

MICROPROCESSOR & INTERFACING

3 Credit Hour Course

Course Teacher : Upal Mahbub

Room No : EME 604, ECE 531

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Text & References:

1. **Digital Computer Electronics.** By - Albert P. Malvino & Jerald A. Brown, 3rd Edition. McGraw Hill.
2. **Assembly Language Programming and Organization of IBM PC.** By – Ytha Yu & Charles Marut, McGraw Hill.
3. **Microprocessors & Interfacing- Programming and hardware.** By – Douglas V. Hall. 2nd Edition. McGraw Hill.
4. **Microprocessors & Microcomputer Based System Design.** By – Mohammed Rafiquzzaman. CRC Press.
5. **The Intel Microprocessors- Architecture, Programming & Interfacing.** By – Barry B. Brey. 6th Edition. Prentice Hall.
6. **Handouts and Internet.**

Course Outcome:

This is a basic course to understand how any programmable computing device works. Microprocessor lies at the heart of any programmable computing device. So when a student completes this course s/he will understand the architecture and programming of a microprocessor (8086 family), how to interface this microprocessor with peripheral devices and how to program them. A basic introduction to the microcontroller will also be given. The ultimate outcome of this course will be to enable each student to design his/her own computer using customized instruction set and a simulation assignment will be given to realize this outcome.

Prerequisite:

Good knowledge on Digital Electronics is required. Also the basic of developing a computer algorithm and previous programming knowledge will be useful.

Course Outline:

Sl. No	Topic	Text No.	Approx. Classes
1	Introduction to microprocessors. Simple-As-Possible (SAP) Architecture	1	5
2	Intel 8086 microprocessor: addressing modes, instruction sets, assembly language programming	2	12
3	Intel 8086 microprocessor: architecture, system design and interrupt.	3,4	8
4	Interfacing: programmable peripheral interface.	5	3
5	Interfacing: programmable timer.	3	3
6	Interfacing: serial communication interface.	3	3
7	Interfacing: programmable interrupt controller.	3	3
8	Introduction to micro-controllers.	6	2

Grading Policy: 10% Attendance

20% Continuous Assessment (10% Class Test + 10% 4 bit Computer Design Assignment)

*Best 2 class tests will be counted from 3/4 class tests.

*Assignment is mandatory and individual submission.

*Bonus Marks will be given for outstanding performance.

70% Term Final