4TH SEMESTER E&TC ENGG. TIME TABLE-2024(SUMMER)

DAY/TIME	09:45-10:35	10:35 - 11:25	11:25 - 12:15	12:15 - 1:05	1:05 - 1:45	1:45-02:35	2:35-3:25	3:25-4:15
MON	AE&LIC	DC&CN	EM	MP&MC	L	ELECTRICAL MACHINE- LAB		
TUE	AE&LIC	DC&CN	EM	MP&MC	A	EM LAB	MP&MC LAB	
WED	DC&CN	AE&LIC	EM	MP&MC	U	SCA	AE&LINEAR IC LAB	
THUR	DC&CN	AE&LIC	EM	MP&MC	N	MP&MC LAB		NETWORKING LAB
FRI	SCA	MP&MC	AE&LINEAR IC LAB		C	NETWORKING LAB		
SAT	AE&LIC	SCA	TECHNICAL SEMINAR		H			

THEORY	LAB
TH-1:EM- BASTA HANSDAH	Pr-1: EM LAB-BASTA HANSDAH
TH-2:DC&CN-MAMINA MAJHI	Pr-2: NETWORKING LAB-S.SOY/JP GHOSH
TH-3:MP&MC-SK MINAZ KADERI	Pr-3: MP&MC LAB-SK MINAZ KADERI
TH-4:AE&LINEAR IC-TAPAS KUMAR NAYAK	Pr-4: AE&LIC LAB-TAPAS KUMAR NAYAK
	Pr-5:TECHNICAL SEMINAR:ALL STAFF
	SCA-ALL STAFF

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LESSON PLAN

BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGG.	SESSION:SUMMER-2024	SEMESTER:4TH
NAME OF FACULTY:BASTA HANSDAH	SUBJECT: ELECTRICAL MACHINE(TH-1)	
NO OF CLASSES/WEEK GIVEN AS PER SYLLABUS=04	DATE OF SEMESTER STARTING 16/01/2024	DATE OF SEMESTER CLOSING
NO OF CLASSES/WEEK GIVEN AS PER TIME TABLE=04	TOTAL NOS OF WORKING DAYS AS PER SCTE&VT:	

SL.NO	CHAPTER	NAME OF THE TOPIC	AS PER SYLLABUS NUMBER OF CLASSES ALLOTED	AS PER PLAN NO. OF CLASSES REQUIRED TO COMPLETE	DETAILS CONTENTS OF THIS CHAPTER
1	1	ELECTRICAL MATERIAL	3	3	1.1 Properties & uses of different conducting material. 1.2 Properties & use of various insulating materials used electrical engineering. 1.3 Various magnetic materials & their uses.
2	2	DC GENERATOR	7	7	2.1 Construction, Principle & application of DC Generator. 2.2 Classify DC generator including voltage equation. 2.3 Derive EMF equation & simple problems. 2.4 Parallel operation of DC generators.
3	3	DC MOTOR	10	10	3.1 Principle of working of a DC motor. 3.2 Concept of development of torque & back EMF in DC motor including simple problems. 3.3 Derive equation relating to back EMF, Current, Speed and Torque equation 3.4 Classify DC motors & explain characteristics, application. 3.5 Three point & four point stator/static of DC motor by solid State converter. 3.6 Speed of DC motor by field control and armature control method. 3.7 Power stages of DC motor & derive Efficiency of a DC motor.
4	4	AC CIRCUITS	8	8	4.1 Mathematical representation of phasors, significant of operator "J" 4.2 Addition, Subtraction, Multiplication and Division of phasor quantities. 4.3 AC series circuits containing resistance, capacitances, Conception of active, Reactive and apparent power and Q-factor of series circuits & solve related problems. 4.4 Find the relation of AC Parallel circuits containing Resistances, Inductance and Capacitances Q-factor of parallel circuits.

