

<b>Branch Name:</b>	Computer Engineering
<b>Semester/Year:</b>	Semester VI / Third Year
<b>Subject Title:</b>	Advanced Processor
<b>Subject Code:</b>	1ET1030605
<b>Pre-requisite:</b>	Microprocessor and Interfacing

**Course Objective:**

- To understand architecture and instruction set of 16 bit microprocessor.
- To understand microprocessor inner architecture and programming.
- To understand interfacing of microprocessor with other devices.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				Total (Marks)
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
03	-	02	04	70	30	30	20	150

Subject Contents			
Sr. No	Topic	Total Hours	Weightage (%)
1	<b>Basics:</b> Intel 8086 Microprocessor architecture, Addressing modes, 8086 pin configuration and function of each pin. 8086 programming using Data movement instructions,	08	20
2	<b>Instruction Set:</b> Arithmetic and logic instructions, Program control instructions. 8086 interrupt instructions.	06	15
3	<b>Operation and Control:</b> Operation of real mode and protected mode interrupt, interrupt flag bits, Hardware interrupts.	08	20
4	<b>Interfacing:</b> Interfacing Concepts, Ports, Interfacing Of I/O Devices, Interrupts In 8085, Programmable Interrupt Controller 8259A, Programmable Peripheral, Interface 8255A	07	20
5	<b>Advance Architecture:</b> Introduction to 80186/286/386/486 and Pentium Microprocessors.	04	10
6	<b>Programming:</b> Writing, Assembling & Executing A Program.	06	15

**Course Outcome:**

After learning the course, the students will be able to understand the working of 16 bit processor. Student also able to understand the architecture and programming operations of processor. Student also learn how the microprocessor interface with standard devices.

### List of Reference Books:

1. Douglas V.Hall, "Microprocessors and Interfacing, Programming and Hardware:TMH.
2. Gaonkar R. S., "Microprocessor Architecture, Programming and Applications", Penram International.
3. Advanced Microprocessors, Daniel Tabak, McGrawHill
4. Microprocessors and Interfacing, N. Senthil Kumar, M. Saravanan, S. Jeevanathan, S. K. Shah, Oxford
5. Microprocessor 8085 and Its Interfacing by Sunil Mathur; 2nd Ed., Reprint 2011.

### List of Suggested titles of Experiments (If Any):

1. Write ALP to add two 16 bit numbers.
2. Write ALP to multiply two 16 bit numbers.
3. Write ALP to add numbers using macro.
4. Write an ALP using Jump instruction which
  - (a) decrement the number from 10 to 0
  - (b) Check the range of temperature: if temp<30 assign ans=01, if temp is in between 30 & 40 assign ans=10 & if temp > 40 assign a=11.
5. Write an ALP to find average of
  - (a) 8-bit array having n numbers of elements.
  - (b) 16-bit array having n numbers of elements
6. Write ALP to separate even and odd numbers
7. Write an ALP to check whether the given number is prime or not. If it is prime store 0 Otherwise stores 1
8. Write an ALP which moves a string from one location to another in memory.
9. Write an ALP to find the factorial of the given number using recursive procedure.
10. Write an ALP which adds 20 Rs. Profit to cost price of each product, cost price are given in the array cp and then store it in new array price.
11. Write an ALP to generate Fibonacci series up to 10 elements, the series start with 0 & 1.

### e-Resources (If any):

1. [http://nptel.ac.in/courses/Webcourse-contents/IIT-KANPUR/microcontrollers/micro/ui/Course\\_home1\\_1.htm](http://nptel.ac.in/courses/Webcourse-contents/IIT-KANPUR/microcontrollers/micro/ui/Course_home1_1.htm)
2. <https://www.slideshare.net/shehrevard/advanced-microprocessor>
3. <http://www.electronicdesign.com/microprocessors/advanced-microprocessor-bus-architecture-amba-bus-system>