NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: Th-3 (DIGITAL ELECTRONICS & MICROPROCESSOR)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Basics Of Digital Electronics	15	15
2	Combinational Logic Circuits	15	15
3	Sequential Logic Circuits	15	8
4	8085 Microprocessor	20	20
5	Interfacing And Support Chips	10	10
	TOTAL	75	75

Discipline: EE	Semester: 5th	Name of the Teaching Faculty: Er. BISWAJIT PARIDA
Week	Class Day	Theory / Practical Topics
1st	1st	**1. BASICS OF DIGITAL ELECTRONICS** 1.1 Binary, Octal, Hexadecimal number systems and compare with Decimal system.
	2nd	1.1 Binary, Octal, Hexadecimal number systems and compare with Decimal system
	3rd	1.1 Binary, Octal, Hexadecimal number systems and compare with Decimal system
	4th	1.2 Binary addition, subtraction, Multiplication and Division.
	5th	1.3 1‘s complement and 2‘s complement numbers for a binary number
2nd	1st	1.4 Subtraction of binary numbers in 2‘s complement method.
	2nd	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.
	3rd	1.6 Importance of parity Bit.
	4th	1.7 Logic Gates: AND, OR, NOT, NAND, NOR and EX-OR gates with truth table.
	5th	1.7 Logic Gates: AND, OR, NOT, NAND, NOR and EX-OR gates with truth table.
3rd	1st	1.8 Realize AND, OR, NOT operations using NAND, NOR gates.
	2nd	1.9 Different postulates and De-Morgan‘s theorems in Boolean algebra.
	3rd	1.10 Use Of Boolean Algebra For Simplification Of Logic Expression
	4th	1.11 Karnaugh Map For 2,3,4 Variable, Simplification Of SOP And POS Logic Expression Using K-Map.
	5th	1.11 Karnaugh Map For 2,3,4 Variable, Simplification Of SOP And POS Logic Expression Using K-Map.

4th	1st	**2. COMBINATIONAL LOGIC CIRCUITS** 2.1 Give the concept of combinational logic circuits.
	2nd	2.2 Half adder circuit and verify its functionality using truth table.
	3rd	2.2 Half adder circuit and verify its functionality using truth table.
	4th	2.3 Realize a Half-adder using NAND gates only and NOR gates only.
	5th	2.4 Full adder circuit and explain its operation with truth table.
5th	1st	2.4 Full adder circuit and explain its operation with truth table.
	2nd	2.5 Realize full-adder using two Half-adders and an OR – gate and write truth table
	3rd	2.6 Full subtractor circuit and explain its operation with truth table.
	4th	2.6 Full subtractor circuit and explain its operation with truth table.
	5th	**2.7 Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer**
6th	1st	2.7 Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer
	2nd	2.8 Working of Binary-Decimal Encoder & 3 X 8 Decoder.
	3rd	2.8 Working of Binary-Decimal Encoder & 3 X 8 Decoder.
	4th	2.9 Working of Two bit magnitude comparator.
	5th	2.9 Working of Two bit magnitude comparator.
7th	1st	3. SEQUENTIAL LOGIC CIRCUITS 3.1 Give the idea of Sequential logic circuits.
	2nd	3.2 State the necessity of clock and give the concept of level clocking and edge triggering,
	3rd	3.3 Clocked SR flip flop with preset and clear inputs.
	4th	3.5 Construct level clocked JK flip flop using S-R flip-flop and explain with truth table
	5th	3.6 Concept of race around condition and study of master slave JK flip flop.
8th	1st	3.7 Give the truth tables of edge triggered D and T flip flops and draw their symbols.
	2nd	3.8 Applications of flip flops. 3.9 Define modulus of a counter
	3rd	3.10 4-bit asynchronous counter and its timing diagram.
	4th	3.10 4-bit asynchronous counter and its timing diagram.
	5th	3.11 Asynchronous decade counter.

9th	1st	3.12 4-bit synchronous counter.
	2nd	3.13 Distinguish between synchronous and asynchronous counters.
	3rd	3.14 State the need for a Register and list the four types of registers.
	4th	3.15 Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop.
	5th	3.15 Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop.
10th	1st	4. 8085 MICROPROCESSOR 4.1 Introduction to Microprocessors, Microcomputers
	2nd	4.2 Architecture of Intel 8085A Microprocessor and description of each block.
	3rd	4.2 Architecture of Intel 8085A Microprocessor and description of each block.
	4th	4.2 Architecture of Intel 8085A Microprocessor and description of each block.
	5th	4.3 Pin diagram and description.
11th	1st	4.3 Pin diagram and description.
	2nd	4.3 Pin diagram and description.
	3rd	4.4 Stack, Stack pointer & stack top
	4th	4.5 Interrupts
	5th	4.6 Opcode & Operand,
12th	1st	4.7 Differentiate between one byte, two byte & three byte instruction with example.
	2nd	4.8 Instruction set of 8085 example
	3rd	4.9 Addressing mode
	4th	4.9 Addressing mode
	5th	4 .10 Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
	1st	4.11 Timing Diagram for memory read, memory write, I/O read, I/O write

13th	2nd	4.11 Timing Diagram for memory read, memory write, I/O read, I/O write
	3rd	4.12 Timing Diagram for 8085 instruction
	4th	4.13 Counter and time delay.
	5th	4. 14 Simple assembly language programming of 8085.
14th	1st	5. INTERFACING AND SUPPORT CHIPS 5.1 Basic Interfacing Concepts, Memory mapping & I/O mapping
	2nd	5.1 Basic Interfacing Concepts, Memory mapping & I/O mapping
	3rd	5.1 Basic Interfacing Concepts, Memory mapping & I/O mapping
	4th	5.2 Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	5th	5.2 Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
15th	1st	5.2 Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	2nd	5.2 Functional block diagram and description of each block of Programmable peripheral interface Intel 8255
	3rd	5.3 Application using 8255: Seven segment LED display, Square wave generator, Traffic light Controller
	4th	5.3 Application using 8255: Seven segment LED display, Square wave generator, Traffic light Controller
	5th	5.3 Application using 8255: Seven segment LED display, Square wave generator, Traffic light Controller