

# Vedang Institute of Technology, 2<sup>nd</sup> Shift

Khurda

## Department of Electrical & Electronics Engineering

### Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: Rashmi Rekha Pal

Semester: 3rd

Subject : Circuit and Network Theory

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

Week	Class Day	Theory Topics
1st	1 <sup>st</sup>	Introduction to Magnetic Circuits
	2 <sup>nd</sup>	Magnetizing force, Intensity, MMF, flux and their relations
	3 <sup>rd</sup>	Permeability, reluctance and permeance
	4 <sup>th</sup>	Analogy between electric and Magnetic Circuits
2nd	1 <sup>st</sup>	B-H Curve
	2 <sup>nd</sup>	Series & parallel magnetic circuit
	3 <sup>rd</sup>	Hysteresis loop
	4 <sup>th</sup>	Self Inductance and Mutual Inductance
3rd	1 <sup>st</sup>	Conductively coupled circuit and mutual impedance
	2 <sup>nd</sup>	Dot convention
	3 <sup>rd</sup>	Coefficient of coupling
	4 <sup>th</sup>	Series and parallel connection of coupled inductors
4th	1 <sup>st</sup>	Solve numerical problems
	2 <sup>nd</sup>	Active, Passive, Unilateral & bilateral, Linear & Non linear elements
	3 <sup>rd</sup>	Mesh Analysis, Mesh Equations by inspection
	4 <sup>th</sup>	Super mesh Analysis
5th	1 <sup>st</sup>	Nodal Analysis, Nodal Equations by inspection
	2 <sup>nd</sup>	Super node Analysis
	3 <sup>rd</sup>	Source Transformation Technique
	4 <sup>th</sup>	Solve numerical problems (With Independent Sources Only)
6th	1 <sup>st</sup>	Star to delta and delta to star transformation
	2 <sup>nd</sup>	Super position Theorem
	3 <sup>rd</sup>	Thevenin's Theorem
	4 <sup>th</sup>	Norton's Theorem
7th	1 <sup>st</sup>	Maximum power Transfer Theorem.
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	Solve numerical problems (With Independent Sources Only)

	4 <sup>th</sup>	A.C. through R-L, R-C & R-L-C
8th	1 <sup>st</sup>	Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method
	2 <sup>nd</sup>	Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
	3 <sup>rd</sup>	Power factor & power triangle
	4 <sup>th</sup>	Deduce expression for active, reactive, apparent power.
9th	1 <sup>st</sup>	Derive the resonant frequency of series resonance and parallel resonance circuit
	2 <sup>nd</sup>	Define Bandwidth, Selectivity & Q-factor in series circuit.
	3 <sup>rd</sup>	Solve numerical problems
	4 <sup>th</sup>	Concept of poly-phase system and phase sequence
10th	1 <sup>st</sup>	Relation between phase and line quantities in star & delta connection
	2 <sup>nd</sup>	Power equation in 3-phase balanced circuit.
	3 <sup>rd</sup>	Solve numerical problems
	4 <sup>th</sup>	Measurement of 3-phase power by two wattmeter method.
11th	1 <sup>st</sup>	Solve numerical problems.
	2 <sup>nd</sup>	Steady state & transient state response.
	3 <sup>rd</sup>	Response to R-L, R-C & RLC circuit under DC condition.
	4 <sup>th</sup>	Solve numerical problems
12th	1 <sup>st</sup>	Open circuit impedance (z) parameters
	2 <sup>nd</sup>	Short circuit admittance (y) parameters
	3 <sup>rd</sup>	Transmission (ABCD) parameters
	4 <sup>th</sup>	Hybrid (h) parameters.
13th	1 <sup>st</sup>	Inter relationships of different parameters.
	2 <sup>nd</sup>	T and $\pi$ representation.
	3 <sup>rd</sup>	Solve numerical problems
	4 <sup>th</sup>	Define filter
14th	1 <sup>st</sup>	Classification of pass Band, stop Band and cut-off frequency.
	2 <sup>nd</sup>	Classification of filters.
	3 <sup>rd</sup>	Constant – K low pass filter. Constant – K high pass filter.
	4 <sup>th</sup>	Constant – K Band pass filter.
15th	1 <sup>st</sup>	Constant – K Band elimination filter.
	2 <sup>nd</sup>	Solve Numerical problems
	3 <sup>rd</sup>	
	4 <sup>th</sup>	Solve Previous Year Question Papers