5	5	TRANSFORMER	10	10	5.1 Ideal transformer. 5.2 Construction & working principle of transformer 5.3 Derive of EMF equation of transformer, voltage transformation ratio. 5.4 Discuss Flux, Current, EMF components of transformer and their phasor diagram under no load Condition. 5.5 Phasor representation of transformer flux, current EMF primary and secondary Voltages under loadedcondition. 5.6 Types of losses in Single Phase (1-ø) Transformer. 5.7 Open circuit & short-circuit test (simple problems) 5.8 Parallel operation of Transformer. 5.9 Auto Transformer
6	6	INDUCTION MOTOR	7	7	6.1 Construction feature, types of three-phase induction motor. 6.2 Principle of development of rotating magnetic field in the stator. 6.3 Establish relationship between synchronous speed, actual speed and slip of induction motor. 6.4 Establish relation between torque, rotor current and power factor. 6.5 Explain starting of an induction motor by using DOL and Star-Delta stator. State industrial use of induction motor.
7	7	SINGLE PHASE INDUCTION MOTOR	6	6	7.1 Construction features and principle of operation of capacitor type and shaded pole type of single-phase induction motor. 7.2 Explain construction & operation of AC series motor. 7.3 Concept of alternator & its application.

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LESSON PLAN

BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGG.	**SESSION:SUMMER-2024**	**SEMESTER:4TH**
NAME OF FACULTY:MAMINA MAJHI	**SUBJECT: DATA COMMUNICATION & COMPUTER NETWORK(TH-2)**	
NO OF CLASSES/WEEK GIVEN AS PER SYLLABUS=04	**DATE OF SEMESTER STARTING** 16/01/2024	**DATE OF SEMESTER CLOSING**
NO OF CLASSES/WEEK GIVEN AS PER TIME TABLE=04	**TOTAL NOS OF WORKING DAYS AS PER SCTE&VT:**	

SL.NO	CHAPTER	NAME OF THE TOPIC	AS PER SYLLABUS NUMBER OF CLASSES ALLOTED	AS PER PLAN NO. OF CLASSES REQUIRED TO COMPLETE	DETAILS CONTENTS OF THIS CHAPTER
1	1	NETWORK& PROTOCOL	8	8	1.1 Data Communication 1.2 Networks 1.3 Protocol & Architecture, Standards, OSI, TCP/IP
2	2	DATA TRANSMISSION & MEDIA	8	8	2.1 Data transmission Concepts and Terminology 2.2 Analog and Digital Data transmission 2.3 Transmission impairments, Channel capacity 2.4 Transmission media, Guided Transmission, Wireless Transmission
3	3	DATA ENCODING	8	8	3.1 Data encoding, 3.2 Digital data digital signals, 3.3 Digital data analog signals 3.4 Analog data digital signals 3.5 Analog data analog signals
4	4	DATA COMMUNICATIO N & DATA LINK CONTROL	8	8	4.1 Asynchronous and Synchronous Transmission 4.1 Error Detection 4.3 Line configuration 4.4 Flow Control, 4.5 Error Control 4.6 Multiplexing 4.7 FDM synchronous TDM 4.8 Statistical TDM
5	5	SWITCHING & ROUTING	10	10	5.1 Circuit Switching networks 5.2 Packet Switching principles 5.3 X.25 5.4 Routing in Packet switching 5.5 Congestion 5.6 Effects of congestion, congestion control 5.7 Traffic Management 5.8 Congestion Control in Packet Switching Network.

6	6	LAN TECHNOLOGY	10	10	6.1. Topology and Transmission Media 6.2 LAN protocol architecture 6.3. Medium Access control 6.4 Bridges, Hub, Switch 6.5 Ethernet (CSMA/CD), Fiber Channel 6.6 Wireless LAN Technology
7	7	TCP/IP	8	8	7.1 TCP/IP Protocol Suite 7.2 Basic Protocol functions 7.3 Principles of Internetworking 7.3 Internet Protocol operations 7.4 Internet Protocol

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LESSON PLAN

BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGG.	SESSION:SUMMER-2024	SEMESTER:4TH
NAME OF FACULTY:SK MINAZ KADERI	SUBJECT: MICROPROCESSOR & MICROCONTROLLER(TH-3)	
NO OF CLASSES/WEEK GIVEN AS PER SYLLABUS=05	DATE OF SEMESTER STARTING 16/01/2024	DATE OF SEMESTER CLOSING
NO OF CLASSES/WEEK GIVEN AS PER TIME TABLE=05	TOTAL NOS OF WORKING DAYS AS PER SCTE&VT:	

