



EE332-Digital System Laboratory (Required Course)

Code and Name: EE332 Digital System Laboratory

Credit Hours: 1 (Practical:2)

Textbook:

- Lab manual Given by University.

Other References:

- The 8088 and 8086 Microprocessor, Programming, Interfacing, Software, Hardware and Application, Walter A Triebel and Avtar Singh, Fourth Edition, Prentice Hall, 2013.
- Advanced Microprocessor 8086 DV Hall Mc Graw Hill, New York.

Course Description:

This course consists of introduction to 8086/8088 Microprocessor Programming, Instruction Set, Arithmetic and Logic Operation, Shift operations, branch instruction etc., Focused on program writing skills. Different programs using 8086 assembly language are implemented on 8086/88 microprocessor kit and DEBUG platforms. Interfacing with peripheral devices concepts are introduced.

Pre-requisites: EE331.

Co-requisites: None

Course Learning Outcomes:

With relation to ABET Student Outcomes (SOs: 1-7)

1. Understand the concept of microprocessor and its architecture, List the instruction set of 8086 processor. (1)
2. Recall the list of Debug and 8086/88 Kit commands. (2)
3. Lab Procedure. (6)
4. Write Programs using assembly language with different addressing modes. (1)

Topics to be covered:

- Introduction to 8086/8088 Microprocessor, Familiarization with Microprocessor Lab, Hands on DEBUG Commands.
- Hands on 8088 Kit Commands, Demonstration of the 8088 kit.
- 8086/88 Assembly Language program1: Addition of two multi byte numbers and store the result as the third number.
- 8086/88 Assembly Language program2: Subtracting two multi byte numbers and store the result as the third number.
- 8086/88 Assembly Language program3: Multiplying two multi byte numbers and store the result as the third number.
- 8086/88 Assembly Language program4: Dividing two multi byte numbers and store the result as the third number.
- 8086/88 Assembly Language program5: Generation of Fibonacci Series.
- 8086/88 Assembly Language program6: Find the factorial of a given 8 bit number using indirect addressing mode, to find Sum of N numbers, Sum of Squares.
- 8086/88 Assembly Language program7: Block Transfer.
- 8086/88 Assembly Language program8: Convert BCD to ASCII number.
- 8086/88 Assembly Language program9: Conversion of Packed BCD Number to Unpacked BCD Number.
- 8086/88 Assembly Language program10: Converting BCD to HEXADECIMAL Number.
- 8086/88 Assembly Language program11: ASCENDING & DESCENDING ORDER.
- Demonstration of Interfacing Experiments.

Grading Policy: check

The grading for the course are 60% coursework and 40% Final Exam. The coursework consists of one Midterm Exam, where the midterm exam is worth 20%. It also includes quizzes and lab reports for the remaining 40% that is modified by the course instructor.

