

Course Type	Course Code	Name of Course	L	T	P	Credit
OE	ECO301	Microprocessors and their Applications	3		0	

**Course Philosophy:**

Student can learn the assembly language programming for different types of microprocessor and will be able to interface different peripherals to design microprocessor based systems.

**Course Objective:**

Provide adequate knowledge to the architecture and instruction set of different microprocessor for designing various types of microprocessor based low cost systems.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	8 bit- microprocessor: Architecture of Intel 8085 CPU, bus configuration, and Pin Outs, Timing Diagram, Stacks and Subroutines, Addressing Modes, Instruction sets, Programming, Interrupt Structure and Serial I/O, Memory and I/O Interface. Use of compiler, assembler.	10	Develop the understanding on the Architecture of 8085 processor and assembly language programming for 8085 processor.
2	16 bit- microprocessor: Intel 8086 CPU Architecture and Pin Outs, Minimum and Maximum Mode, Memory Segmentation, Addressing Modes, Simple Programs, Interrupt Structure, Clock Generators, Memory and I/O Interface.	10	Develop the understanding on the Architecture of 8086 microprocessor and assembly language programming in it.
3	Interfacing Different Peripherals: Programmable DMA Controller (8237), Programmable Communication Interface (8251), Programmable Interval Timer (8254), Programmable Peripheral Interface (8255), Programmable Interrupt Controller (8259), Key Board Controller (8279), Interfacing of A/D and D/A converters. Programming with peripheral devices.	12	Develop the understanding about the different peripherals and their interfacing with the main processors. Student will be able to design embedded systems and microcomputer systems for different applications
4	Introduction to Advanced Microprocessors: 80186, 80286, 80386, 80486, Pentium and Pentium Pro. Overview of RISC Processors, Arithmetic Coprocessors.	10	Understanding of the architecture of different advanced microprocessors.

Text book:

1. Ramesh S. Ganorkar, Microprocessor Architecture, Programming, and Applications with the 8085, Penram International Publishing, Fifth Edition, 2011.

Reference books:

1. Douglas V. Hall – Microprocessors & Interfacing, Tata McGraw-Hill
2. Ray & Bhurchandi, Advanced Microprocessors & Peripherals, TMH
3. Walter A. Tribel – The 8088 and 8086 Microprocessors, Pearson Education 9.
4. Barry B. Brey – The Intel Microprocessors, PHI/Pearson Ed. Asia