SL.NO	CHAPTER	NAME OF THE TOPIC	AS PER SYLLABUS NUMBER OF CLASSES ALLOTED	AS PER PLAN NO. OF CLASSES REQUIRED TO COMPLETE	DETAILS CONTENTS OF THIS CHAPTER
1	1	Microprocessor(Architecture and Programming-8085(8-bit))	15	15	1.1 Introduction to Microprocessor and Microcomputer & distinguish between them. 1.2 Concept of Address bus, Data bus, Control bus & System Bus 1.3 General Bus structure Block diagram. 1.4 Basic Architecture of 8085 (8 bit) Microprocessor 1.5 Signal Description (Pin diagram) of 8085 Microprocessor 1.6 Register Organizations,Distinguish between SPR & GPR, Timing & Control Module, 1.7 Stack, Stack pointer &Stack top. 1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)
2	2	Instruction Set and Assembly Language Programming(8 bit)	15	15	2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples. 2.2 Addressing modes in instructions with suitable examples. 2.3 Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control) 2.4 Simple Assembly Language Programming of 8085 2.4.1 Simple Addition & Subtraction 2.4.2 Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits 2.4.3 Counters & Time delay (Single Register, Register Pair, More than Two Register) 2.4.4 Looping, Counting & Indexing (Call/JMP etc). 2.4.5 Stack & Subroutine programes. 2.4.6 Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer. 2.4.7 Compare between two numbers 2.4.8 Array Handling (Largest number & smallest number in the array) 2.5 Memory & I/O Addressing,
3	3	TIMING DIAGRAMS	8	8	3.1 Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram. 3.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle. 3.3 Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA Instruction).

4	4	Microprocessor Based System Development Aids	10	10	4.1 Concept of interfacing 4.2 Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping 4.3 Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories 4.4 Concept of Address decoding for I/O devices 4.5 Programmable Peripheral Interface: 8255 4.6 ADC & DAC with Interfacing. 4.7 Interfacing Seven Segment Displays 4.8 Generate square waves on all lines of 8255 4.9 Design Interface a traffic light control system using 8255. 4.10 Design interface for stepper motor control using 8255. 4.11 Basic concept of other Interfacing DMA controller,USART
5	5	Microprocessor (Architecture and Programming-8086-16 bit)	12	12	5.1 Register Organisation of 8086 5.2 Internal architecture of 8086 5.3 Signal Descriptionof 8086 5.4 General Bus Operation& Physical Memory Organisation 5.5 MinimumMode&Timings, 5.6 Maximum Mode&Timings, 5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt 5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators, 5.9 Simple Assembly language programmingusing 8086 instructions.
6	6	Microcontroller (Architecture and Programming-8 bit)	15	15	6.1 Distinguish between Microprocessor & Microcontroller 6.2 8 bit & 16 bit microcontroller 6.3 CISC & RISC processor 6.4 Architectureof8051Microcontroller 6.5 Signal Descriptionof8051Microcontrollers 6.6 Memory Organisation-RAM structure, SFR 6.7 Registers,timers,interruptsof8051Microcontrollers 6.8 Addressing Modes of 8051 6.9 Simple 8051 Assembly Language ProgrammingArithmetic & Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port Programming 6.10 Interrupts, Timer & Counters 6.11 Serial Communication 6.12 Microcontroller Interrupts and Interfacing to 8255

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LESSON PLAN

BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGINEERING	SESSION:SUMMER-2024	SEMESTER:4TH
NAME OF FACULTY:TAPAS KUMAR NAYAK	SUBJECT: ANALOG ELECTRONICS & LINEAR IC(TH-4)	
NO OF CLASSES/WEEK GIVEN AS PER SYLLABUS=05	DATE OF SEMESTER STARTING 16/01/2024	DATE OF SEMESTER CLOSING
NO OF CLASSES/WEEK GIVEN AS PER TIME TABLE=05	TOTAL NOS OF WORKING DAYS AS PER SCTE&VT:	

