ComputerOrganizationandArchitecture

Course Code	19CS3401	**Year**	II	**Semester**	II
Course Category	Program Core	**Branch**	CSE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Fundamentals of Digital Logic Design (19CS3301)
Continuous Internal Evaluation :	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Understand the basic functional units of a computer system and its organization.	**L2**
CO2	Apply appropriate instructions for processing various types of computer operations.	**L3**
CO3	Applying various types of organizations on registers.	**L3**
CO4	Analyze memory hierarchy, I/O communication and pipelining.	**L4**

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	3													
CO2	3													
CO3	3								3	3				
CO4		3												

CourseContent		
UNIT-1	**RegisterTransferandMicro-Operations:**RegisterTransferLanguage,RegisterTransfer,memoryTransfers,BusconstructionwithMultiplexers,ArithmeticMicro-operations,LogicMicro-Operations,ShiftMicro-operations,ArithmeticLogicShiftUnit.	**CO1,CO2**
UNIT-2	**Basic Computer Organization**: Instruction codes, Computer Registers,ComputerInstructions,TimingandControl,InstructionCycle,Memory-ReferenceInstructions,Input-OutputandInterrupt.	**CO1, CO2**
UNIT-3	**CentralProcessingUnit**:GeneralregistersOrganization,StackOrganization,InstructionFormats,AddressingModes,DataTransfer andManipulation,ProgramControl.	**CO1,CO3**
UNIT-4	**ComputerArithmetic**: Introduction,AdditionandSubtraction,BoothMultiplicationAlgorithm. **Memory Organization**: Memory Hierarchy, Main Memory, Auxiliarymemory, Associative Memory,CacheMemory,VirtualMemory.	**CO1,CO2, CO4**
UNIT-5	**Input-OutputOrganization**:PeripheralDevices,Input-outputInterface,AsynchronousDataTransfer,PriorityInterrupt,DirectMemoryAccess (DMA),Input-Output Processor. **PipelineandParallelProcessing**:Parallelprocessing,Pipelining, Arithmeticpipeline, Instructionpipeline.	**CO1,CO4**
LearningResources		
TextBooks		
1.ComputerSystemArchitecture,Morris M.Mano,Third Edition,1992,Pearson.		
References		
1. ComputerOrganizationandArchitecture,WilliamStallings,EighthEdition,2010,PHI. 2. ComputerOrganization,CarlHamachar,Vranesic,2002,McGrawHill.		
e-Resourcesandother DigitalMaterial		
1.https://nptel.ac.in/courses/106/106/106106092/		