Lesson Plan		
	Discipline:Electrical Engineering Semester-3rd Winter 2023	**Name of the Teachng Faculty: Smruti Ranjan Mohanty Sr. Lect.(Electrical)**
Sl. No.	**Subject-Electrical Engineering Material**	**Semester From date: 01/08/2023 To date: 30/11/2023 No of weeks: 15**
	Weeks/Months	**Topic**
1	1st Week	1 . 1 Introduction
		1 . 2 Resistivity, factors affecting resistivity
		1 . 3 Classification of conducting materials into low-resistivity materials
		1 . 3 Classification of high resistivity materials
2	2nd Week	1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
		1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
		1 . 5 Stranded conductors.
		1 . 6 Bundled conductors.
3	3rd Week	1 . 7 Low resistivity copper alloys.
		1 . 8 High Resistivity Materials and their Applications(Tungsten,)
		1 . 8 High Resistivity Materials and their Applications(Carbon)
		Platinum
4	4th Week	Mercury
		1 . 9 Superconductivity.
		1 . 10 Superconducting materials.
		1 . 11 Application of superconductor materials.
5	5th Week	**Semiconducting Materials:** 2 . 1 Introduction
		2 . 2 Semiconductors 2 . 3 Electron Energy and Energy Band Theory
		2 . 4 Excitation of Atoms 2 . 5 Insulators, Semiconductors and Conductors2 . 4 Excitation of Atoms 2 . 5 Insulators, Semiconductors and Conductors
		2 . 6 Semiconductor Materials 2 . 7 Covalent Bonds
6	6th Week	2 . 8 Intrinsic Semiconductors 2 . 9 Extrinsic Semiconductors
		2 . 10 N-Type Materials 2 . 11 P-Type Materials
		2 . 12 Minority and Majority Carriers 2 . 13 Semi-Conductor Materials
		14 Applications of Semiconductor materials 2.14.1 Rectifiers
7	7th Week	2.14.2 Temperature-sensitive resisters or thermistors 2.14.3 Photoconductive cells 2.14.4 Photovoltaic cells
		Varisters 2.14.6 Transistors 2.14.7 Hall effect generators 2.14.8 Solar power

		Insulating Materials: **3 . 1 Introduction**
		3 . 2 General properties of Insulating Materials 3.2.1 Electrical properties
8	8th Week	3.2.2 Visual properties 3.2.3 Mechanical properties
		3.2.4 Thermal properties 3.2.5 Chemical properties
		3.2.6 Ageing 3.3 Insulating Materials – Classification, properties, applications
		3.3.1 Introduction 3.3.2 Classification of insulating materials on the basis physical and chemical structure.
9	9th Week	3.4 Insulating Gases,3.4.2 Commonly used insulating gases
		Dielectric Materials: 4.1 Introduction
		4.2 Dielectric Constant of Permittivity
		4.3 Polarization
10	10th Week	4.4 Dielectric Loss
		4.5 Electric Conductivity of Dielectrics and their Break Down
		4.6 Properties of Dielectrics.
		4.7 Applications of Dielectrics.
11	11th Week	Magnetic Materials: 5.1 Introduction
		5.2 Classification 5.2.1 Diamagnetism
		5.2.2 Para magnetism 5.2.3 Ferromagnetism
		5.3 Magnetization Curve 5.4 Hysteresis
12	12th Week	5.5 Eddy Currents 5.6 Curie Point
		5.7 Magneto-striction 5.8 Soft and Hard magnetic Materials
		5.8.1 Soft magnetic materials
		5.8.1 Soft magnetic materials
13	13th Week	Materials for Special Purposes 6.1 Introduction
		6.2 Structural Materials
		6.3 Protective Materials 6.3.1 Lead
		6.3.2 Steel tapes, wires and strips
14	14th Week	6.4 Other Materials 6.4.1 Thermocouple materials
		6.4.2 Bimetals 6.4.3 Soldering Materials
		6.4.4 Fuse and Fuse materials.
		6.4.5 Dehydrating material.
15	15th week	Revision

Semester:-3RD		Name of the Teaching Faculty SOUMYA PRAKASH SUTAR
Subject:- Environmental Studies	**No of Days/per Week Class Allotted :-04**	**Semester From date : 01.08.2023 TO 30.11.2023 Week-15**
Week	**Class Day**	**Theory/ Practical Topics**
1st	1st	CHAPTER-1: The Multidisciplinary nature of environmental studies Introduction
	2nd	Definition, scope and importance.
	3rd	Need for public awareness.
	4th	CHAPTER-2: Natural Resources: Forest resources: Use and over-exploitation, deforestation, case studies,
2nd	1st	Timber extraction mining, dams and their effects on forests and tribal people.
	2nd	Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.
	3rd	Mineral Resources: Use and exploitation,
	4th	Environmental effects of extracting and using mineral resources.
3rd	1st	Food Resources: World food problems, changes caused by agriculture and over grazing
	2nd	Effects of modern agriculture, fertilizers- pesticides problems, water logging, salinity
	3rd	Energy Resources: Growing energy need
	4th	Renewable and non-renewable energy sources, use of alternate energy sources, case studies.
4th	1st	Land Resources: Land as a resource, land degradation, Landslides, soil erosion, and desertification.
	2nd	Role of individual in conservation of natural resources, Equitable use of resources for sustainable life styles.
	3rd	CHAPTER-3: Systems: Concept of an eco-system.
	4th	Structure and function of an eco-system
5th	1st	Producers, consumers, decomposers.
	2nd	Energy flow in the eco systems.
	3rd	Ecological succession.
	4th	Food chains, food webs and ecological pyramids
6th	1st	Introduction, types, characteristic features of eco system:
	2nd	structure and function of the following ecosystem: Forest ecosystem, Aquatic eco systems (ponds, streams, lakes, rivers, oceans, estuaries).
	3rd	CHAPTER-4: Biodiversity and it's Conservation: Introduction
	4th	Definition: genetics, species and ecosystem diversity.

