Computer Engineering Department



COURSE TITLE: Microprocessors and Interfacing
INSTRUCTOR: Engr.Sharoon Saleem
COURSE CODE: CP-208
SEMESTER: 4th
ENTRY:
Credit Hours: 3(Theory) + 1

Check List

a) Course Plan

– Course Code / Title		– Course Learning Outcomes	
– Course Aim and Objectives		– Mapping of CLO's to PLO's	
– Reference Books/Course Web Page/Tools Info		– Mapping of Assessments to CLO's (Quizzes, Assignments, Mid and Final Exam)	
– Course Contents		– Weekly Schedule	

b) Course Log File ☐

c) Attendance Record ☐

d) Assessment Records ☐

– Quizzes		– Mid Exam	
– Marked Samples of Quizzes		– Marked Samples of Mid Exam	
– Assignments		– Final Exam	
– Marked Samples of Assignments		– Marked Samples of Final Exam	

e) Course Result ☐

a) Course Plan

Subject: **Microprocessors and Interfacing (CP-208)**

Instructor: **Engr.Sharoon Saleem**

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Office Hours: Monday (11:00 AM → 12:00 PM) Wednesday (11:00 AM → 12:00 PM)
Faculty Office, First Floor, CPED.

Teaching Assistant: **Anam Manzoor**

Course Description:

This course is used to introduce concepts of microprocessor architecture, programing and the interfacing techniques. The purpose of the course is to present theoretical and practical aspects of microprocessor architecture, assembly level programing and interfacing a microprocessor to a variety of peripheral chips.

Course Aims and Objectives:

1. To acquaint the students with the architecture, low level programming (Assembly Language) and applications of microprocessor-based systems.
2. To introduce concepts of interfacing memory and I/O devices to the microprocessor to design a microprocessor based system

Reference Text Books:

1. Douglas V. Hall, "Microprocessor and Interfacing", Tata McGraw-Hillor Latest Edition.
2. Charles Gilmore, "Microprocessors: Principles and Application", McGraw-Hill, Latest Edition.
3. Mazidi, "Programming, Interfacing and Design using 8086", or Latest Edition.

Course Contents:

Introduction to microprocessors, microcontrollers and assembly language programming (Instruction set of 8-bit and 16-bit microprocessor), programming exercises on various modes of operation and interfacing with EPROM and RAM, IOs, Parallel port interfacing, Keyboard and display controller, UART operation, Interrupts Structure, Event driven applications, interfacing A/D and D/A converters.

Course Learning Outcomes (CLO's):

Upon successful completion of the course the student will be able to:

S. No.	Course Learning Outcome (CLO's)	Bloom's Learning Level
1.	Explain internal architecture of the microprocessor device.	C2
2.	Develop Assembly and C Language Programs for 8086 microprocessors.	C3
3.	Interface different I/O components to microprocessor using different I/O techniques	C3
4	Design a microprocessor based system to meet set of specifications.	C5

Learning Levels (LL): Knowledge (C1), Comprehension (C2), Application (C3), Analysis (C4), Synthesis (C5), Evaluation (C6)

Mapping of CLO's to PLO's with %:

Course	CLOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12	Learning Levels
CP-208 Microprocessor and Interfacing	CLO 1	50												
	CLO 2	30												
	CLO 3	20												
	CLO 4			100										

Mapping of Quizzes to CLO's:

Quiz No.	CLO:1	CLO:2	CLO:3
01	**100%**		
02		**100%**	
03			**50%**
04			**50%**

Mapping of Assignments to CLO's:

Assignment No.	CLO:1	CLO:2	CLO:3
01	**100%**		
02		**100%**	
03			**50%**
04			**50%**

Mapping of Mid Exam to CLO's:

Question No.	CLO:1	CLO:2	CLO:3
01	**100%**		
02		**100%**	
03			
04			

Mapping of Final Exam to CLO's:

Question No.	CLO:1	CLO:2	CLO:3
01	100%		
02		100%	
03			50%
04			50%

Weekly Schedule:

This course will have sixteen Lectures of 120 minute each.

Week	Topic Covered	CLO No.	Assessment (if Any)	Learning Domain (Cognitive, Affective, Psychomotor)	Level of learning (1-6)
1	Introduction to microprocessors based computer system	1		**Cognitive**	**1**
2	The microprocessor and its architecture	1		**Cognitive**	**2**
3	Addressing modes	1	Assignment No.1	**Cognitive**	**2**
4	Data movement instructions I	1,2	Quiz No.1	**Cognitive**	**3**
5	Data movement instructions II	1,2		**Cognitive**	**3**
6	Arithmetic and logic instructions	1,2		**Cognitive**	**3**
7	Program control instructions	1,2	Assignment No.2	**Cognitive**	**3**
8	Assembly Language design problems	1,2	Quiz No2	**Cognitive**	**3**
9	8086/8088 Hardware Specifications	1		**Cognitive**	**2**
10	8086/8088 Memory interfacing	1,3		**Cognitive**	**2**
11	Intro to Microcontrollers Basic I/O interfacing, Switches, LED's, Keyboard and display controller , Stepper Motor	3	Assignment No.3	**Cognitive**	**5**

12	Interfacing PPI (8055), Timer (8254) with 8086/8088	3	Quiz No3	Cognitive	**5**
13	Interfacing UART (16550) with 8086/8088	3		**Cognitive**	**5**
14	Interfacing ADC (0804) and DAC (0803) with 8086/8088 and interrupt based systems	3		**Cognitive**	**5**
15	Interfacing Programmable Interrupt Controller (8259) with 8086/8088, Event driven applications	3	Assignment No.4	**Cognitive**	**5**
16	Direct Memory Access (8237) and its interfacing with 8086/8088.	3	Quiz No.4	**Cognitive**	**5**

b) Course Log File

Lecture /Section / Date	Topic Covered	Quiz / Assignment / other Assessment
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
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