



SOCIETY OF ST. FRANCIS XAVIER, PILAR'S
FR. CONCEICAO RODRIGUES COLLEGE OF ENGINEERING

(Approved by AICTE & Affiliated to University of Mumbai)

Fr. Agnel Ashram, Bandstand, Bandra (W), Mumbai - 400 050.

Phone : (022) 6711 4000, 6711 4101, 6711 4104

Website : www.frcrce.ac.in • Email : crce@fragnel.edu.in

Computer Engineering

(Academic Year :2023-2024)

Class: SE COMPUTERS DIV-A

Course Code: CSC304	
Course Name: Digital Logic and Computer Organization	
Course Teacher: Prof. Heenakausar Pendhari	
Course Outcomes (CO): <i>At the End of the course students will be able to</i>	
CSC304.1	Solve problems on number system conversion and on algorithms for arithmetic operations.
CSC304.2	Explain digital components in computer architecture and processor organization.
CSC304.3	Explain the generation of control signals to perform processor operations.
CSC304.4	Apply concepts of memory organization and mapping techniques to design cache memory.
CSC304.5	Describe the concepts of parallel processing and different Buses.



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Course Lesson Plan

Sr. No.	Proposed Date	Actual Date	Topics	CO	Teacher's Remark	HoD's Remark
1	17—07-23		Introduction to subject . Discussion on different Course outcomes Introduction to logic gates			
2	18-07-2023		Number system : Binary, Octal, Hexadecimal, Decimal conversion	CSC304.1		
3	20-07-2023		Number system : Binary, Octal, Hexadecimal, Decimal conversion	CSC304.1		
4	25-07-2023		Logic gates: AND, OR, NOT, NAND,NOR, EX-NOR,EX-OR truth table	CSC304.2		
5	26-07-2023		Boolean Algebra, Problems on Boolean Algebra	CSC304.2		
6	27-07-2023		Logic gates, Design of logic gates using universal gates.	CSC304.2		
7	1-08-2023		SOP & POS Representation , K- Map technique	CSC304.2		
8	2-08-2023		K-map, 2 variable ,3-variable, 4-variable, Problems on K-maps	CSC304.2		
9	3-08-2023		Design of Half Adder, Full adder, Multiplexer	CSC304.2		
10	8-08-2023		Design of Multiplexer, Design of logical function using Multiplexer(74151)	CSC304.2		
11	9-08-2023		Design of logical function using Multiplexer, De-multiplexer	CSC304.2		
12	10-08-2023		De-Multiplexer, De-mux tree, Decoder. Design of logical function using 74138	CSC304.2		
	15-08-2023		Independence Day			
	16-08-2023		Parsi New Year			
13	17-08-2023		Encoder, priority encoder, Binary Arithmetic	CSC304.2		
14	22-08-2023		Binary Addition, Subtraction using 1's and 2's complement	CSC304.1	Assignment 1	
15	23-08-2023		BCD and Hex Arithmetic , problem based on it	CSC304.1		
	23-08-2023				Quiz-1	
16	24-08-2023		Multiplication, Booths Multiplication Algorithm.	CSC304.1		
17.	25-08-2023		Booths Multiplication Algorithm	CSC304.1	Extra(2hrs)	
	29-08-23 to 30-08-23		Unit Test-1			



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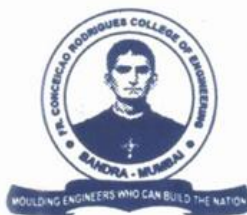
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17	31-08-2023		Division, Restoring and Non-restoring DivisionAlgorithm.	CSC304.1		
18	5-9-2023		Division, Restoring and Non-restoring DivisionAlgorithm.	CSC304.1		
19	6-9-2023		Introduction to SR,D,T ,JK flip flops (truth table)	CSC304.2		
20	7-9-2023		Applications of Flip flops	CSC304.2		
21	8-9-2023		Remedial -1		Extra	
22	12-9-2023		Register Organization ,Instruction Formats	CSC304.2		
	12-9-2023				Quiz 2	
23	13-9-2023		Addressing Modes, InstructionCycle, Interpretation and sequencing.	CSC304.2		
24	14-9-2023		Hardwired Control Unit: State Table Method, Delay Element Methods	CSC304.3		
	19-09-23 to 22-09-23		Shri Ganesh Festival			
25	26-9-2023		Microprogrammed Control Unit:	CSC304.3		
26	27-9-2023		Instruction-Format, Sequencing and execution	CSC304.3		
	28-9-2023		Anant Chaturdashi			
27	3-10-2023		Micro operations, Examples of microprograms.	CSC304.3		
28	4-10-2023		Introduction and characteristics of memory, Types of RAM and ROM,	CSC304.4		
29	5-10-2023		MemoryHierarchy, 2-level Memory Characteristic,	CSC304.4		
	5-10-2023				Assignment-2	
30	5-10-2023		Cache Memory: Concept, locality of reference	CSC304.4	Extra	
31	6-10-2023		Cache Mapping techniques: Fully Associative, Direct	CSC304.4	Extra	
	09-10-23 to 13-10-23		Unit Test-2			
32	17-10-23		Cache Mapping techniques: Set Associative	CSC304.4		
33	18-10-23		Cache coherence and write policies. Interleaved and Associative Memory.	CSC304.4	Dasara (Extra)	
34	19-10-23		Basic Pipelined Data path and control	CSC304.5		
35	19-10-2023		data dependencies, data hazards	CSC304.5		



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36	20-10-2023		Branch hazards, delayed branch	CSC304.5		
37	24-10-23		Branch prediction	CSC304.5		
38	25-10-2023		Introduction to buses: ISA, PCI, USB. Bus Contention and Arbitration	CSC304.5		
	25-10-2023				Quiz 3	
39	26-10-2023		Remedial Session-2			
		University ESE Examination	University ESE Examination			

Textbooks:

1	R. P. Jain, "Modern Digital Electronic", McGraw-Hill Publication, 4 th Edition.
2	William Stalling, "Computer Organization and Architecture: Designing and Performance", Pearson Publication 10 TH Edition.
3	John P Hayes, "Computer Architecture and Organization", McGraw-Hill Publication, 3 RD Edition.
4	Dr. M. Usha and T. S. Shrikanth, "Computer system Architecture and Organization", Wileypublication.

References:

1	Andrew S. Tanenbaum, "Structured Computer Organization", Pearson Publication.
2	B. Govindarajalu, "Computer Architecture and Organization", McGraw-Hill Publication.
3	Malvino, "Digital computer Electronics", McGraw-Hill Publication, 3 rd Edition.
4	Smruti Ranjan Sarangi, "Computer Organization and Architecture", McGraw-HillPublication.

Course Instructor: Prof. Heenakausar Pendhari