6TH 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	DSP	CS&C	RES	ACE	L	COMPUTER HARDWARE LAB		
TUE	DSP	CS&C	RES	ACE	A	ADVANCE COMMUNICATION ENGG.LAB		
WED	DSP	CS&C	RES	ACE	U	MATLAB & PROCESSING SIMULATION LAB		
THUR	DSP	CS&C	RES	ACE	N	Project Phase-II		
FRI	ACE	SCA	PLC & AUTOMATION LAB		C	Life Skill	Project Phase-II	
SAT	SCA	Life Skill	PLC & AUTOMATION LAB		H			

THEORY	LAB
TH-1:ACE-TAPAS KU. NAYAK	Pr-1: ACE Lab-TAPAS KU.NAYAK
TH-2:CS&C-SK MINAZ KADERI	Pr-2: COMPUTER HARDWARE Lab-J.P Ghosh/Mamina Majhi
TH-3:DSP-BASTA HANSDAH	Pr-3: MATLAB &PROCESSING Lab-SK MINAZ KADERI
TH-4:RES-TAPASWINI BEHERA	Pr-4:PLC & AUTOMATION Lab-BASTA HANSDAH
	Pr-5:PROJECT Phase-II-ALL STAFF
	Pr-6:LIFE SKILL-SUMAN MOHANTY

SSB REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY,CHITRADA,MAYURBHANJ

LESSON PLAN

BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGG.	SESSION:SUMMER-2024	SEMESTER:6TH
NAME OF FACULTY:TAPAS KUMAR NAYAK	SUBJECT: ADVANCE COMMUNICATION ENGINEERING (TH-1)	
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	RADAR & NAVIGATION AIDS	10	10	1.1 Basic Radar, advantages & applications 1.2 Working principle of Simple Radar system , its types 1.3 Radar range equation &Performance factor of radar. 1.4 Working principle of Pulsed Radar system. 1.5 Function of radar indication and Working principle of moving target indicator. 1.6 Define Doppler effect&Working principle of C.WRadar. 1.7 Radar aids to Navigation 1.8 MTI Radar- working principle 1.8 Aircraft landing system. 1.9 Navigation Satellite System.(NAVSAT) & GPS System
2	2	SATELLITE COMMUNICATION	15	15	2.1 Basic Satellite Transponder & Kepler's Laws 2.2 Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories 2.3 Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage 2.4 Working of the Satellite sub system 2.5 Satellite frequency allocation and frequency bands. 2.6 General structure of satellite Link system (Uplink, Down link,Transponder, Crosslink) 2.7 Working principle of direct broadcast system (DBS) 2.8 Working principle of VSAT system. 2.9 Define multiple accessing & name various types. 2.10 Time Division Multiple Accessing(TDMA) & Code Divisien Multiple Accessing (CDMA) — block diagram, its advantages & dis-advantages. 2.11 Satellite Application- Communication Satellite(MSAT), Digita Satellite Radio. 2.12 Working principle of GPS Receiver & Transmitter& applications. 2.13 Optical Satellite Link transmitter & Receiver

3	3	OPTICAL FIBER COMMUNICATION	15	15	3.1 Basic principle of Optical communication. 3.2 Compare the advantage and disadvantage of optical fibres&metallic cables 3.3 Electromagnetic Frequency and wave line spectrum 3.4 Types of optical fibres&principles of propogation in a fibre using Ray Theory 3.5 Optical fiber construction 3.6 Define terms: Velocity of propagation, Critical angle, Acceptance angle numerical aperture 3.7 Optical fibre communication system- block diagram & working principle 3.8 Modes of propagation and index profile of optical fiber 3.9 Types optical fiber configuration: Single-mode step index, Multi-modestep index, Multi-mode Graded index 3.10 Attenuation in optical fibers — Absorption losses, scattering, losses,bending losses, core and cladding losses- Dispersion — materialDispersion, waveguide dispersion, Intermodal dispersion 3.11 Optical sources(Transmitter) & types — LED-semiconductor laser diodes 3.12 LASER -its working principles, block diagram using laser feedback control circuit 3.13 Optical detectors — PIN and APD diodes &Blockdiagram using APD Connectors and splices —Optical cables - Couplers 3.14 Optical repeater & Single Channel system 3.15 Applications of optical fibres - civil, Industry and Military application 3.16 Concept of Wave Length Division Multiplexing (WDM)
4	4	TELECOMMUNICATION SYSTEM	10	10	4.1 Working of Electronic Telephone System. (Telephone Set) 4.2 Function of switching system.& Call procedures 4.3 Space and time switching. 4.4 Numbering plan of telephone networks (National Schemes & International Numbering) 4.5 Working principle of a PBX & Digital EPABX. 4.6 Units of Power Measurement. 4.7 Working principle of Internet Protocol Telephone 4.8 Working principle of Internet Telephone
5	5	Data Communication	10	10	5.1 Basic concept of Data Communication 5.2 Architecture, Protocols and Standards 5.3 Data Communication Circuits 5.4 Types of Transmission & Transmission Modes 5.5 Data Communication codes 5.6 Basic idea of Error control & Error Detection 5.7 MODEM & its basic block diagram& common features Voice Band Modem

