

LESSON PLAN

Session :: **Winter – 2022**
Course Type :: **Theory**
Semester/Branch :: **5th Semester, Electrical Engineering**
Subject (with code) :: **Digital Electronics & Microprocessor (TH3)**
Contact hours/week :: **5 hours**
Name of Faculty :: **Dr. Binodini Tripathy**

| SL. No. | CLAS S ID | COURSE CONTENT | MODE OF DELIVERY | EXHIBIT/ REFERENCE |
|---------|-----------|---|------------------|---|
| 1 | 1 | Unit-1: Basics of Digital Electronics NumberSystem-Binary, Octal, Decimal, Hexadecimal | Lecture | Study material |
| 2 | 2 | Conversion from one system to another number system | Lecture | Study material |
| 3 | 3 | Arithmetic Operation- Addition, Subtraction, Multiplication, Division | Video | Study material |
| 4 | 4 | 1's & 2's complement of Binary numbers& Subtraction using complements method | Video class | Study material |
| 5 | 5 | Digital Code & its application & distinguish between weighted & non-weight Code | Lecture | Study material |
| 6 | 6 | Binary codes, excess-3 and Gray codes | Lecture | Study material |
| 7 | 7 | Class Test-1, Assignment -1 | On line/Off line | |
| 8 | 8 | Logicgates: AND,OR,NOT,NAND,NO R, Exclusive-OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram | PPT presentation | Study material https://youtu.be/KergVtV3SxU |
| 9 | 9 | Universal Gates& its Realisation | Lecture | Study material https://youtu.be/KergVtV3SxU |

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| 10 | 10 | Boolean algebra, Boolean expressions, Demorgan's Theorems | Lecture | Personal video link/Study material https://youtu.be/EznCqZ1eh5Q |
| 11 | 11 | Represent Logic Expression: SOP & POS forms | Lecture | https://youtu.be/gqv2t7YzPRwStudy material |
| 12 | 12 | Karnaugh map (3 & 4 Variables)&Minimization of logical expressions | Lecture | https://youtu.be/EznCqZ1eh5Q Study material |
| 13 | 13 | Karnaugh map (3 & 4 Variables)&Minimization of logical expressions, don't care conditions | Lecture | Study material |
| 14 | 14 | Revision, Quiz Test-1 | ON line/Off line | |
| 15 | 15 | Unit-2: Combinational logic circuits Half adder, Full adder, Serial and Parallel Binary 4 bit adder | Video+PPT | Study material https://youtu.be/B3Tf4ZZ41EM |
| 16 | 16 | Half & Full Subtractor | Video+PPT | https://youtu.be/B3Tf4ZZ41EM |
| 17 | 17 | Multiplexer(4:1) | Lecture | Study material/ https://youtu.be/OrZgp0SAUFQ |
| 18 | 18 | DeMultiplexer(1:4) | PPT | Study material |
| 19 | 19 | Decoder, Encoder | PPT | Study material |
| 20 | 20 | Digital comparator | Lecture | Study material |
| 21 | 21 | Seven segment Decoder | Lecture | Study material |
| 22 | 22 | Class Test-2, Assignment-2, Review | On line/Off line | |
| 23 | 23 | Unit-3: Sequential logic Circuits Principle of flip-flops operation, its Types | Lecture | Study material |
| 24 | 24 | SR Flip Flop using NAND,NOR Latch (un clocked) | Lecture | Study material |
| 25 | 25 | Quiz Test-2 | On line/Off line | |
| 26 | 26 | C l o c k e d SR, D FF | Lecture | Study material |
| 29 | 29 | | Lecture | Study material |
| 27 | 27 | JK, T FF,JK Master Slave flip-flops-Symbol, logic Circuit, truth table and applications | Lecture | Study material |
| 28 | 28 | Concept of Racing and how it can be avoided | Lecture | Study material |
| 29 | 29 | Shift Registers-Serial in Serial –out Serial- in Parallel-out, | Video | https://youtu.be/Iecj9xmIfXM Study material |

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| 30 | 30 | Parallel in serial out and Parallel in parallel out | Video | https://youtu.be/Iecj9xmIfXM Study material |
| 31 | 31 | Universal shift registers- Applications | Video | Study material |
| 32 | 32 | Types of Counter & applications | Lecture | Study material https://youtu.be/LHAbLXfRYXk |
| 33 | 33 | Class Test-3, Assignment-3, Revision | On line/Off line | |
| 34 | 34 | Binary counter, Asynchronous ripple counter, Decade counter | PPT | Study material https://youtu.be/LHAbLXfRYXk |
| 35 | 35 | Synchronous counter | PPT+Lecture | Study material |
| 36 | 36 | Synchronous counter, Ring Counter | PPT+Lecture | Study material |
| 37 | 37 | Doubt clearing and revision | ON line/Off line | |
| 38 | 38 | Unit -4: 8085 Microprocessor Introduction to microprocessor, microcomputer | Lecture | Study material |
| 39 | 39 | Architecture of Intel 8085A description of each block | Lecture | Study material https://youtu.be/hwwhsNOqqm8 - 8085 |
| 40 | 40 | Architecture of Intel 8085A description of each block Pin diagram and description, | Lecture | Study material https://youtu.be/hwwhsNOqqm8 - 8085 |
| 41 | 41 | Revision and doubt clearing | ON line/Off line | |
| 42 | 42 | Stack | Lecture | Study material |
| 43 | 43 | Class Test-4, Discussion on council questions | ON line/Off line | |
| 44 | 44 | Interrupts, Opcode & operand | Lecture | Study material |
| 45 | 45 | Quiz Test-3, MCQ discussion | On line/Off line | |
| 46 | 46 | Difference between one byte, two byte three byte instruction with example | Lecture | Study material https://youtu.be/hwwhsNOqqm8 - 8085 |
| 47 | 47 | Instruction set of 8085 microprocessor | Lecture | Study material |
| 48 | 48 | Instruction set of 8085 microprocessor | Lecture | Study material |
| 49 | 49 | Addressing mode, Fetch cycle, machine cycles, instruction cycle, T-state | Lecture | Study material |

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| 50 | 50 | Revision (Q/A Discussion) | | |
| 51 | 51 | Timing diagram of memory read, write, I/O read write, Timing diagram of 8085 instruction | Lecture | Study material |
| 52 | 52 | Counter and time delay, Simple Assembly language programming | Lecture | Study material |
| 53 | 53 | Revision, Doubt clearing | | |
| 54 | 54 | Unit-5:Interfacing and Support Chip Basic interfacing concepts, Memory mapping,I/O mapping | Lecture | Study material |
| 55 | 55 | Functional block diagram of Intel 8255, Description of each block of Intel 8255,Application using 8255 | Lecture | Study material https://youtu.be/_M8hDkRAL6M |
| 56 | 56 | Seven segment display | Lecture | Study material |
| 57 | 57 | Square wave generator | Lecture | Study material |
| 58 | 58 | Traffic light controller | Lecture | Study material |
| 59 | 59 | Question Bank discussion Review | ON line/Off line | |
| 60 | 60 | Question Bank discussion Review | ON line/Off line | |

Signature of Concern Teacher