4148 – COMPUTER ARCHITECTURE

Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)			
Lectures	Practical	Credit			Theory		Practical Ex.	Total
3	-	3	25	-	3 Hrs	100	-	125

Pre-requisite	Source	Semester	Theory	Test	Total	TW	PR	Gr Total
Nil	COM	6	75	25	100	–	–	100

Rationale: This course deals with the study of 16 and 32 bit microprocessors, their design, architecture and programming.

COURSE CONTENTS	Hrs	Mks
1. PROCESSOR TECHNOLOGY – CISC & RISC ARCHITECTURE Representative architecture of CISC and RISC. Superscalar processor, vector and symbolic processor and their representative architecture, Pipeline architecture, Brief introduction to parallel processors.	8	20
2. 16 BIT MICROPROCESSORS 80286 80286 architecture, Real address mode, PVAM, Memory Management, Selectors, Descriptors, Address translation registers, Pin functions, Instructions.	8	15
3. 32-BIT MICROPROCESSORS 80386 Architecture, Pins and Signals, 80386 bus transfer technique, 80386 read and write cycles, 80386 modes – Real, Protected, Virtual 8086, 80386, Data types instruction formats, Addressing modes. 80486 – Architecture, Instructions and salient features.	8	15
4. MOTOROLA MC68000 68000 programming model, addressing structures, instruction format, Addresing modes, pins and signals, system diagram, timing diagram, 68000 memory interface, 68000 interrupts, DMA and exception handling.	8	20
5. PENTIUM MICROPROCESSOR Introduction to the Pentium Microprocessor, Special Pentium Registers, Pentium Memory Management, New Pentium Instructions, Pentium Pro Microprocessors and its special features.	8	20
6. PARALLEL PROCESSORS Basic concepts of Parallel and Multiple Processing, Types of Parallel Processors, Pipeline Architecture, Multiprocessor Architecture and application.	8	10
Total	48	100

REFERENCE BOOKS:

1. Microprocessors and Microcomputer based system design by Rafiquzzaman.
2. Microprocessors and Microcontrollers by B.P. Singh.
3. Advanced Computer Architecture by Kai Hwang.