

1.	Title of the course	Computer Organization
2.	Course number	CS203L
3.	Structure of credits	3-0-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CS2204/8
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	<b>Course Objective(s):</b> To understand the subsystems of modern computer system, design aspects of these subsystems, and interactions between the subsystems; To learn techniques for evaluation and enhancement of performance of computer systems.	
10.	<b>Course Content:</b> Introduction and Performance: CPU, memory, I/O subsystems, bus, technology trends, measuring CPU performance, Amdahl's law, performance metrics and benchmarking; Instruction sets: RISC and CISC paradigms, encoding/decoding of instructions, addressing modes, assembly language programming; ALU design: adder, multiplier, floating point; Datapath and Control: single-cycle and multi-cycle datapaths, control of datapaths and implementing control unit, pipeline, hazards, multipipeline; Memory organization: main memory, cache, memory hierarchy performance metrics; I/O: device types and characteristics, program controlled, interrupt controlled and DMA.	
11.	<b>Textbook(s):</b> 1. Hamacher C, Vranesic Z, Zaky S and Manjikian N, <i>Computer Organization and Embedded Systems</i> , McGraw-Hill (2012). 2. Patterson D A and Hennessy J L, <i>Computer Organization and Design -The Hardware/Software Interface</i> , Morgan Kaufmann (2013).	
12.	<b>Reference(s):</b> 1. Mano M M and Mall R, <i>Computer System Architecture</i> , Pearson Education (2017). 2. Nisan N and Schocken S, <i>The Elements of Computing Systems - Building a Modern Computer from First Principles</i> , MIT Press (2008). 3. Stallings W, <i>Computer Architecture and Organization - Designing for Performance</i> , Pearson Education (2016).	