Vedang Institute of Technology, 2nd Shift

Khurda

Department of Electrical & Electronics Engineering

Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: Sumitra Behera

Semester: 5th

Subject : ANALOG & DIGITAL COMMUNICATION

Session Duration: 2023-24 Classes From: 01/08/2023 To Date: 30/11/2023

Week	Class Day	Topic To Be Covered
1st	1st	CommunicationProcess-ConceptofElementsofCommunicationSystem &itsBlockdiagram
	2nd	
	3rd	Sourceofinformation&CommunicationChannels.
	4th	Classificationof Communicationsystems(Line &WirelessorRadio)
2nd	1st	ModulationProcess,Needofmodulationandclassifymodulationprocess
	2nd	AnalogandDigitalSignals&itsconversion.
	3rd	BasicconceptofSignals&Signalsclassification(AnalogandDigital)
	4th	Bandwidthlimitation
3rd	1st	Amplitudemodulation&derivetheexpressionforamplitudemodulationsignal,powerrelation inAMwave &findModulationIndex.
	2nd	
	3rd	GenerationofAmplitudeModulation(AM)-LinearlevelAMmodulation only
	4th	DemodulationofAMwaves(linerdiodedetector,squarelawdetector&PLL)
4th	1st	ExplainSSBsignalandDSBSC signal
	2nd	Methodsofgenerating &detectionSSB-SCsignal(Indirectmethodonly)
	3rd	
	4th	Methods of generation DSB-SC signal (Ring Modulator) and detection of DSB-SC signal(Synchronousdetection)
5th	1st	
	2nd	ConceptofBalancedmodulators
	3rd	VestigialSideBandModulation
	4th	ConceptofAnglemodulation&itstypes(PM&FM)

6th	1st	BasicprincipleofFrequencyModulation&FrequencySpectrum ofFMSignal.
6th	2nd	ExpressionforFrequencyModulated Signal&Modulation Indexandsidebandof FMsignal
	3rd	ExplainPhasemodulation &differenceofFM&PM)-workingprinciplewith BlockDiagram
	4th	
7th	1st	ComparebetweenAMandFMmodulation(Advantages&Disadvantages)
	2nd	MethodsofFMGeneration(Indirect(Armstrong)methodonly) workingprinciplewithBlockDiagram
	3rd	
	4th	Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)- working principlewith BlockDiagram
8th	1st	
	2nd	ClassificationofRadioReceivers
	3rd	DefinethetermsSelectivity,Sensitivity, FidelityandNoiseFigure
	4th	AMtransmitter-workingprinciplewithBlock Diagram
9th	1st	ConceptofFrequencyconversion,RF amplifier& IFamplifier,Tuning, S/Nratio
	2nd	Workingofsuperheterodyneradioreceiver withBlockdiagram
	3rd	WorkingofFMTransmitter&Receiver with BlockDiagram.
	4th	ConceptofSamplingTheorem,Nyquistrate&Aliasing
10th	1st	SamplingTechniques(Instantaneous,Natural,FlatTop)
	2nd	AnalogPulseModulation-GenerationanddetectionofPAM,PWM&PPMsystemwiththehelpofBlockdiagram&comparisonof allabove.
	3rd	ConceptofQuantizationofsignal&Quantizationerror.
	4th	GenerationofPCMsystem withBlock diagram &itsapplications.
11th	1st	DemodulationofPCMsystem withBlock diagram &itsapplications.
	2nd	Compandingin PCM&Vocoder
	3rd	TimeDivisionMultiplexing&explaintheoperationwithcircuitdiagram.
	4th	Generation&demodulationofDeltamodulationwithBlockdiagram.
12th	1st	Generation&demodulationofDPCMwithBlock diagram.
	2nd	ComparisonbetweenPCM, DM, ADM &DPCM
	3rd	ConceptofMultiplexing(FDM&TDM)-(Basicconcept,Transmitter&Receiver)
	4th	Digitalmodulationformats
13th	1st	Advantagesofdigitalcommunicationsystem overAnalogsystem
	2nd	Digitalmodulationtechniques&types.
	3rd	GenerationandDetectionofbinaryASK, FSK,PSK, QPSK,QAM,MSK,GMSK.
	4th	
14th	1st	WorkingofT1-Carriersystem.
	2nd	SpreadSpectrum &itsapplications

	3rd	WorkingoperationofSpreadSpectrumModulationTechniques(DS-SS&FH-SS).
	4th	Definebit, Baud,symbol& channelcapacityformula.(ShannonTheorems)
15th	1st	ApplicationofDifferentModulationSchemes.
	2nd	Typesof Modem&itsApplication
	3rd	Problem Solving
	4th	

