BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(An Autonomous Institution)
Amalapuram–533201,Dr. B.R.Ambedkar Konaseema DT,Andhra Pradesh.
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
(Accredited by NBA)

III Year II Semester	**MICROPROCESSORS AND MICROCONTROLLERS LAB**	**L**	**T**	**P**	**C**
Course Code: 23EE6L09	**(PROFESSIONAL CORE)**	**0**	**0**	**3**	**1.5**

Pre-requisite:
Concepts of Microprocessors and Microcontrollers

Course Objectives:

- To study programming based on 8086 microprocessor and 8051 microcontroller.
- To study 8086 microprocessor based ALP using arithmetic, logical and shift operations.
- To study to interface 8086 with I/O and other devices.
- To study parallel and serial communication using 8051& PIC 18 micro controllers.

Course Outcomes:
After the completion of the course the student should be able to:

CO1: Write assembly language program using 8086 microprocessor based on arithmetic - logical number systems and shift operations.

CO2: Write assembly language programs for numeric operations and array handling problems.

CO3: Write a assembly program on string operations. CO4: Interface 8086 with I/O and other devices.

CO5: Do parallel and serial communication using 8051 & PIC 18 micro controllers. CO6: Program microprocessors and microcontrollers for real world applications.

List of experiments
Any 10 of the following experiments are to be conducted:

8086 Microprocessor Programs

1. Arithmetic operations – Two 16-bit numbers and multibyte numbers :addition - subtraction - multiplication and division – Signed and unsigned arithmetic operations - ASCII – Arithmetic operations.
2. Logic operations – Shift and rotate – Converting packed BCD to unpacked BCD - BCD to ASCII conversion – BCD numbers addition.
3. Arrange the given array in ascending and descending order
4. Determine the factorial of a given number
5. By using string operation and Instruction prefix**:** Move block - Reverse string Sorting - Inserting - Deleting - Length of the string - String comparison.
6. Find the first and n^{th} number of 'n' natural numbers of a Fibonacci series.
7. Find the number and sum of even and odd numbers of a given array
8. Find the sum of 'n' natural numbers and squares of 'n' natural numbers
9. Arithmetic operations on 8051

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10. Conversion of decimal number to hexa equivalent and hexa equivalent to decimal number
11. Find the Sum of elements in an array and also identify the largest & smallest number of a given array using 8051

Programs on Interfacing

12. Interfacing 8255–PPI with 8086.
13. Stepper motor control using 8253/8255.
14. Reading and Writing on a parallel port using 8051
15. Timer in different modes using 8051
16. Serial communication implementation using 8051
17. Understanding three memory areas of 00 – FF Using 8051 external interrupts.
18. Traffic Light Controller using 8051.