7th	1st	Biogeographically classification of India.
	2nd	Value of biodiversity: consumptive use, productive use,
	3rd	Value of biodiversity in social ethical, aesthetic and optin values.
	4th	Biodiversity at global, national and local level.
8th	1st	Threats to biodiversity: Habitats loss, poaching of wild life
	2nd	Threats to biodiversity: man wildlife conflicts.
	3rd	CHAPTER-5: Environmental Pollution: Introduction of environmental pollution, types of pollutant
	4th	Definition Causes, effects and control measures of Air pollution.
9th	1st	Water pollution
	2nd	Soil pollution
	3rd	Marine pollution
	4th	Noise pollution.
10th	1st	Thermal pollution
	2nd	Nuclear hazards.
	3rd	Solid waste Management: Causes
	4th	Effects and control measures of urban and industrial wastes.
11th	1st	Role of an individual in prevention of pollution.
	2nd	Disaster management: Floods, earth quake, cyclone and landslides.
	3rd	CHAPTER-6: Social issues and the Environment: Form unsustainable to sustainable development.
	4th	Urban problems related to energy.
12th	1st	Water conservation, rain water harvesting, water shed management
	2nd	Resettlement and rehabilitation of people; its problems and concern
	3rd	Environmental ethics: issue and possible solutions
	4th	Climate change, global warming, acid rain,
13th	1st	Ozone layer depletion, nuclear accidents and holocaust, case studies.
	2nd	Air (prevention and control of pollution) Act.
	3rd	Water (prevention and control of pollution) Act.
	4th	Public awareness
14th	1st	CHAPTER-7: Human population and the environment: introduction
	2nd	Population growth and variation among nations.
	3rd	Population explosion- family welfare program.
	4th	Environment and human health.
15th	1st	Human rights.
	2nd	Value education
	3rd	Role of information technology in environment and human health
	4th	Important question discussion

Lesson Plan		
	Discipline:Electrical EngineeringSemester-3rd Winter 2023	**Name of the Teachng Faculty: Sri Shubhranshu Ranjan Swain**
Sl. No.	**Subject-Circuit and Network Theory**	**Semester From date: 01.08.2023 To date: 30.11.2023. No of weeks: 15**
	Weeks/Months	**Topic**
1	1st Week	1 . 1 Introduction
		1 . 2 Magnetizing force, Intensity, MMF, flux and their relations
		1 . 3 Permeability, reluctance and permeance
2	2nd Week	1 . 4 Analogy between electric and Magnetic Circuits
		1 . 5 B-H Curve
		1 . 6 Series & parallel magnetic circuit.
		1 . 7 Hysteresis loop
		2 . 1 Self Inductance and Mutual Inductance
3	3rd Week	2 . 2 Conductively coupled circuit and mutual impedance
		2 . 3 Dot convention
		2 . 4 Coefficient of coupling
		2 . 5 Series and parallel connection of coupled inductors.
		2 . 6 Solve numerical problems
4	4th Week	3 . 1 Active, Passive, Unilateral & bilateral, Linear & Non linear elements
		3 . 2 Mesh Analysis, Mesh Equations by inspection
		3 . 3 Super mesh Analysis
		3 . 4 Nodal Analysis, Nodal Equations by inspection
		3 . 5 Super node Analysis.
5	5th Week	3 . 6 Source Transformation Technique
		3 . 7 Solve numerical problems (With Independent Sources Only)
		4.1 Star to delta and delta to star transformation
		4.2 Super position Theorem
		4.3 Thevenin’s Theorem
6	6th Week	4.4 Norton’s Theorem
		4.5 Maximum power Transfer Theorem.
		4.6 Solve numerical problems (With Independent Sources Only)
7	7th Week	5.1 A.C. through R-L, R-C & R-L-C Circuit
		5.2 Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit

		by complex algebra method.
		5.3 Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits
8	8th Week	5.4 Power factor & power triangle
		5.5 Deduce expression for active, reactive, apparent power.
		5.6 Derive the resonant frequency of series resonance and parallel resonance circuit
9	9th Week	5.7 Define Bandwidth, Selectivity & Q-factor in series circuit.
		5.8 Solve numerical problems
		6.1 Concept of poly-phase system and phase sequence
		6.2 Relation between phase and line quantities in star & delta connection
		6.3 Power equation in 3-phase balanced circuit.
10	10th Week	6.4 Solve numerical problems
		6.5 Measurement of 3-phase power by two wattmeter method.
		6.6 Solve numerical problems.
		7.1 Steady state & transient state response.
		7.2 Response to R-L, R-C & RLC circuit under DC condition.
11	11th Week	7.3 Solve numerical problems
		8.1 Open circuit impedance (z) parameters
		8.2 Short circuit admittance (y) parameters
		8.3 Transmission (ABCD) parameters
12	12th Week	8.4 Hybrid (h) parameters.
		8.5 Inter relationships of different parameters.
		8.6 T and p representation.
13	13th Week	8.7 Solve numerical problems
		9.1 Define filter
		9.2 Classification of pass Band, stop Band and cut-off frequency.
14	14th Week	9.3 Classification of filters.

		9.4 Constant – K low pass filter.
		9.5 Constant – K high pass filter.
15	15th Week	9.6 Constant – K Band pass filter.
		9.7 Constant – K Band elimination filter.
		9.8 Solve Numerical problems
		Revision & Dout Solve