Vedang Institute of Technology, 2nd Shift

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Department of Electrical & Electronics Engineering

Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: S. Sanjay Kumar Patra

Semester: 5th

Subject : DIGITAL ELECTRONICS & MICROPROCESSOR

Session Duration: 2023-24 Classes From: 01/08/2023 To Date: 30/11/2023

Week	Class	Topics to Cover
1st	1st	Binary, Octal, Hexadecimal number systems and compare with Decimal system.
	2nd	Binary addition, subtraction, Multiplication and Division.
	3rd	1‘s complement and 2‘s complement numbers for a binary number
	4th	Subtraction of binary numbers in 2‘s complement method.
2nd	1st	Use of weighted and Un-weighted codes & write Binary equivalent numberfor a number in 8421, Excess-3 and Gray Code and vice-versa.
	2nd	
	3rd	Importance of parity Bit.
	4th	Logic Gates: AND, OR, NOT, NAND, NOR and EX-OR gates with truth table.
3rd	1st	Realize AND, OR, NOT operations using NAND, NOR gates.
	2nd	Different postulates and De-Morgan‘s theorems in Boolean algebra.
	3rd	Use Of Boolean Algebra For Simplification Of Logic Expression
	4th	Karnaugh Map For 2,3,4 Variable, Simplification Of SOP And POS Logic Expression
4th	1st	
	2nd	Using K-Map
	3rd	Give the concept of combinational logic circuits.
	4th	Half adder circuit and verify its functionality using truth table.
5th	1st	Realize a Half-adder using NAND gates only and NOR gates only.
	2nd	Full adder circuit and explain its operation with truth table.
	3rd	Realize full-adder using two Half-adders and an OR – gate and write truth table
	4th	
6th	1st	Full subtractor circuit and explain its operation with truth table.
	2nd	Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer
	3rd	Working of Binary-Decimal Encoder & 3 X 8 Decoder.
6th	4th	Working of Two bit magnitude comparator.

7th	1st	Give the idea of Sequential logic circuits.
	2nd	State the necessity of clock and give the concept of level clocking and edge triggering,
	3rd	Clocked SR flip flop with preset and clear inputs.
	4th	Construct level clocked JK flip flop using S-R flip-flop and explain with truth table
8th	1st	
	2nd	Concept of race around condition and study of master slave JK flip flop.
	3rd	Give the truth tables of edge triggered D and T flip flops and draw their symbols.
	4th	Applications of flip flops.
9th	1st	Define modulus of a counter
	2nd	4-bit asynchronous counter and its timing diagram.
	3rd	Asynchronous decade counter.
	4th	4-bit synchronous counter.
10th	1st	Distinguish between synchronous and asynchronous counters.
	2nd	State the need for a Register and list the four types of registers.
	3rd	Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop
	4th	
11th	1st	Introduction to Microprocessors
	2nd	Introduction to Microcomputers
	3rd	Architecture of Intel 8085A Microprocessor and description of each block.
	4th	Pin diagram and description.
12th	1st	Stack, Stack pointer & stack top
	2nd	Interrupts
	3rd	Opcode & Operand,
	4th	Differentiate between one byte, two byte & three byte instruction.
13th	1st	Instruction set of 8085 example
	2nd	Addressing mode
	3rd	Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
	4th	Timing Diagram for memory read, memory write, I/O read, I/O write
14th	1st	Timing Diagram for 8085 instruction
	2nd	Counter and time delay.
	3rd	Simple assembly language programming of 8085.
	4th	Basic Interfacing Concepts
15th	1st	Functional block diagram and description of each block of Programmable peripheral interfaceIntel 8255
	2nd	Application using 8255: Seven segment LED display
	3rd	Problem Solving
	4th	

Vedang Institute of Technology

Lesson Plan

Discipline : EEE	SEMESTER: 5TH	Name of Teaching Staff: Shubhashree Sahoo
Subject: Entrepreneurship and Management & Smart Technology	No. of days/Per weeks Class Allotted Weeks: 4	Semester from date : 01/08/2023 To Date: 30/11/2023 No. of Weeks : 15

