Subject Name: Computer Architecture					
Paper Code: CSEN 3104					
Contact Hours per week	**L**	**T**	**P**	**Total**	**Credit Points**
	3	**0**	**0**	**3**	**3**

Module 1: CPU Architecture: Instruction Execution Mechanism details; Classification of Computer Architecture – Von Neumann and Harvard; Basics of Pipelining; Instruction Set Architecture details; Comparison between various types: Stack / Accumulator / Memory to Memory/ Load Store architecture; CISC vs. RISC Architecture; MIPS Architecture & ISA as case study.

Pipelined Architecture:

Topic	Book/Notes Pages
Brief Introduction, Performance Measures - speed up, Efficiency ,performance - cost ratio etc Static pipelines - reservation tables, scheduling of static pipelines, definitions - minimum average latency, minimum achievable latency, greedy strategy Theoretical results on latency bounds without proof.	Hwang and Briggs:Chapter 3 page145 to 156- 3.1, 3.1.2, 3.1.3, pages 200 to 207-3.3.4, 3.3.5 Try doing problem 3.4 Hwang and Jotwani:- Chapter 6 pages 227 to 237,6.3.1,6.3.2,Try doing problem 6.5 for revision

Topic	Book/Notes	Pages
Module 2: Vector Processing: Vector registers; Vector Functional Units; Vector Load / Store; Vectorization; Vector operations: gather / scatter; Masking; Vector chaining;	Hwang and Briggs: 3.4.1-pp213-218, 4.4.2-page271-276 Hwang and Jotwani:- 8.1.1, 8.3.1, 8.3.2 upto page 376	
SIMD Architectures: brief introduction, various concepts illustrated by studying detailed	Hwang and Briggs:- Chapter 5-pages 325-333	
SIMD algorithms, viz., Matrix multiplication, Sorting on Linear array	Scanned Notes Hwang and Briggs5.3.1-pp355-358	
Interconnection Networks Mesh, Shuffle-exchange, Banyan, Omega, Butterfly, Delta	Hwang and Briggs:- 5.2 -page333-339, 5.2.3-pp342-pp345, 5.2.5- pp350-353, Delta:pp 499-501 Hwang and Jotwani:- 2.4 page 66-81 only the things that we have done in class, 7.1.3pp 290-291	

Do browse through the topics sent in the various presentations of Module 2