UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA
Academic Lesson plan for winter session (2023-2024)

Name of the teaching faculty: **Sarita Bauri**
Semester:**5TH**
No. of periods per week: **5**
semester Exam: **80**
Total Marks: **100**

Discipline / Dept.: **EE**
Subject (Theory): **DE&MP**
Total Periods: **80**
Class Test:**20**

Week	Period	Unit/chapter	Topic to be covered	Remark
1ST	1st	BASICS OF DIGITAL ELECTRONICS	Binary, Octal, Hexadecimal number systems and compare with Decimal system	
	2nd	BASICS OF DIGITAL ELECTRONICS	-DO-	
	3rd	BASICS OF DIGITAL ELECTRONICS	Binary addition, subtraction, Multiplication and Division	
	4th	BASICS OF DIGITAL ELECTRONICS	1's complement and 2's complement numbers for a binary number	
	5th	BASICS OF DIGITAL ELECTRONICS	Subtraction of binary numbers in 2's complement method.	
2ND	1st	BASICS OF DIGITAL ELECTRONICS	Use of weighted and Un-weighted codes & write Binary equivalent number for a number in 8421, Excess-3 and Gray Code and vice-versa.	
	2nd	BASICS OF DIGITAL ELECTRONICS		
	3rd	BASICS OF DIGITAL ELECTRONICS	Importance of parity Bit.	
	4th	BASICS OF DIGITAL ELECTRONICS	Logic Gates: AND, OR, NOT, NAND, NOR and EX-OR gates with truth table.	
	5th	BASICS OF DIGITAL ELECTRONICS	Realize AND, OR, NOT operations using NAND, NOR gates.	
3RD	1st	BASICS OF DIGITAL ELECTRONICS	Different postulates and De-Morgan's theorems in Boolean algebra	
	2nd	BASICS OF DIGITAL ELECTRONICS	Use Of Boolean Algebra For Simplification Of Logic Expression	
	3rd	BASICS OF DIGITAL ELECTRONICS		
	4th	BASICS OF DIGITAL ELECTRONICS	Karnaugh Map For 2,3,4 Variable, Simplification Of SOP And POS Logic Expression Using K-Map.	
	5th	BASICS OF DIGITAL ELECTRONICS		
4TH	1st	COMBINATIONAL LOGIC CIRCUITS	Give the concept of combinational logic circuits.	
	2nd	COMBINATIONAL LOGIC CIRCUITS		
	3rd	COMBINATIONAL LOGIC CIRCUITS	. Half adder circuit and verify its functionality using truth table	
	4th	COMBINATIONAL LOGIC CIRCUITS	Realize a Half-adder using NAND gates only and NOR gates only.	
	5th	COMBINATIONAL LOGIC CIRCUITS	Full adder circuit and explain its operation with truth table.	
	1st	COMBINATIONAL LOGIC CIRCUITS	Realize full-adder using two Half-adders and an OR – gate and write truth table	

5TH	2nd	COMBINATIONAL LOGIC CIRCUITS		
	3rd	COMBINATIONAL LOGIC CIRCUITS	Full substractor circuit and explain its operation with truth table.	
	4th	COMBINATIONAL LOGIC CIRCUITS		
	5th	COMBINATIONAL LOGIC CIRCUITS	Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer	
6TH	1st	COMBINATIONAL LOGIC CIRCUITS		
	2nd	COMBINATIONAL LOGIC CIRCUITS	Working of Binary-Decimal Encoder & 3 X 8 Decode	
	3rd	COMBINATIONAL LOGIC CIRCUITS		
	4th	COMBINATIONAL LOGIC CIRCUITS	Working of Two bit magnitude comparator	
	5th	COMBINATIONAL LOGIC CIRCUITS		
7TH	1st	SEQUENTIAL LOGIC CIRCUITS	Give the idea of Sequential logic circuits	
	2nd	SEQUENTIAL LOGIC CIRCUITS	State the necessity of clock and give the concept of level clocking and edge triggering	
	3rd	SEQUENTIAL LOGIC CIRCUITS	Clocked SR flip flop with preset and clear input	
	4th	SEQUENTIAL LOGIC CIRCUITS	Construct level clocked JK flip flop using S-R flip-flop and explain with truth table	
	5th	SEQUENTIAL LOGIC CIRCUITS	Concept of race around condition and study of master slave JK flip flop	
8TH	1st	SEQUENTIAL LOGIC CIRCUITS	Give the truth tables of edge triggered D and T flip flops and draw their symbols.	
	2nd	SEQUENTIAL LOGIC CIRCUITS	Applications of flip flops.	
	3rd	SEQUENTIAL LOGIC CIRCUITS	Define modulus of a counter	
	4th	SEQUENTIAL LOGIC CIRCUITS	4-bit asynchronous counter and its timing diagram.	
	5th	SEQUENTIAL LOGIC CIRCUITS	Asynchronous decade counter.	
9TH	1st	SEQUENTIAL LOGIC CIRCUITS	4-bit synchronous counter.	
	2nd	SEQUENTIAL LOGIC CIRCUITS	Distinguish between synchronous and asynchronous counters	
	3rd	SEQUENTIAL LOGIC CIRCUITS	State the need for a Register and list the four types of	
	4th	SEQUENTIAL LOGIC CIRCUITS	Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop.	
	5th	SEQUENTIAL LOGIC CIRCUITS		
10TH	1st	8085 Microprocessor	Introduction to Microprocessors, Microcomputers	
	2nd	8085 Microprocessor	Architecture of Intel 8085A Microprocessor and description of each block	
	3rd	8085 Microprocessor	Pin diagram and description	
	4th	8085 Microprocessor	Stack, Stack pointer & stack top	
	5th	8085 Microprocessor	Interrupts	
11TH	1st	8085 Microprocessor	Opcode & Operand,	
	2nd	8085 Microprocessor	Differentiate between one byte, two byte & three byte instruction with example	
	3rd	8085 Microprocessor	Instruction set of 8085 example	
	4th	8085 Microprocessor		

	5th	8085 Microprocessor	Addressing mode	
12TH	1st			
	2nd		Fetch Cycle, Machine Cycle, Instruction Cycle, T-State	
	3rd	8085 Microprocessor	Timing Diagram for memory read	
	4th	8085 Microprocessor		
	5th	8085 Microprocessor	Timing Diagram for 8085 instruction	
13TH	1st	8085 Microprocessor		
	2nd	8085 Microprocessor	Counter and time delay.	
	3rd	8085 Microprocessor		
	4th	8085 Microprocessor	Simple assembly language programming of 8085	
	5th	8085 Microprocessor		
14TH	1st	INTERFACING AND SUPPORT CHIPS	Basic Interfacing Concepts	
	2nd	INTERFACING AND SUPPORT CHIPS		
	3rd	INTERFACING AND SUPPORT CHIPS		
	4th	INTERFACING AND SUPPORT CHIPS	Functional block diagram and description of each block of Programmable peripheral interface Intel 8255	
	5th	INTERFACING AND SUPPORT CHIPS		
15TH	1st	INTERFACING AND SUPPORT CHIPS		
	2nd	INTERFACING AND SUPPORT CHIPS	Application using 8255: Seven segment LED display, Square wave generator, Traffic light Controller	
	4th	INTERFACING AND SUPPORT CHIPS		
	5TH	INTERFACING AND SUPPORT CHIPS		