Weeks	Class day	Theory
1ST	1st	Entrepreneurship ,Concept /Meaning of Entrepreneurship Need of Entrepreneurship,Characteristics, Qualities and Types of entrepreneur, Functions
	2nd	Barriers in entrepreneurship, Entrepreneurs vrs. Manager
	3rd	Forms of Business Ownership: Sole proprietorship, partnership forms and others
	4th	Types of Industries, Concept of Start-ups
2ND	1st	Entrepreneurial support agencies at National, State, District Level(Sources): DIC, NSIC,OSIC, SIDBI, NABARD, Commercial Banks, KVIC etc
	2nd	Entrepreneurial support agencies at National, State, District Level(Sources): DIC, NSIC,OSIC, SIDBI, NABARD,Commercial Banks, KVIC etc
	3rd	Technology Business Incubators (TBI) and Scienceand Technology Entrepreneur Parks
	4th	Technology Business Incubators (TBI) and Scienceand Technology Entrepreneur Parks
3RD	1st	Market Survey and Opportunity Identification (Business Planning)
	2nd	Business Planning
	3rd	SSI, Ancillary Units, Tiny Units, Service sector Units
	4th	Time schedule Plan, Agencies to be contacted for Project Implementation
4TH	1st	Assessment of Demand and supply and Potential areas ofGrowth
	2nd	Identifying Business Opportunity
	3rd	Final Product selection
	4th	Project report Preparation
5TH	1st	Preliminary project report
	2nd	Detailed project report, Techno economic Feasibility
	3rd	Project Viability
	4th	Management Principles
6TH	1st	Definitions of management
	2nd	Principles of management
	3rd	Functions of management (planning, organising, staffing, directing and controlling etc.)
	4th	Level of Management in an Organisation
7TH	1st	Functional Areas of Management

	2nd	a) Production management , Functions, Activities , Productivity
	3rd	• Quality control, Production Planning and control
	4th	b) Inventory Management , Need for Inventory management , Models/Techniques of Inventory management
8TH	1st	c) Financial Management, Functions of Financialmanagement
	2nd	• Management of Working capital ,Costing (only concept)
	3rd	• Break even Analysis , Brief idea about Accounting Terminologies: Book Keeping, Journal entry, Petty Cash book, P&L Accounts, Balance Sheets(only Concepts) d) Marketing Management
	4th	Concept of Marketing and Marketing Management Marketing Techniques (only concepts) Concept of 4P s (Price, Place, Product, Promotion)
9TH	1st	e) Human Resource Management Functions of Personnel Management
	2nd	• Manpower Planning, Recruitment, Sources of manpower, Selection process, Method of Testing, Methods of Training& Development, Payment of Wages
	3rd	Leadership and Motivation a) Leadership , Definition and Need/Importance
	4th	• Qualities and functions of a leader, Manager Vs Leader)
10TH	1st	• Style of Leadership (Autocratic, Democratic, Participative
	2nd	b) Motivation , Definition and characteristics, Importanceof motivation , Factors affecting motivation
	3rd	• Theories of motivation (Maslow) , Methods of Improving Motivation
	4th	• Importance of Communication in Business , Typesand Barriers of Communication
11TH	1st	Work Culture, TQM & Safety , Human relationship and Performance in Organization
	2nd	• Relations with Peers, Superiors and Subordinates
	3rd	• TQM concepts: Quality Policy, Quality Management,Quality system
	4th	• Accidents and Safety, Cause, preventive measures,General Safety Rules , Personal Protection Equipment(PPE)
12TH	1st	•Accidents and Safety, Cause, preventive measures,General Safety Rules , Personal Protection Equipment(PPE)
	2nd	Legislation a) Intellectual Property Rights(IPR), Patents, Trademarks, Copyrights
	3rd	a) Intellectual Property Rights(IPR), Patents, Trademarks, Copyrights
	4th	b) Features of Factories Act 1948 with Amendment (only salient points)
13TH	1st	b) Features of Factories Act 1948 with Amendment (only salient points)
	2nd	c) Features of Payment of Wages Act 1936 (only salient points)
	3rd	c) Features of Payment of Wages Act 1936 (only salient points)
	4th	Smart Technology ,Concept of IOT, How IOT works ,
14TH	1st	• Concept of IOT, How IOT works
	2nd	Components of IOT, Characteristics of IOT, Categories of IOT
	3rd	Components of IOT, Characteristics of IOT, Categories ofIOT
	4th	• Applications of IOT- Smart Cities, Smart Transportation,

15TH	1st	Smart Home., Smart Healthcare,
	2nd	Smart Industry, Smart Agriculture,
	3rd	Smart Energy Management etc
	4th	Revision.
Faculty Signature		HoD

