GIET POLYTECHNIC JAGATPUR, CUTTACK LESSON PLAN

Discipline: ELECTRICAL ENGG.	Semester: 5th Sem	Name of theTeaching Faculty: Pradeepta Prajna ranjan Swain
Subject:Digital Etc &M.P	No.of Days / perweek class allotted: 05	Semester From date : 15.07.2025 ToDate: 15.11.2025 No. of Weesks : 15

Week	Class Day	Topics
1ST	1st	1. BASICS OF DIGITAL ELECTRONIC 1.1 Binary, Octal, Hexadecimal number system and compare with Decimal system.
	2nd	1.2 Binary addition, subtraction, Multiplication and Division.
	3rd	1.3 1 's complement and 2'scomplement numbers for a binary number
	4th	1.4 Subtraction of binary numbers in 2'scomplement method.
	5th	1.5 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	1st	1.6 Importance of parity Bit.
	2nd	Problems discussion
	3rd	1.7 Logic Gates: AND, OR, NOT,NAND,NOR and EX-OR gates with truth table.
	4th	1.8 Realize AND ,OR, NOT operations using NAND,NOR gates.
	5TH	Revision
3RD	1st	1.9 Different postulates and De-Morgan's theorems in Boolean algebra.
	2nd	1.10 Use Of Boolean Algebra For Simplification Of Logic Expression
	3rd	1.11 Karnaugh Map For 2,3,4Variable,SimplificationOfSOPAndPOS Logic Expression Using K-Map
	4th	1.11 Karnaugh Map For 2,3,4Variable,SimplificationOfSOPAndPOSLogicExpressionUsingK-Map
	5th	1.11 KarnaughMapFor2,3,4Variable,SimplificationOfSOPAndPOSLogicExpressionUsingK-Map
4TH	1st	COMBINATION ALL OGI CCIRCUIT 2.1 Give the concept of combinational logic circuits.
	2nd	2.2 Half adder circuit and verify its functionality using truth table.
	3rd	2.3 Realize a Half-adder using NAND gates only and NOR gate sonly.
	4th	2.4Fulladdercircuitandexplainitsoperationwithtruthtable.
	5th	Problems discussion

5TH	1st	2. 5 Realizefull-adderusingtwoHalf-addersandanOR–gateandwritetruthtable
	2nd	2.6 Full substract or circuit and explain its operation with truth table.
	3rd	2.6 Full substractor circuit and explain its operation with truth table.
	4th	2.7 Operationof4X1 Multiplexersand1X4 de multiplexer
	5th	2.7 Operationof4X1 Multiplexersand1X4 de multiplexer
6TH	1st	Problems discussion
	2nd	Revision
	3rd	2.8 WorkingofBinary-DecimalEncoder&3X8Decoder.
	4th	2.8 WorkingofBinary-DecimalEncoder&3X8Decoder.
	5th	2.9 Working of Two bit magnitude comparator.
7TH	1st	SEQUENTIALLOGICCIRCUITS3.1GivetheideaofSequentiallogiccircuits
	2nd	3.2 State thenecessityofclockandgivetheconceptoflevelclockingandedgetriggering,
	3rd	3.3 Clocked SR flip flop with preset and clear inputs.
	4th	3.5 ConstructlevelclockedJKflipflopusingS-Rflip-flopandexplainwithtruth table
	5th	3.6 Concept of race around condition and study of master slave JK flip flop.
8TH	1st	3.7 GivethetruthtablesofedgetriggeredDandTflipflopsanddrawtheirsymbols.
	2nd	3.8 Applications of flip flops. 3.9 Define modulus of a counter
	3rd	3.10 4-bitasynchronouscounteranditstimingdiagram 3.11 Asynchronous decade counter.
	4th	3.12 4-bitsynchronouscounter. 3.13 Distinguish between synchronous and asynchronous counters.
	5th	3.14 State the need for a Register and list the four types of registers.
9TH	1st	3.15WorkingofSISO,SIPO,PISO,PIPORegisterwithtruthtableusingflipflop.
	2nd	Problems discussion
	3rd	Problems discussion
	4th	Revision
	5th	Revision
10TH	1st	**8085MICROPROCESSOR:.** **4.1IntroductiontoMicroprocessors,Microcomputers**
	2nd	4.2 Architecture of Intel 8085A Microprocessor and description of each block.
	3rd	4.3 Pin diagram and description.
	4th	4.4 S tack, Stack pointer & stack top
	5th	4.5 nterrupts

11TH	1st	4.6 Op code& Operand,
	2nd	4.7 Differentiate between one byte, two byte & three byte instruction with example.
	3rd	4.7 Differentiate between one byte, two byte & three byte instruction with example.
	4th	4.7 Differentiate between one byte, two byte & three byte instruction with example.
	5th	4.8 Instructionsetof8085example
12TH	1st	4.8 Instructionsetof8085example
	2nd	4.9 Addressing mode
	3rd	4.10 Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
	4th	4.10 Fetch Cycle, Machine Cycle , Instruction Cycle, T-State
	5th	4.11 Timing Diagram for memory read, memory write ,I/Oread, I/Owrite
13TH	1st	4.11 Timing Diagram for memory read ,memory write, I/O read ,I/O write
	2nd	4.12 Timing Diagram for 8085 instruction
	3rd	4.13 Counter and time delay.
	4th	4.14 Simple assembly language programming of 8085.
	5th	Revision
14TH	1st	5.INTERFACINGANDSUPPORTCHIPS 5.1BasicInterfacingConcepts,Memorymapping.
	2nd	5.1 Basic Interfacing Concepts,I/O mapping
	3rd	5.2 Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	4th	5.2 Functional block diagram and description of each block of Programmable peripheral interf Intel 8255
	5th	5.2 Functional block diagram and description of each block of Programmable peripheral interf Intel 8255
15TH	1st	5.3 Application using 8255: Seven segment LED display
	2nd	5.3 Application using 8255: Seven segment LED display
	3rd	5.3 Application using 8255: Seven segment LED display
	4th	Revision
	5th	Revision

Pradeepta Prajnaranjan Swain
Signature of faculty 11.07.25

Signature of lecturer
G.I.E.T (POLY), C...

11/7/25
Signature of principal