6	6	WIRELESS COMMUNICATION	15	15	6.1 Basic concept of Cell Phone,frequency reuse channel assignment strategic handoff co-channel Interference and system capacity of a Cellular Radiosystems. 6.2 Concept of improving coverage and capacity in cellular system (Cell Splitting,Sectoring) 6.3 Wireless Systems and its Standards. 6.4 Discuss the GSM (Global System for Mobile j service and features. 6.5 Architecture of GSM system & GSM mobile station &channel types of GSMsystem. 6.6 working of forward and reveres CDMA channel,the frequency and channelspecifications 6.7 Architecture and features of GPRS. 6.8 Discuss the mobile TCP, IP protocol. 6.9 Working of Wireless Application Protocol (WAP). 6.10 Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network. 6.11 Smart Phone and discuss its features indicate through Block diagram.

Sign.Of Staff

Sign.Of H.O.D

Sign.Of Principal

SSB REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY,CHITRADA,MAYURBHANJ					
LESSON PLAN					
BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGG.				SESSION:SUMMER-2024	SEMESTER:6TH
NAME OF FACULTY:SK MINAZ KADERI				SUBJECT: CONTROL SYSTEMS & COMPONENT(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	FUNDAMENTAL OF CONTROL SYSTEM	5	5	1.1 Classification of Control system 1.2 Open loop system & Closed loop system and its comparison 1.3 Effects of Feed back 1.4 Standard test Signals(Step, Ramp, Parabolic, Impulse Functions) 1.5 Servomechanism 1.6 Regulators (Regulating systems)
2	2	TRANSFER FUNCTIONS	8	8	2.1 Transfer Function of a system & Impulse response, 2.2 Properties,Advantages& Disadvantages of Transfer Function 2.3 Poles & Zeroes of transfer Function 2.4 Representation of poles & Zero on the s-plane 2.5 Simple problems of transfer function of network
3	3	CONTROL SYSTEM COMPONENTS & MATHEMATICAL	5	5	3.1 Components of Control System 3.2 Potentiometer, Synchros, Diode modulator & demodulator , 3.3 DC motors, AC Servomotors 3.4 Modelling of Electrical Systems(R, L, C, Analogous systems)
4	4	BLOCK DIAGRAM & SIGNAL FLOW GRAPHS(SFG)	8	8	4.1 Definition of Basic Elements of a Block Diagram 4.2 Canonical Form of Closed loop Systems 4.3 Rules for Block diagram Reduction 4.4 Procedure for of Reduction of Block Diagram 4.5 Simple Problem for equivalent transfer function 4.6 Basic Definition in SFG & properties 4.7 Mason's Gain formula 4.8 Steps foe solving Signal flow Graph 4.9 Simple problems in Signal flow graph for network