# Vedang Institute of Technology, 2<sup>nd</sup> Shift

Khurda

## Department of Electrical & Electronics Engineering

### Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: Shrandhanjai Mishra

Semester: 3rd

Subject : Electrical Engineering Material

Session Duration: 2023-24

Classes From: 01/08/2023 To Date: 30/11/2023

Week	Class Day	Topics to be Covered
1st	1 <sup>st</sup>	Introduction, Resistivity
	2 <sup>nd</sup>	Factors affecting resistivity, Classification of conducting materials into low & High-resistivity materials
	3 <sup>rd</sup>	Low Resistivity Materials and their Applications(Copper, Silver, Gold, Aluminum, steel)
	4 <sup>th</sup>	Stranded conductors, Bundled conductors
2nd	1 <sup>st</sup>	Low resistivity copper alloys, High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	2 <sup>nd</sup>	Superconductivity, Superconducting materials
	3 <sup>rd</sup>	Application of superconductor materials
	4 <sup>th</sup>	Semiconducting Materials: Introduction, Semiconductors
3rd	1 <sup>st</sup>	Electron Energy and Energy Band Theory
	2 <sup>nd</sup>	Excitation of Atoms, Insulators, Semiconductors and Conductors
	3 <sup>rd</sup>	Semiconductor Materials
	4 <sup>th</sup>	Covalent Bonds, Intrinsic Semiconductors
4th	1 <sup>st</sup>	Extrinsic Semiconductors
	2 <sup>nd</sup>	N-Type Materials, P-Type Materials
	3 <sup>rd</sup>	Minority and Majority Carriers
	4 <sup>th</sup>	Semi-Conductor Materials and their Application
5th	1 <sup>st</sup>	Rectifiers, Temperature-sensitive resistors or thermistors, Photoconductive cells, Photovoltaic cells
	2 <sup>nd</sup>	Varistor, Transistors
5th	3 <sup>rd</sup>	Hall effect generators, Solar Power
	4 <sup>th</sup>	General properties of Insulating Materials
6th	1 <sup>st</sup>	Electrical properties
	2 <sup>nd</sup>	Visual properties, Mechanical properties
	3 <sup>rd</sup>	Thermal properties, Chemical properties, Ageing
	4 <sup>th</sup>	

7th	1 <sup>st</sup>	Introduction to Insulating Materials – Classification of insulating materials on the basis physical and chemical structure
	2 <sup>nd</sup>	Introduction to Insulating Gases, Commonly used insulating gases
	3 <sup>rd</sup>	Introduction to Dielectric Materials, Dielectric Constant of Permittivity
	4 <sup>th</sup>	Dielectric Loss
8th	1 <sup>st</sup>	Electric Conductivity of Dielectrics and their Break Down
	2 <sup>nd</sup>	Properties of Dielectrics
	3 <sup>rd</sup>	Applications of Dielectrics
	4 <sup>th</sup>	Introduction to Magnetic Materials and classification
9th	1 <sup>st</sup>	Diamagnetism
	2 <sup>nd</sup>	Para magnetism
	3 <sup>rd</sup>	Ferromagnetism
	4 <sup>th</sup>	Magnetization Curve
10th	1 <sup>st</sup>	Hysteresis
	2 <sup>nd</sup>	Eddy Currents
	3 <sup>rd</sup>	Curie Point
	4 <sup>th</sup>	Magneto-striction
11th	1 <sup>st</sup>	Soft and Hard magnetic Materials
	2 <sup>nd</sup>	Soft magnetic materials
	3 <sup>rd</sup>	Hard magnetic materials
	4 <sup>th</sup>	Introduction to material for special purpose
12th	1 <sup>st</sup>	Structural Materials
	2 <sup>nd</sup>	Lead
	3 <sup>rd</sup>	Steel tapes, wires and strips
	4 <sup>th</sup>	Other Materials
13th	1 <sup>st</sup>	Thermocouple materials
	2 <sup>nd</sup>	Bimetals
	3 <sup>rd</sup>	Soldering Materials
	4 <sup>th</sup>	Fuse and Fuse materials
14th	1 <sup>st</sup>	Dehydrating material
	2 <sup>nd</sup>	Doubt Clearance of topics covered
	3 <sup>rd</sup>	Previous Year Question Paper Discussion
	4 <sup>th</sup>	Previous Year Question Paper Discussion

# Vedang Institute of Technology, 2<sup>nd</sup> Shift

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## Department of Electrical & Electronics Engineering

### Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: Samresh Pratap Mohanty

Semester: 3rd

Subject : Elements of Mechanical Engineering

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

Week	Class Day	Topics to Cover
1st	<b>THERMODYNAICS:</b>	
	1st	State Unit of Heat and work, 1st law of thermodynamics
	2nd	State Unit of Heat and work, 1st law of thermodynamics
	3rd	State Laws of perfect gases
	4th	State Laws of perfect gases
2nd	1st	Determine relationship of specific heat of gases at constant volume and constant pressure
	2nd	Determine relationship of specific heat of gases at constant volume and constant pressure
	<b>PROPERTIES OF STEAM:</b>	
	3rd	Use steam table for solution of simple problem
	4th	Use steam table for solution of simple problem
3rd	1st	Use steam table for solution of simple problem
	2nd	Explain total heat of wet, dry and superheated steam
	3rd	Explain total heat of wet, dry and superheated steam
	4th	Explain total heat of wet, dry and superheated steam
	<b>BOILERS:</b>	
4th	1st	State types of Boilers
	2nd	State types of Boilers
	3rd	Describe Cochran
	4th	Describe Babcock Wilcox boiler
5th	1st	Describe Babcock Wilcox boiler
	2nd	Describe Mountings and accessories

	3rd	Describe Mountings and accessories
	4th	Describe Mountings and accessories
6th	1st	Describe Mountings and accessories
	2nd	Describe Mountings and accessories
	<b>STEAM ENGINES:</b>	
	3rd	Explain the principle of Simple steam engine
	4th	Explain the principle of Simple steam engine
7th	1st	Draw Indicator diagram
	2nd	Draw Indicator diagram
	3rd	Calculate Mean effective pressure, IHP and BHP and mechanical efficiency
	4th	Calculate Mean effective pressure, IHP and BHP and mechanical efficiency
8th	1st	Calculate Mean effective pressure, IHP and BHP and mechanical efficiency
	2nd	Solve Simple problem
	3rd	Solve Simple problem
	4th	Solve Simple problem
	<b>STEAM TURBINES:</b>	
9th	1st	State Types
	2nd	State Types
	3rd	State Types
	4th	State Types
10th	1st	State Types
	2nd	Differentiate between impulse and reaction Turbine
	<b>CONDENSER:</b>	
	3rd	Explain the function of condenser
	4th	Explain the function of condenser
11th	1st	State their types
	2nd	State their types
	<b>I.C. ENGINE:</b>	
	3rd	Explain working of two stroke and 4 stroke petrol and Diesel engines.
	4th	Explain working of two stroke and 4 stroke petrol and Diesel engines.
12th	1st	Differentiate between them
	2nd	Differentiate between them
	<b>HYDROSTATICS:</b>	
	3rd	Describe properties of fluid

	4th	Describe properties of fluid
13th	1st	Determine pressure at a point, pressure measuring Instruments
	2nd	Determine pressure at a point, pressure measuring Instruments
	3rd	Determine pressure at a point, pressure measuring Instruments
	<b>HYDROKINETICS:</b>	
	4th	Deduce equation of continuity of flow
14th	1st	Explain energy of flowing liquid
	2nd	Explain energy of flowing liquid
	3rd	State and explain Bernoulli's theorem
	4th	State and explain Bernoulli's theorem
	<b>HYDRAULIC DEVICES AND PNEUMATICS:</b>	
15th	1st	Intensifier
	2nd	Hydraulic lift
	3rd	Accumulator
	4th	Hydraulic ram