Vedang Institute of Technology, 2nd Shift

Khurda

Department of Electrical & Electronics Engineering

Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: S SANJAY KUMAR PATRA

Semester: 5th

Subject : POWER ELECTRONICS AND PLC

Session Duration: 2023-24 Classes From: 01/08/2023 To Date: 30/11/2023

Week	Class Day	Topics to Cover
1st	1st	Construction, Operation, V-I characteristics & application of power diode, SCR,DIAC,TRIAC, Power MOSFET,GTO &IGBT
	2nd	Two transistor analogy of SCR, Gate characteristics of SCR.
	3rd	Numerical related to gate turn on and off of MOSFET,BJT
	4th	Turn on methods of SCR.
2nd	1st	Turn off methods of SCR (Line commutation and Forced commutation)
	2nd	Load Commutation
	3rd	Resonant pulse commutation
	4th	Voltage and Current ratings of SCR.
3rd	1st	Protection of SCR
	2nd	Over voltage protection
	3rd	Over current protection
	4th	Gate protection
4th	1st	Firing Circuits
	2nd	General layout diagram of firing circuit
	3rd	R firing circuits, R-C firing circuit
	4th	UJT pulse trigger circuit, Synchronous triggering (Ramp Triggering)
5th	1st	Design of Snubber Circuits
	2nd	Doubt Clearing and revision
	3rd	Controlled rectifiers Techniques(Phase Angle, Extinction Angle control), Singlequadrant semi converter, two quadrant full converter and dual Converter
	4th	Working of single-phase half wave controlled converter with Resistive and R-Lloads.
6th	1st	Problem Solving and realizing the wave forms.
	2nd	Understand need of freewheeling diode.
6th	3rd	Working of single phase fully controlled converter with resistive and R- L loads.
	4th	Working of three-phase half & fully wave controlled converter with Resistive load
7th	1st	Doubt Clearing and Problem Solving

	2nd	Working of single phase AC regulator.
	3rd	Working principle of step up & step down chopper.
	4th	Control modes of chopper
8th	1st	Operation of chopper in all four quadrants.
	2nd	Classify inverters.
	3rd	Explain the working of series inverter & parallel inverter
	4th	Explain the working of single-phase bridge inverter.
9th	1st	Explain the basic principle of Cyclo-converter.
	2nd	Explain the working of single-phase step up & step down Cyclo-converter.
	3rd	List applications of power electronic circuits.
	4th	List the factors affecting the speed of DC Motors.
10th	1st	Speed control for DC Shunt motor using converter & choper
	2nd	List the factors affecting speed of the AC Motors.
	3rd	Speed control of Induction Motor by using AC voltage regulator.
	4th	Speed control of induction motor by using converters and inverters (V/F control).
11th	1st	Working of UPS with block diagram.
	2nd	Battery charger circuit using SCR with the help of a diagram.
	3rd	Basic Switched mode power supply (SMPS) - explain its working & applications
	4th	Numerical on cyclo-converter
12th	1st	Advantages of PLC
	2nd	Different parts of PLC by drawing the Block diagram and purpose of each part ofPLC.
	3rd	Applications of PLC
	4th	Ladder diagram
13th	1st	Description of contacts and coils in the following states
	2nd	Normally open ii) Normally closed iii) Energized output iv)latched Output v)branching
	3rd	Ladder diagrams for i) AND gate ii) OR gate and iii) NOT gate.
	4th	Ladder diagrams for combination circuits using NAND,NOR, AND, OR and NOT
14th	1st	Timers-i)T ON ii) T OFF and iii)Retentive timer
	2nd	Counters-CTU, CTD
	3rd	Ladder diagrams using Timers and counters
	4th	PLC Instruction set
15th	1st	Ladder diagrams for following
	2nd	⌊ starter and STAR-DELTA starter (ii) Stair case lighting (iii) Traffic lightControl (iv) Temperature Controller
	3rd	Special control systems- Basics DCS & SCADA systems
	4th	Computer Control–Data Acquisition, Direct Digital Control System (Basics only)