SL.NO	CHAPTER	NAME OF THE TOPIC	AS PER SYLLABUS NUMBER OF CLASSES ALLOTED	AS PER PLAN NO. OF CLASSES REQUIRED TO COMPLETE	DETAILS CONTENTS OF THIS CHAPTER
1	1	DIODE, TRANSISTORS AND CIRCUITS	10	10	1.1 Working principle, of Diode & its current equation, Specification anduse of p-n junction diode. 1.2 Breakdown of diode (Avlance&Zener Breakdown) and Construction, working, Characteristics 1.3 Classification of Rectifiers and working of different types of Rectifiers- Half-Wave Rectifier, Full-Wave Rectifier (CT & BRIDGE type) 1.4 Working principle of p-n-p and n-p-n transistor, different types of transistor connection (CB, CE and CC)& input and output characteristics of transistor in different connections. 1.5 Define ALPHA, BETA and GAMMA of transistors in various modes. Establish the Mathematical relationship between them. 1.6 Basic concept of Biasing, Types of Biasing,h-parameter model of BJT,load line (AC &DC) and determine the Q-point. 1.7 Types of Coupling, working principle and use of R-C Coupled Amplifier & Frequency Responses of R-C coupled Amplifier & draw the curve.
2	2	AUDIO POWER AMPLIFIERS.	8	8	2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples. 1.1 Classify Power Amplifier &Differentiate between Voltage and Power Amplifier. 1.2 Working principle of different types of Power Amplifier (Class-A, Class-AB, Class-B and Class-C & Class D amplifier). 1.3 Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
3	3	FIELD EFFECT TRANSISTOR (FET).	10	10	3.1 FET & its classifications &Differentiate between JFET & BJT. 3.2 Construction, working principle & characteristics of JEFT &Explain JEFT as an amplifier, parameters of JFET & Establish relation among JFET parameters. 3.3 Construction & working principle MOSFET & its classification & characteristics (Drain & Transfer) 3.4 Explain the operation of CMOS, VMOS & LDMOS.

4	4	FEED BACK AMPLIFIER & OSCILLATOR	8	8	4.1 Define & classify Feedback Amplifier, principle of negative feedback with the help of block diagram, Types of feedback – negative &positive feedback. 4.2 Types of negative feedback – voltage shunt, voltage series, current shunt& current series and characteristics voltage gain, bandwidth , input Impedance output impedance, stability, noise , distortion in amplifiers. 4.3 Oscillator -block diagram of sine wave oscillator ,Types Requirement of oscillationBarkhausen criterion 4.4 RC oscillators – RC phase shift ,Crystal, LC oscillators – Colpitts , Hartley & Wien Bridge Oscillators :Circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability
5	5	TUNED AMPLIFIER & WAVE SHAPING CIRCUIT	12	12	5.1 Defined and classify Tuned amplifier, Explain parallel Resonant circuit, Resonance Curve & sharpness of Resonance. 5.2 working principle of Single tuned Voltage& Double tuned Amplifier & its limitation 5.3 Different type of Non-linear circuits - Clipper, diode series &shunt, positive& negative biased & unbiased and combinational clipper clippers circuit & its application. 5.4 Different type of Clamper circuit (positive & negative clampers) & its application. 5.5 Working of Astable, Monostable & BistableMultivibrator with circuit diagram. 5.6 Working& use of Integrator and Differentiator circuit using R- C circuit(Linear), input / output waveforms & frequency response.
6	6	OPERATIONAL AMPLIFIER CIRCUITS & FEEDBACK CONFIGURATIONS	14	14	6.1 Distinguish between Microprocessor & Microcontroller 6.1 Differential amplifier & explain its configuration &significance. 6.2 Block diagram representation of a typical Op- Amp, its equivalent circuits and draw the schematic symbol 6.3 Discuss the types of integrated circuits manufacturer's designations of ICs, Package types, pin identification and temperature and ordering information. 6.4 Define the following electrical characteristics input offset voltage, input offset current, CMMR, Large signal voltage gain, Slew rate . 6.5 Draw and explain the Open Loop configuration (inverting, non-inverting Amplifier) 6.6 Draw the circuit diagram of the voltage series feedback amplifier and derive the close loop Voltage gain, gain of feedback circuits input resistance, and output resistance, bandwidth and total output offset voltage with feedback. 6.7 Draw the circuit diagram of the voltage shunt feedback amplifier and derive the close loop, Voltage gain, gain of feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback.

7	7	APPLICATION OF OPERATIONAL AMPLIFIER, TIMER CIRCUITS & IC voltage regulator	13	13	7.1 Discuss the summing scaling and averaging of inverting and non-inverting amplifiers 7.2 DC & AC Amplifies using OP-AMP. 7.3 Integrator and differentiator using op-amp. 7.4 Active filter and describe the filter design of fast order low Pass Butterworth 7.5 Concept of Zero-Crossing Detector using Op-Amp 7.6 Block diagram and operation of IC 555 timer &IC 565 PLL& its applications. 7.7 Working of Current to voltage Convertor using Operational Amplifier 7.8 Working of the Voltage to Frequency Convertor using Operational Amplifier. 7.9 Working of the Frequency to Voltage Conversion using Operational Amplifier. 7.10 Operation of power supply using 78XX and 79XX,LM 317 Series with their PIN configuration 7.11 Functional block diagram & Working of IC regulator LM 723 & LM 317

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