# Vedang Institute of Technology

## Lesson Plan

Discipline: Electrical & Electronics Engg.	Semester: 3 <sup>rd</sup>	Name of the Teaching Faculty: Manoj Mohanty
Subject: Environmental Studies	No. of Days/ Per Week Class Allotted:05	Semester From Date: 01/08/2023 To Date: 30/11/2023 No of Weeks: 15
Week	Class Day	Theory Topics
1 <sup>st</sup>	1st	Multidisciplinary nature of environmental studies- Introduction
	2nd	Definition, Scope and Importance
	3rd	Need for public awareness
	4th	Doubt Clearing
	5th	Unit-2: Natural resources- Introduction, definition Associated problems
2 <sup>nd</sup>	1st	Forest Resources – Use & over exploitation, deforestation case studies
	2nd	Timber Extraction, mining, dams and their effects of forests and tribal people
	3rd	Water resources – use & over utilization of surface & ground water, floods, draught
	4th	Conflicts over water, dams benefits and problems
	5th	Mineral resources- use & exploitation, environmental effects of extracting and using mineral resources.
3 <sup>rd</sup>	1st	Food resources- World food problem, changes caused by agriculture and over grazing.
	2nd	Effects of modern agriculture, fertilizers & pesticide problems, water logging & salinity
	3rd	Energy resources- Growing energy need, Renewable & nonrenewable energy source, use of alternate energy sources
	4th	Case studies, Land resources- land as a resource, land de radiation, man induces landslides,
	5th	Soil erosion, desertification
4 <sup>th</sup>	1st	Role of individual in conservation of natural resources, suitable use of resources for sustainable life styles
	2nd	Unit-3- Ecosystem: concept of ecosystem, structure of eco system
	3rd	Function of eco system, Producers, consumers, decomposers
	4th	Enter flow in eco s stem ,eco logical succession
	5th	Food chain, food web, ecological pyramid
5 <sup>th</sup>	1st	Forest eco system - definition, types, characteristics
	2nd	Forest ecosystem- structure & function
	3rd	Pond ecosystem
	4th	Stream eco system
	5th	Lake ecosystem
6 <sup>th</sup>	1st	River ecosystem
	2nd	Ocean ecosystem
	3rd	Estuaries ecosystem



	4th	Unit -4- Biodiversity & its conservation: introduction, definition, genetics, species, and ecosystem diversity
	5th	Biogeographically classification of India
7 <sup>th</sup>	1st	Value of biodiversity
	2nd	Biodiversity at global level
	3rd	Biodiversity at national level
	4th	Habitat loss, poaching of wild life
	5th	Man wildlife conflicts
8 <sup>th</sup>	1st	Doubt clearing
	2nd	Unit-5- Environmental pollution: introduction, definition
	3rd	Air pollution
	4th	Control of air pollution
	5th	Water pollution
9 <sup>th</sup>	1st	Control of water pollution
	2nd	Soil pollution
	3rd	Marine pollution
	4th	Noise pollution
	5th	Thermal pollution
10 <sup>th</sup>	1st	Nuclear pollution
	2nd	Solid waste management- causes, effect
	3rd	Control measures
	4th	Waste management
	5th	Role of individual in prevention of pollution
11 <sup>th</sup>	1st	Flood management
	2nd	Earth quake magement
	3rd	Cyclone management
	4th	Landslides management
	5th	Unit-6- Social issues & the environment: From unsustainable to sustainable development, urban problems related to energy.
12 <sup>th</sup>	1st	Water conservation , rain water harvesting
	2nd	Water shed management, resettlement and rehabilitation of people; its problem and concern
	3rd	Environmental ethics: issue and possible solutions.
	4th	Climate change, global warming
	5th	Acid rain , ozone layer depletion,
13 <sup>th</sup>	1st	Nuclear accidents and holocaust,
	2nd	case studies
	3rd	Air ( prevention and control of pollution ) Act
	4th	Water ( prevention and control of pollution ) Act
	5th	Public awareness
14 <sup>th</sup>	1st	Doubt clearing
	2nd	Unit 7- Human population and the Environment: population growth and variation among nations (introduction)
	3rd	population growth and variation among nations
	4th	Population explosion, family welfare *roe ram
	5th	Environment and human health
15 <sup>th</sup>	1st	Human rights
	2nd	Value education
	3rd	Role of information technology in environment and human health
	4th	Doubt clearing, revision
	5th	Revision and Previous year question discussion

