

Branch Name:	Computer Engineering / Information Technology
Program Code:	ET103/ET105
Course Title:	Computer Organization and Architecture Practical
Course Code:	2ET1030403P
Pre-requisite Course:	1. Basic knowledge regarding digital logic design & memory organization 2. Awareness regarding any simulation tool 3. Awareness regarding any programming language like 'C' 4. Disciplined learning with positive attitude.

Course Objective: The Objective is to expose the students to the various key aspects of Computer Organization & Architecture by enabling them to perform the experiments with support of a design and simulation in Logistic.

Teaching and Examination Scheme:

Credit	Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

Sr.No	Practical Exercise	Contact Hours
1.	Dive deep into each functional unit (CPU, ALU, Control Unit, Memory, Input/output) and understand their roles and interactions.	2
2.	Understand the basics of assembly language and its role in low-level programming. Write programs to perform arithmetic operations, manipulate data in registers, and understand different addressing modes.	2
3.	Create practical scenarios where data is transferred between different components through buses.	2
4.	Understand how cache memory works and simulate cache operations, such as cache hits and misses.	2
5.	Write how input and output operations are handled in assembly language.	2
6.	Define and implement different instruction formats.	2
7.	Design data transfer mechanisms between registers and memory.	2
8.	Experiment with various addressing mode	2
9.	Process multiple data elements simultaneously using vector operations.	2
10.	Study multiplication algorithms and simulate the multiplication circuit with different inputs.	2

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understanding block diagrams of popular general-purpose computers.	1. Remember 2. Understanding
CLO2	Able to Understand the how operations are handled in assembly language.	2. Understanding
CLO3	Analyze computer systems at the hardware level, including CPU components & circuits, buses, and registers considering trade-offs and the evolution of processors	2. Understanding
CLO4	Understanding need of various Memory types in computer's systems.	2. Understanding
CLO5	Study about Basic multiplication and multiplication circuit algorithms.	3. Applying

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M	L	L						H	L	M		M	M		
CLO2	M	L	L						H	L	M		M	M		
CLO3	M	L	L						H	L	M		M	M		
CLO4	M	L	L						H	L	M		M	M		
CLO5	H	M	M						H	L	M		M	M		

H: High, M: Medium, L: Low