**EC-310 Microprocessor & Microcontroller Based Design : Title Change**

**Proposed - Course Contents**

a. **Credits :** 3+1

b. **Textbook :**

1. W.A.Treibel and A.Singh, "The 8088 and 8086 Microprocessor Programming,

Interfacing, Hardware, and Applications, Latest Edition, Prentice Hall

2. I.Scott Mackenzie, "The 8051 Microcontroller", Latest Edition, Prentice Hall.

c. **Reference Books:**

1. Barry B.Brey, "Intel Microprocessors 8088 and 8086, 80186/80188, 80286, 80386, 80486 Pentium, Programming and Interfacing", Latest Edition, Prentice Hall. 2. Douglas V.Hall, Microprocessors and Interfacing, Programming and Hardware.
3. K.R.Irvine, Assembly language for Intel-based Computers, Prentice Hall.

d**. Course Objectives :**

To teach students the architecture and operations of modern microprocessor based computer systems with emphasis on the Intel 8086/8088 microprocessors. Also to teach students to take on projects using Intel based components and to develop software programs in assembly language for meeting specific requirements.

e. **Topics:**

1. Introduction to Microprocessors and Microcomputers.
2. Internal Architecture of 8086/8088 Microprocessors.
3. Software Architecture of 8086/8088 Microprocessors.
4. Addressing modes of the 8086/8088 Microprocessors.
5. Machine language coding and the debug software development program of the IBM PC.

6. Instruction set of 8086/8088 Microprocessor.
7. Assembly Language Program development and the MICROSOFT MASM Assembler.
8. Memory devices and interfacing.
9. Input/output interfacing.
10. Interrupts of the 8086/8088 Microprocessors.
11. Introduction to Embedded systems.
12. The Intel 8051 Microcontroller: Introduction.
13. Internal Architecture of 8051 Microcontroller.
14. Memory Organization of 8051 Microcontroller.
15. Special functions of 8051 Microcontroller.
16. Timers of 8051 Microcontroller.
17. Assembly Language Programming for 8051 Microcontroller.