

1.	Title of the course	Computer System Architecture
2.	Course number	CS506L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CS5202/6
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	Course Objective(s): To introduce the advanced architectural concepts which are in practice and to provide exposure to the research problems.	
10.	Course Content: Processor Architecture: Instruction-Level Parallelism, Superscalar & VLIW Architecture, Multi-core processors, Thread Level Parallelism; Memory Subsystem: Multilevel caches, Caches in multi-core processors, Memory controllers for multi-core systems; Multiple processor systems: Taxonomy, Distributed and Shared memory system, Memory consistency models, Cache coherence, and Interconnection networks, Network-on-chip; Advanced topics in architecture: GPU, GPGPU, Parallel Programming, RISC-V Architecture, Accelerators and domainspecific architecture, Reliable architecture, Dark Silicon and Power Issues	
11.	Textbook(s): 1. Patterson D A, and Hennessy J L, <i>Computer Architectures: A Quantitative Approach</i> , Morgan Kaufmann Publishers (2011).	
12.	Reference(s): 1. John Paul Shen, and Mikko H. Lipasti, <i>Modern Processor Design: Fundamentals of Superscalar Processors</i> , McGraw-Hill, (2005).	