

Introduction to Microprocessors (COE 381)

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Why Study Microprocessors

- The microprocessor is the brain of the computer system. Study of computer and any form of electronic engineering won't be complete without studying it.
- A complete computer architecture circles around the microprocessor only.
- Microprocessors are used in all kind of computers, servers, smartphones and electronic devices.
- Microprocessors are designed by engineers. (However this is usually a large team of experienced ones)
- You will learn assembly language.

What will we study?

- Microprocessor basics.
 - Brief History -What a microprocessor is - How it works generally
- A review of binary and hexadecimal arithmetic
- Interfacing the Microprocessor with memory
 - Memory basics
 - Address decoding Strategies
- Interfacing the Microprocessor with I/O
- Introduction to Assembly language Programming
- The 8086 family architecture
- Basic 'Microprocessor Parts' design
 - ALU Design
 - Register Design

Recommended References

TEXT BOOKS:

- The 8086 Microprocessor: Programming and Interfacing the PC
 - Kenneth J Ayala
- Assembly Language for x86 Processors
 - Kip R Irvine

REFERENCES

- Understanding 8085/8086 Microprocessor and Peripheral ICs Through Questions and Answers
 - S.K. Sen
- The 8088 and 8086 Microprocessors: Programming, Interfacing, Software, Hardware, and Applications (4th Edition)
 - Walter A. Triebel
- The Intel Microprocessors
 - Barry B. Brey

Grading

• First Exam	20%	(Mid November)
• Second Exam	20%	(Early December)
• Assignments	20%	(Due date: Early December)
• Final Exam	40%	