East West University
Department of EEE

EEE 302: Microprocessors and Interfacing
Semester: Summer 2022
Course Outline
Section-1

COURSE CODE: EEE302
COURSE TITLE: MICROPROCESSORS AND INTERFACING
CREDITS: 3+1 (4)
PRE-REQUISITE: EEE205

Course Instructor: Mr. Fakir Mashuque Alamgir,
Assistant Professor, Department of EEE, East West University
Office: Floor 5, Room No- 540
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Class Hour: ST 01:30-3:00 **Room:** 221
Lab Hour: R 8:00-10:00 **Room:** 634/546

Course outcomes:

CO	PO	TAXONOMY DOMAIN/LEVEL	Assessment tools
Explain the architecture, instruction set, memory and input/output interface for 8086/8088 microprocessor.	PO1	Cognitive/Understand	Midterm exams, Final exam
Relate microprocessor working principle, instruction set execution and external peripheral connection for specific application.	PO1	Cognitive/Apply	Midterm exams, Final exam
Program in assembly language for executing microprocessor instruction set.	PO5	Psychomotor/Precision	Lab performance, Lab test,
Investigate microprocessor based systems by designing and conducting experiments.	PO4	Cognitive/Evaluate	Lab performance, Lab report and/or viva.
Design a microprocessor based system that meets specified requirements.	PO3	Cognitive/Create	Project and/or assignment.

Course Rationale:

To make the students understand Microprocessors in order to equip them with the necessary tools for the analysis of Electronic equipment in the field of Microprocessors & Embedded systems to be used in industries, research fields, and commercial field applications.

Course Objectives

The course presents real-time interfacing of microcontrollers, microprocessors, and microcomputers to the external world, including the interfacing of I/O devices data acquisition with microprocessors, data communications, transmission, and logging with embedded computers.

Course Contents:

Topics to be covered throughout the semester:

Topics	Contents	Lectures	Topic reference
1.	Evolution of microprocessors, Review of computer number systems, codes	1	Chapter 1 of Textbook
2.	Introduction to microprocessor-based systems. Intel 8086 basics (architecture, components)	3	Chapter 2 of textbook, Chapter 1 Ref. Book - 1(1.3.1-1.3.4.f)
3.	Instruction set and machine codes of Intel 8086	2	Chapter 3, 4 of textbook
4.	Addressing modes of Intel 8086	2	Chapter 3 (3.3) of Rafiquzzaman and Chapter 2, 3,4 of textbook
	MIDTERM I ON JULY 3, 2022		
	(Answer Scripts will be returned by July 15, 2022 so that a student can decide if she or he wants to drop with a minimum financial penalty)		
5.	Microcomputer System Software and Detailed Programming concepts	1	Chapter 4, 5 and 6 of textbook
6.	Intel 8086 Bus timing and memory concepts	1	Chapter 7 of textbook
7.	Intel 8086 System design concepts	2	Chapter 7 of textbook
8.	Introduction to Intel 8086 interrupts	1	Chapter 8 of textbook
	MIDTERM II ON AUGUST 7, 2022		
	(Answer Scripts will be returned by August 17, 2022 so that a student can decide if she or he wants to withdraw)		
9.	Intel 8086 interrupts and its applications	1	Chapter 8 of textbook
10.	Programmable Interrupt Controller: Intel 8259	2	Chapter 8 of textbook
11.	Minimum Mode and Maximum Mode	2	Chapter 8 of textbook
12.	Digital Interfacing using Intel 8255	1	Chapter 9 of textbook
	FINAL ON SEPTEMBER 11, 2022.		

Text Book:

- 🕮 The Intel Microprocessors 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, and Pentium Pro Processor Architecture, Programming, and Inter- facing *by Barry B. Brey (8th Edition).*

Reference Book:

- 🕮 Microprocessors and Interfacing *by A.P.Godse, D.A. Godse. (1st Edition)*

Total Marks Distribution:

Class Tests	**:**	**10%**
Lab Performance	**:**	**10%**
Lab Exam	**:**	**10%**
Open-ended lab	**:**	**5%**
Midterm-I	**:**	**15%**
Midterm-II	**:**	**20%**
Final	**:**	**20%**
Project + Presentation	**:**	**10%**

Special Instructions:

- No make-up exams of the class tests, midterm exams will be allowed. Midterm makeup will be allowed in case of any medical/unavoidable reason of self and/or family.
- Lab reports are to be submitted within the announced deadline. No late submission will be granted**.**
- **Academic Honesty:** Plagiarism will not be tolerated. The penalty for any act of academic dishonesty (cheating on an exam, turning in something not entirely your own) is a lower final grade for the course, up to and possibly including an F.
- **Projects:** A project is required from students using the programming language to submit a microcontroller-based project during the last week of the semester. The project must have a social impact in our country.
- **Presentations**: Students are required to make presentations for their projects one week before the end of the semester with the submission of the report.
- **Regarding missing term exams**: If you miss a term exam due to sickness or any other family issues, inform me by email as early as possible on the day of the exam.