Lesson Plan

Name : Ms. Naveen Rathi

Discipline: Mechanical Engg. ,

Year : 1st semester

Subject : Environmental studies and disaster management

Code : 220016

Duration: 15 weeks (1 Sept 2023 to Dec 2023)

Work Load: 2 Lectures per week

Week	Theory	
	Lecture	**Topic**
1st	1st	Basics of ecology , eco system- concept, and sustainable development
	2nd	Sources, advantages, disadvantages of renewable and nonrenewable energy
2nd	1st	Rain water harvesting
	2nd	Deforestation – its effects & control measures Revision/Problem Solving
3rd	1st	Assignment 1/Class Test
	2nd	Air Pollution: Source of air pollution , Effect of air pollution on human health, economiy
4th	1st	Air pollution control methods
	2nd	Revision
	3rd	
5th	1st	Revision/Problem Solving
	2nd	Assignment 2/Class Test
6th	**1st SESSIONAL TEST (UNIT 1 & 2.1-2.2)**	
7th	1st	Noise Pollution: Source of noise pollution, Unit of noise, Effect of noise pollution
	2nd	Acceptable noise level, Different method of minimizing noise pollution.
8th	1st	Unit 3Water Pollution: Impurities in water, Cause of water pollution, Source of water pollution. Effect of water pollution on human health, Concept of DO, BOD, COD.
	2nd	Prevention of water pollution- Water treatment processes, Sewage treatment. Water quality standard.
9th	1st	3.2 Soil Pollution :Sources of soil pollution, Effects and Control of soil pollution, Types of Solid waste- House hold, Industrial, Agricultural, Biomedical
	2nd	Disposal of solid waste, Solid waste management E-waste, E – waste management Revision/Problem Solving/Assignment 2
10th	**2nd SESSIONAL TEST (UNIT 2.2 and unit - 3)**	
11th	1st	**UNIT 4** Global Warming, Green House Effect, Depletion of Ozone Layer, Acid Rain.
	2nd	Eco-friendly Material, Recycling of Material, Concept of Green Buildings, Concept of Carbon Credit & Carbon footprint
12th	1st	**UNIT 5** A. Different Types of Disaster: Natural Disaster: such as Flood, Cyclone, Earthquakes and

		Landslides etc. Man-made Disaster: such as Fire, Industrial Pollution
	2nd	Nuclear Disaster, Biological Disasters, Accidents (Air, Sea Rail & Road), Structural failures(Building and Bridge), War & Terrorism etc.
13th	1st	B.Disaster Preparedness :Disaster Preparedness Plan Prediction Early Warnings ,Safety Measures of Disaster Psychological response and Management (Trauma, Stress, Rumour and Panic
	2nd	Revision
14th	**3rd SESSIONAL TEST (UNIT 4.3-4.6 & 5)**	
15th	1st	Assignment 3
	2nd	Class Test
	3rd	Problem Solving

Lesson Plan

Name : Ms. Pooja
Discipline : All Branches
Year : 1st Semester
Subject : Applied Mathematics
Duration : 1st Semester(11 Oct 2022 to 27 Jan 2023)
Work Load : 4 Lectures per week

Week	Theory	
	Lecture	**Topic**
1st	1st	Complex Numbers: definition of complex number, real and imaginary parts of a complex number Conjugate of a complex number, modulus and amplitude
	2nd	Problems
	3rd	Addition subtraction, multiplication and division of complex numbers
	4th	Problems
2nd	1st	Polar and Cartesian Form and their inter conversion, & problems
	2nd	Logarithms and its basic properties
	3rd	Problems
	4th	Problems
3rd	1st	Meaning of npr&ncr (mathematical expression). Binomial theorem (without proof) for positive integral index (expansion and general form);
	2nd	Problems
	3rd	Binomial theorem for any index (expansion up to 3 terms - without proof),
	4th	Problems
4th	1st	Problems
	2nd	First binomial approximation with application to engineering problems.
	3rd	Problems
	4th	Problems
5th	1st	Revision
	2nd	Revision
	3rd	Test
	4th	Revision
6th	**1st SESSIONAL TEST (UNIT 1 & 2.1)**	
7th	1st	Definition of Matrices and its types, addition, subtraction.
	2nd	Multiplication of matrices (upto 2nd order). Evaluation of determinants (upto 2ndorder) & problems.
	3rd	Problems
	4th	Solution of equations (upto 2 unknowns) by Crammer's rule & problems
8th	1st	Concept of angle, measurement of angle in degrees, grades, radians and their conversions.
	2nd	Problems
	3rd	T-Ratios of Allied angles (without proof) & problems.
	4th	Sum, Difference formulae and their applications (without proof) & problems
9th	1st	Product formulae (Transformation of product to sum, differenc and vice versa & problems.
	2nd	Applications of Trigonometric terms in engineering problems such as to find an angle of elevation, height, distance etc.
	3rd	Problems