5	5	**TIME DOMAIN ANALYSIS OF CONTROL SYSTEMS**	8	8	5.1 Definition of Time, Stability, steady-state response, accuracy, transient accuracy, In-sensitivity and robustness. 5.2 System Time Response 5.3 Analysis of Steady State Error 5.4 Types of Input & Steady state Error(Step ,Ramp, Parabolic) 5.5 Parameters of first order system & second-order systems 5.6 Derivation of time response Specification (Delay time, Rise time, Peak time,Setting time,Peak over shoot)
6	6	**FEEDBACK CHARACTERISTICS OF CONTROL SYSTEMS**	6	6	6.1 Effect of parameter variation in Open loop System & Closed loop Systems 6.2 Introduction to Basic control Action& Basic modes of feedback control: proportional, integral and derivative 6.3 Effect of feedback on overall gain, Stability 6.4 Realisation of Controllers(P, PI,PD,PID) with OPAMP
7	7	**STABILITY CONCEPT, & ROOT LOCUS METHOD**	8	8	7.1 Effect of location of poles on stability 7.2 RouthHurwitz stability criterion. 7.3 Steps for Root locus method 7.4 Root locus method of design(Simple problem)
8	8	**FREQUENCY-RESPONSE ANALYSIS & BODE PLOT**	7	7	8.1 Frequencyresponse,Relationship between time & frequency response 8.2 Methods of Frequency response 8.3 Polar plots & steps for polar plot 8.4 Bodes plot & steps for Bode plots 8.5 Stability in frequency domain, Gain Margin& Phase margin 8.6 Nyquist plots. Nyquiststability criterion. 8.7 Simple problems as above
9	9	**STATE VARIABLE ANALYSIS**	5	5	9.1 Concepts of state, state variable, state model, 9.2 state modelsfor linear continuous time functions(Simple)

Sk. Nadeem

Sign.Of Faculty

Sk. Nadeem

Sign.Of H.O.D

Sign.Of Principal

SSB REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY,CHITRADA,MAYURBHANJ

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

Sk. Kadeer

Sign.Of Faculty

Sk. Kadeer

Sign.Of H.O.D

Sign.Of Principal

SSB REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY,CHITRADA,MAYURBHANJ					
LESSON PLAN					
BRANCH:ELECTRONICS & TELE-COMMUNICATION ENGINEERING				SESSION:SUMMER-2024	SEMESTER:6TH
NAME OF FACULTY:TAPASWINI BEHERA				SUBJECT:RENEWABLE ENERGY SOURCES(TH-4)	
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	Energy Situation and Renewable Energy Sources	5	5	1.1 Renewable and Non-renewable Energy Sources 1.2 Energy and Environment 1.3 Origin of Renewable Energy Sources 1.4 Potential of Renewable Energy Sources 1.5 Direct-use Technology
2	2	Solar Radiation & Collectors	6	6	2.1 Solar Radiation Through Atmosphere 2.2 Terrestrial Solar Radiation 2.3 Measurement of Solar Radiation 2.4 Classification of Solar Radiation Instruments 2.5 Flat Plate Collectors 2.6 Optical Characteristics
3	3	Low-Temperature Applications of Solar Energy.	6	6	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	Passive Space Conditioning & Collectors	7	7	4.1 Principle Space conditioning 4.2 Passive building concepts- Heating, Direct gain, Indirect Gain, Passive Cooling, Shading,Paints, Collings 4.3 Construction of Concentrator 4.4 Energy losses

5	5	Solar Thermal Power Plants	8	8	5.1 Introduction 5.2 Solar Collection System 5.3 Thermal Storage for Solar Power Plants 5.4 Capacity Factor and Solar Multiple 5.5 Energy Conversion
6	6	Solar Photovoltaics	8	8	6.1 Band Theory of Solids, Physical Processes in a Solar Cell , 6.2 Solar Cell Characteristics 6.3 Equivalent Circuit Diagram of Solar Cells 6.4 Cell Types - Crystalline Silicon Solar Cell , Solar Cells for Concentrating Photovoltaic Systems , Dye –sensitized Solar Cell (DSC) 6.5 Solar Module 6.6 Further System Components -Solar inverters ,Mounting Systems,Storage Batteries ,Other System Components 6.7 Grid-independent Systems -System Configuration
7	7	Wind Energy	5	5	7.1 Wind Flow and Wind Direction 7.2 Wind Measurements 7.3 Measurement of Pressure Head 7.4 Hot wire Anemometer 7.5 Cup Anemometer (Robinson's Anemometer) 7.6 Wind Direction Indicators
8	8	Wind Energy Converters	8	8	8.1 Historical Development 8.2 Aerodynamic of Rotor Blade -Wind Stream Profile - Buoyancy Coefficient and the Drag Coefficient 8.3 Components of a Wind Power Plant -Wind Turbine - Tower -Electric Generators –Foundation 8.4 Power Control -Slow Rotors; Poor Control Mechanism - Control of Fast Rotors
9	9	Energy economics:	9	9	9.1 Present worth, Life cycle costing (LCC), Annual Life cycle costing(ALCC), Annual savings. calculations for Solar thermal system 9.2 Solar PV system, 9.3 Wind system, 9.4 Biomass system

Sign.Of Staff

Sign.Of H.O.D

Sign.Of Principal