab/Tutorial 90 minutes 1 times/week

Textbook

Andrew S. Tanenbaum, Todd Austin, , "Structured Computer Organization", Prentice Hall; 6 edition (2013)

ISBN-13 9780132916523   **ISBN-10** 0132916525

Last Articulated

May 12, 2015

Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j
x	x							x	

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Define the main components of the Combinational Logic Circuits. (i)
2. Analyze and Design of a Simple ALU. (b)
3. Describe Registers. (b)
4. Design and Implement 4 X3 memory Using Simulink (Matlab). (a)
5. **Analyze a simple Microprocessor (b)**
6. List the major factors which affect the performance of a PC. (a)
7. Define 8088 microprocessor programming model. (a)
8. Identify the Addressing Modes and the Instruction Set. (a)
9. **Design Simple Assembly Code programs. (a)**
10. Apply Hamming Code for EDAC. (a)
11. Identify the different I/O Devices (Magnetic Disks, CDROMs,…etc). (b)
12. Define Loosely and Closely coupled Multiprocessors (a)
13. Define the Clusters. (a)
14. Analyze the Google cluster. (b)
15. **Analyze the performance of a PC with respect to the major factors which affect it. (a)**
16. **Comprehend the trend of modern computer architectures towards multiprocessors, and that parallelism is inherent in all hardware systems (a)**
17. **Define the Physical phenomena of the different I/O devices. (a)**

Coordinator(s)

Dr. Mahmoud Kamel, Associate Professor

CPIS-210 Syllabus

Grade Distribution

Week	Assessment	Grade %
2	Graded Lab Work 1	1
3	Homework Assignments 1	2
3	Graded Lab Work 2	1
4	Homework Assignments 2	2
4	Graded Lab Work 3	1
5	Graded Lab Work 5	1
6	Homework Assignments 3	2
6	Graded Lab Work 4	1
7	Graded Lab Work 8	1
8	Exam 1	15
8	Homework Assignments 4	1
8	Project (Individual) 1	10
8	Graded Lab Work 9	1
9	Graded Lab Work 7	1
10	Graded Lab Work 6	1
10	Homework Assignments 5	1
11	Graded Lab Work 10	1
11	Homework Assignments 6	1
12	Homework Assignments 7	1
13	Exam 2	15
13	Project (Individual) 2	10
16	Exam	30

Topics Coverage Durations

Topics	Weeks
Introduction to Computer Systems Organization	1
Combinational Logic Circuits	1
ALU	2
Sequential Logic Circuits	1
PC buses	2
I/O Devices	2
Microprocessors	1
Assembly Code Programming	2
Multiprocessors	2