



SYLLABUS

Course number and name: ENCS2380- Computer Organization and Microprocessor

Credits and contact hours: 3 credit hours.

Instructors: Dr. Abualsoud Hanani, **Office:** Masri222

Dr. Ayman Alhroub, **Office:** Masri

Textbooks:

- W. Stallings, Computer Organization and Architecture: Designing for Performance, 8th or 9th Edition.
- M. Mazidi, et. al 'ARM Assembly Language Programming & Architecture'

Other references:

- David A Patterson and John L. Hennessy , Computer organization and design ARM edition
- Computer Systems Architecture, M. M. Mano, Prentice Hall 1992, 2nd edition
- Fundamentals of Computer Organization and Architecture, Mostafa Abd-El-Barr & Hesham El-Rewini, 2005 by John Wiley & Sons, Inc.
- IBM PC Assembly Language & Programming, Peter Abel, Prentice Hall 5th edition

Course resources:

More resources including slides, lecture notes, past exams, link to recorded video lectures, and others are available on the course page at Moodle (itc.birzeit.edu)

Specific course information

- **BZU catalogue description:**
ENCS2380 | COMPUTER ORGANIZATION AND MICROPROCESSOR
Central Processing Unit. Assembly Language. Arithmetic Operations. Memory Organization. Hard Drive.
Using assembly language to control computer peripherals: input devices, screen, parallel port, serial port.
Interrupts in personal Computers.
- **Prerequisites:** Digital Systems (ENCS234 or ENCS2340)
- Core course for Computer Engineering

Specific goals for the course:

Introduce the students with the basic concept of computer organization and architecture covering topics in both the physical design of a computer (Organization) and the logical design of the computer (Architecture).
Introduces students to assembly language based on ARM architecture

(ABET) Relationship of course to Computer Engineering Program Student Outcomes:

- (a) Ability to apply mathematics, science and engineering principles.
- (c) Ability to design a system, component, or process to meet desired needs.
- (e) Ability to identify, formulate and solve engineering problems.

Brief list of topics to be covered (Tentative Scheduling)

Week	Topics	Book Chapter(s) – 9 th Edition TB
Week 1	<ul style="list-style-type: none">• Introduction• Basic Concepts in Computer Evolution and History	<ul style="list-style-type: none">• Chapters 1 Stalling’s Textbook• Chapters 1 Patterson’s book
Week 2	Computer Performance Concepts	Lecture notes on the ITC
Week 2-3	Instruction Set Architecture: Characteristics and Functions	Chapters 10 Stalling’s Textbook
Week 5	Instruction Set Architecture: Addressing Modes and Formats	Chapters 11 Stalling’s Textbook
Week 6	CPU Organization	Chapter 3 (Stalling’s 9th edition)
Week 7	Computer Arithmetic	Chapters 9 Stalling’s Textbook
Midterm Exam		
Week 8	ARM Architecture and Assembly Language Programming	Chapter 2 (Mazidi)
Week 9	ARM Arithmetic and Logical Instructions	Chapter 3 (Mazidi)
Week 10	ARM Control instructions and Procedures	Chapter 4 (Mazidi)
Week 11	The Memory Hierarchy: Locality and Performanc	Chapters 4 Stalling’s Textbook
Week 12	Cache Memory	Chapters 5 Stalling’s Textbook
Week 13	Internal Memory	Chapters 6 Stalling’s Textbook
Week 14	Input/output	Chapters 8 Stalling’s Textbook
Week 15		
Week 16	Students’ Projects Discussion and Review	

Tentative Assessment Plan

Assessment Tool	Weight
Quizzes	15
Project/s	15
Midterm Exam	30
Final Exam	40
Total	100

General Policies:

- No late submissions will be accepted.
- Lectures attendance is mandatory by the university regulations. You have to attend **All** lectures and course activities.
- All students are expected to comply with University rules and regulations on academic Integrity and honesty.
- Students are expected to abide by Birzeit University honor code on all aspects of their academic work. Please review that on Ritaj.

Good Luck!