Vedang Institute of Technology, 2nd Shift

Khurda

Department of Electrical & Electronics Engineering

Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: SUBASH CHANDRA BEHERA

Semester: 5th

Subject : WAVE PROPAGATION & BROADBAND COMMUNICATION ENGINEERING

Session Duration: 2023-24 Classes From: 01/08/2023 To Date: 30/11/2023

Week	Class Day	Topics to Cover
1st	1st	UnderstandtheconceptofEMWaveand itseffectsofenvironment.
	2nd	Understandtheprinciples ofworkingofantennas
	3rd	Understandthetheoryof Propagation
	4th	ExplaintheconceptofWavepropagationandantenna.
2nd	1st	Explainthepropagationofsignalthroughtransmissionlines.
	2nd	Explainthetransmissionofwavesthroughrectangular wave-guide.
	3rd	Discussthelosses,SWR&Impedancematchingof transmissionline.
	4th	ExplainthefundamentalprincipleofTVtransmissionandreception.
3rd	1st	ExplaintheprincipleofworkingofTVcamera.(CCTV)
	2nd	ExplaintheprincipleofcolourTVsystem.
	3rd	Discusstheprinciple ofDigitalTV.
	4th	Discusstheprincipleof HDTV.
4th	1st	Effectsofenvironmentssuchasreflection,refraction,interference,diffraction,absorptio nandattenuation(Definitiononly)
	2nd	ClassificationbasedonModesofPropagation- Groundwave,Ionosphere,Skywavepropagation,Space wavepropagation
	3rd	
	4th	Definition–criticalfrequency,max.useablefrequency,skipdistance,fading,Duct propagation&Tropospherescatterpropagationactualheightandvirtualheight
5th	1st	
	2nd	Radiationmechanismofanantenna-Maxwellequation.
	3rd	Definition- Antennagains,Directivegain,Directivity,effectiveaperture,polarization,inputimpedan ce,efficiency,Radiatorresistance,Bandwidth,Beamwidth,Radiationpattern
	4th	
6th	1st	Antenna-typesofantenna:Monopoleanddipoleantennaandomnidirectionalantenna
	2nd	Operationoffollowingantennawithadvantage&applications.
	3rd	Directionalhigh frequencyantenna :,Yagi&Rohmbusonly
	4th	UHF&Microwaveantenna.:Dishantenna(withparabolicreflector)& Hornantenna
7th	1st	BasicConcepts ofSmartAntennas-Conceptandbenefitsofsmartantennas
	2nd	Fundamentalsoftransmissionline.
	3rd	Equivalentcircuitoftransmissionline&RFequivalentcircuit
	4th	Characteristicsimpedance,methodsofcalculations &simple
8th	1st	Lossesintransmissionline.

	2nd	Standingwave–SWR,VSWR,Reflectioncoefficient,simplenumerical.
	3rd	Quarterwave&halfwavelengthline
	4th	Impedancematching&Stubs–single &double
9th	1st	Primary&secondaryconstantofX-missionline.
	2nd	MonochromeTVReceiver -Blockdiagram&functionofeachblock.
	3rd	ColourTVsignals(LuminanceSignal&Chrominance Signal,(I &Q,U&VSignals).
	4th	Types of Televisions by Technology- cathode-ray tube TVs, Plasma Display Panels, Digital LightProcessing (DLP),Liquid Crystal Display (LCD),Organic Light-Emitting Diode (OLED) Display,QuantumLight-Emitting Diode(QLED)– **onlyComparisonbasedonapplication**
10th	1st	
	2nd	Discusstheprincipleofoperation-LCDdisplay,LargeScreenDisplay.
	3rd	CATVsystems&Types& networks
	4th	DigitalTVTechnology-DigitalTVSignals,TransmissionofdigitalTVsignals &DigitalTVreceiverVideo programmeprocessorunit.
11th	1st	
	2nd	Video Pragramme processor unit.
	3rd	DefineMicrowaveWaveGuides.
	4th	Operationofrectangular wavegivesanditsadvantage.
12th	1st	Propagationof EMwavethroughwaveguide withTE&TMmodes.
	2nd	Circularwaveguide.
	3rd	OperationalCavityresonator.
	4th	WorkingofDirectionalcoupler, Isolators &Circulator.
13th	1st	Microwavetubes-PrincipleofoperationaloftwoCavityKlystron.
	2nd	Principleof Operationsof TravellingWaveTubes
	3rd	PrincipleofOperationsofCyclotron
	4th	PrincipleofOperationsofTunnelDiode&Gunndiode
14th	1st	Broadbandcommunication system
	2nd	Cablebroadbanddatanetwork
	3rd	SONET(SynchronousOpticalNetwork) Signalframecomponentstopologiesadvantagesapplications, and
	4th	
15th	1st	ISDNISDN Devicesinterfaces,services,Architecture,application
	2nd	BISDN - interfaces&Terminals,protocolarchitectureapplications
	3rd	Previous Year Question Paper Sovling
	4th	