# Vedang Institute of Technology, 2<sup>nd</sup> Shift

Khurda

## Department of Electrical & Electronics Engineering

### Lesson Plan for Odd Semester

Course: Diploma in Engineering

Teachers Name: Lina Mahanta

Semester: 3rd

Subject : Math-III

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

1 <sup>st</sup>	1 <sup>st</sup>	Real and Imaginary numbers.
	2 <sup>nd</sup>	Complex numbers, conjugate complex numbers, Modulus and Amplitude of a complex number.
	3 <sup>rd</sup>	Geometrical Representation of Complex Numbers.
	4 <sup>th</sup>	Properties of Complex Numbers.
2 <sup>nd</sup>	1 <sup>st</sup>	Determination of three cube roots of unity and their properties
	2 <sup>nd</sup>	De Moivre's theorem
	3 <sup>rd</sup>	Solve problems
	4 <sup>th</sup>	Define rank of a matrix.
3 <sup>rd</sup>	1 <sup>st</sup>	Perform elementary row transformations to determine the rank of a matrix.
	2 <sup>nd</sup>	State Rouche's theorem for consistency of a system of linear equations in $n$ unknowns.
	3 <sup>rd</sup>	Solve equations in three unknowns testing consistency.
	4 <sup>th</sup>	Solve problems
4 <sup>th</sup>	1 <sup>st</sup>	Define Homogeneous and Non – Homogeneous Linear Differential Equations with constant coefficients with examples.
	2 <sup>nd</sup>	Find general solution of linear Differential Equations in terms of C.F. and P.I.
	3 <sup>rd</sup>	Derive rules for finding C.F. And P.I. in terms of operator $D$ , excluding $\frac{1}{f(D)} x^n$ .
	4 <sup>th</sup>	
5 <sup>th</sup>	1 <sup>st</sup>	Problem Solving
	2 <sup>nd</sup>	
5 <sup>th</sup>	3 <sup>rd</sup>	Define partial differential equation (P.D.E) .

	4 <sup>th</sup>	Form partial differential equations by eliminating arbitrary constants and arbitrary functions.
6 <sup>th</sup>	1 <sup>st</sup>	Solve partial differential equations of the form $Pp + Qq = R$
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	Solve problems
	4 <sup>th</sup>	Define Gamma function , Properties of Gamma Function with examples
7 <sup>th</sup>	1 <sup>st</sup>	Define Laplace Transform of a function $f(t)$ and Inverse Laplace Transform .
	2 <sup>nd</sup>	Derive L.T. of standard functions and explain existence conditions of L.T.
	3 <sup>rd</sup>	Explain linear, shifting property of L.T.
	4 <sup>th</sup>	
8 <sup>th</sup>	1 <sup>st</sup>	Formulate L.T. of derivatives, integrals, multiplication by and division by $t^n$ and division by $t$
	2 <sup>nd</sup>	Derive formulae of inverse L.T. and explain method of partial fractions .
	3 <sup>rd</sup>	solve problem
	4 <sup>th</sup>	Define periodic functions with graph. Even/Odd Function. Dirichlet Function.
9 <sup>th</sup>	1 <sup>st</sup>	Define Fourier series and its notations. Euler formula for Fourier Series.
	2 <sup>nd</sup>	Workout Examples
	3 <sup>rd</sup>	State Dirichlet's condition for the Fourier expansion of a function and its convergence
	4 <sup>th</sup>	Express periodic function $f(x)$ satisfying Dirichlet's conditions as a Fourier series.
10 <sup>th</sup>	1 <sup>st</sup>	Problem Solving
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
	4 <sup>th</sup>	Define Even and Odd functions and find Fourier Series in $(0 \leq x \leq 2\pi \text{ and } -\pi \leq x \leq \pi)$
11 <sup>th</sup>	1 <sup>st</sup>	Problem Solving
	2 <sup>nd</sup>	Obtain F.S of continuous functions and functions having points of discontinuity in $(0 \leq x \leq 2\pi \text{ and } -\pi \leq x \leq \pi)$
	3 <sup>rd</sup>	
	4 <sup>th</sup>	Problem Solving
12 <sup>th</sup>	1 <sup>st</sup>	State Dirichlet's condition for the Fourier expansion of a function and its convergence
	2 <sup>nd</sup>	Appraise limitation of analytical methods of solution of Algebraic Equations.
	3 <sup>rd</sup>	Derive Iterative formula for finding the solutions of Algebraic Equations by :
	4 <sup>th</sup>	Bisection method

13 <sup>th</sup>	1 <sup>st</sup>	Newton- Raphson method
	2 <sup>nd</sup>	solve problems
	3 <sup>rd</sup>	Define shift Operator ( $E$ ) and establish relation between ( $E$ ) and difference operaor( $\Delta$ )
	4 <sup>th</sup>	Newton's forward and backward interpolation formula for equal intervals. Problem Solving
14 <sup>th</sup>	1 <sup>st</sup>	
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
	4 <sup>th</sup>	Lagrange's interpretation formula for unequal intervals. Problem Solving
15 <sup>th</sup>	1 <sup>st</sup>	Explain numerical integration and state:
	2 <sup>nd</sup>	Newton's Cote's formula.
	3 <sup>rd</sup>	Trapezoidal rule.
	4 <sup>th</sup>	Simpson's 1/3 <sup>rd</sup> rule