

**INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE**

1.	Title of the Course	Computer System Architecture
2.	Course Number	CS5202
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Computer Science Engineering
8.	To take effect from	January 2019
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: To introduce the advanced architectural concepts which are in practice and to provide exposure to the research problems.	
12.	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 domain-specific architecture, Reliable architecture, Dark Silicon and Power Issues.	
13.	Text book(s): 1. D. A. Patterson, J. L. Hennessy, <i>Computer Architectures: A Quantitative Approach</i> , Morgan Kaufmann Publishers, (2011).	
14.	Reference(s): 1. John Paul Shen, Mikko H. Lipasti, <i>Modern Processor Design: Fundamentals of Superscalar Processors</i> , McGraw-Hill, (2005).	