

Semester	2 – C1CS230222T
Course	Major
Paper Title	COMPUTER SYSTEM ORGANISATION
No. of Credits	4
Theory/ Practical / Composite	Composite
Minimum No. of preparatory hours per week a student has to devote	5
Number of Modules	One
Syllabus	<p>1. Instruction: Operation Code and Operand. Zero, One, Two and Three address instruction. Instruction types, Addressing modes.</p> <p>2. Memory: Memory Organisation - Interfacing with system bus using multiplexers/tri-state devices, Types of Memory. Memory Hierarchy, Associative Memory, Cache Memory, Virtual Memory.</p> <p>3. Von Neumann vs Harvard Architecture</p> <p>4. Control Unit: Control Structure and Behavior, Hardwired Control and Micro programmed Control: Parallelism in Microinstruction</p> <p>5. I/O Organisation: Polling, Interrupts, DMA, I/O Bus Interfacing and Protocols - Strobe Control, Handshaking, Bus Arbitration.</p> <p>6. Fixed and Floating Point Arithmetic: Addition, Subtraction, Multiplication (Booth's Algorithm) & Division.</p> <p>7. ALU - Combinational ALU Design</p>
Learning Outcomes	<p>1. Learn about the different components such as memory, control unit, ALU of a computer and how they interface and interact with each other.</p> <p>2. Understand the circuits that are present within the components of a computer.</p> <p>3. Acquire knowledge about the roles and functions of the components.</p>
Reading/Reference Lists	<p>1. Digital Computer Electronics, Malvino and Brown, Tata McGraw-Hill</p> <p>2. M. Mano, Computer System Architecture, Pearson Education 1992</p> <p>3. W. Stallings, Computer Organization and Architecture Designing for Performance, 8th Edition, Prentice Hall of India, 2009</p> <p>4. Carl Hamacher, Computer Organization, Fifth edition, McGrawHill, 2012.</p> <p>5. Computer Architecture and Organization, Hayes, McGraw-Hill</p>

	6. Computer Organization and Design, P. Pal Chaudhuri, Prentice-Hall of India	
Evaluation	Theory CIA: 12 Attendance: 3 Semester Exam: 45	Practical C1CS230222P CA: 38 Attendance: 2
Paper Structure for Theory Semester Exam	Answer 3 out of 5 of 15 marks each	