

Course Title: **Microprocessor and Computer Architecture (3 Cr.)**

Course Code: **CACSI55**

Year/Semester: **I/II**

Class Load: **6 Hrs. / Week (Theory: 3 Hrs, Tutorial: 1 Hr., Practical: 2 Hrs.)**

### Course Description

This course is an introduction to microprocessor and computer architecture. It covers topics in both the physical design of the computer (organization) and the logical design of the computer (architecture).

### Course Objectives

The course has following specific objectives:

- To explain the microprocessor.
- To explain the assembly language programming.
- To explain the overview of computer organization.
- To explain the principle of CPU system.
- To explain the principle of memory system
- To explain the principle of data flow.

### Course Contents

#### Unit 1 Fundamental of Microprocessor

**5 Hrs.**

Introduction to Microprocessors, Microprocessor systems with bus organization, Microprocessor architecture and operation, 8085 Microprocessor and its operation, 8085 instruction cycle, machine cycle, T states, Addressing modes in 8085, Introduction to 8086.

#### Unit 2 Introduction To Assembly Language Programming

**10 Hrs.**

Assembly Language Programming Basics, Classification of Instructions and Addressing Mode, 8085 Instruction Sets, Assembling, Executing and Debugging the Programs, Developing Counters and Time Delay Routines, Interfacing Concepts

#### Unit 3 Basic Computer Architecture

**4 Hrs.**

**Introduction:** History of computer architecture, Overview of computer organization, Memory Hierarchy and cache, Organization of hard disk.

**Instruction Codes:** Stored Program Organization-Indirect Address, Computer Registers, Common bus system, Instruction set, Timing and Control-Instruction Cycle

#### Unit 4 Microprogrammed Control

**10 Hrs.**

Basic Computer Design of Accumulator: Control of AC Register, ALU Organization; Control Memory-Address Sequencing: Conditional Branching, Mapping of Instruction-Subroutines; Micro Program: Symbolic Micro