	4th	Revision
10th	**2nd SESSIONAL TEST (UNIT 2.2 & 3)**	
11th	1st	Cartesian and Polar co-ordinates (two dimensional), Distan between two points, mid-point, centroid of vertices of triangle.
	2nd	Problems
	3rd	Slope of a line, equation of straight line in various standards forms (without proof); (slope intercept form, intercept form, one-point form, two-point form, symmetric form, normal form, general form) & problems.
	4th	Intersection of two straight lines, concurrency of lines, angle between straight lines, parallel and perpendicular lines & problems
12th	1st	Perpendicular distance formula, conversion of general form of equation to the various forms & problems.
	2nd	General equation of a circle and its characteristics. To find the equation of a circle when Centre and radius are given.
	3rd	To find the equation of a circle when three points lying on it, coordinates of end points of a diameter are given
	4th	Theoretical Introduction of MATLAB Or SciLab software
13th	1st	MATLAB or Scilabas Simple Calculator (Addition and subtraction of values –Trigonometric and Inverse Trigonometric functions)
	2nd	General practice
	3rd	Problems
	4th	Revision
14th	**3rd SESSIONAL TEST (UNIT 4 & 5)**	
15th	1st	Assignment 3
	2nd	Class Test
	3rd	Problem Solving
	4th	Problem Solving

Lesson Plan

Name : Ms. Shalini
Discipline : Electrical Engg.
Year : 1st Semester
Subject : PRINCIPLES OF ELECTRICAL ENGINEERING(220914)
Duration : 1st Semester(11 Oct 2022 to 27 Jan 2023)
Work Load : 3 Lectures and 1 practical per week

Week	Theory	
	Lecture	**Topic**
1st	1st	Nature of Electricity, Charge, free electrons, Electric potential and potential difference, Electric current,
	2nd	Electrical Energy, Electrical power and their unit
	3rd	Resistance: Definition, Unit, Laws of resistance, conductivity and resistivity,
2nd	1st	Effect of temperature on resistance, Temperature coefficient of resistance, Types of resistance & their applications, Color coding of resistance.
	2nd	Rating and wattages of Electrical appliances, heating effect of Electrical current
	3rd	Introduction to Capacitors, capacitance, Variable capacitor, Factors affecting capacitance of a capacitor
3rd	1st	Capacitance of parallel plate capacitor
	2nd	Grouping of capacitors: capacitors in series, parallel, series-parallel.
	3rd	Energy stored in capacitor, Charging and discharging of a capacitor
4th	1st	Revision/Problem Solving
	2nd	Assignment on unit 1
	3rd	Ohm's law with practical implementation
5th	1st	Definition of DC circuit, types of DC circuits: series circuit, parallel circuit, seriesparallel circuit.
	2nd	Revision/Problem Solving
	3rd	Assignment 1/Class Test
6th	**1st SESSIONAL TEST (UNIT 1 & 2.1-2.2)**	
7th	1st	Concept of voltage source & current source, connections and their conversions. Wheatstone Bridge.
	2nd	Kirchhoff's Laws-KVL and KCL. Star – Delta connections and their conversion.
	3rd	Concepts of Electrostatics, Coulomb's law. Concept of magnetism, Magnetic field, Magnetic lines of force
8th	1st	Definition of Electromagnetism, magnetic effect of electric current, direction of magnetic field and current: right hand rule, right hand cork screw rule. Magnetic field due to circular coil, solenoid,
	2nd	Current carrying conductors in a magnetic field and methods to find its direction, applications. Force between two parallel current carrying conductors.
	3rd	Analogy between electric and magnetic circuit. Definition of Magnetic circuit, terms related to magnetic circuits: magneto-motive force (MMF), flux, magnetic flux density, reluctance, permeability, field intensity, relation between magnetic flux density, permeability, field intensity.
9th	1st	Determination of Ampere Turns, Series & parallel magnetic circuits, Concept of magnetic leakage, useful flux & Air Gap.
	2nd	Magnetic curve (B-H curve) - cause of Hysteresis, Hysteresis loss, significance of Hysteresis loss, magnetic hysteresis loop for hard and soft magnetic materials.

	3rd	Revision/Problem Solving/Assignment 2
10th	2nd SESSIONAL TEST (UNIT 2.3-2.5 , 3 , 4.1-4.2)	
11th	1st	Faraday's laws of electro-magnetic induction. Direction of Induced emf and current: Lenz's law, Fleming's right Hand rule
	2nd	E.M.F induced in a conductor: Dynamically induced emf, Statically induced emf: Selfinduced emf and Mutual induced emf, Expression for self-inductance, mutual inductance.
	3rd	Energy stored in an Inductor, Eddy currents, Eddy current losses
12th	1st	Electrolysis, Faradays law of electrolysis, important terms related to electrolysis, electroplating.
	2nd	Concept of Cell: definition, emf of cell, internal resistance of cell, terminal potential of cell, types of cell (primary and secondary cell), grouping of cell (series grouping, parallel grouping, series-parallel grouping).
	3rd	Concept of Battery: Definition, types of battery like Lead-Acid, Nickel-Cadmium, Lithium ion batteries with their Construction, working principle and applications
13th	1st	Charging methods of storage battery and charging indications. Characteristics of battery: voltage, capacity, efficiency
	2nd	Care and maintenance of battery Introduction to maintenance free batteries. Disposal of batteries
	3rd	Revision/Problem Solving
14th	**3rd SESSIONAL TEST (UNIT 4.3-4.6 & 5)**	
15th	1st	Assignment 3
	2nd	Class Test
	3rd	Problem Solving

Lesson Plan

Name : Ms. Shalini
Discipline : Common for all branches
Year : 1st
Subject : Applied Physics
Code : 220013/210013
Duration : 15 weeks (11 Oct 2022 to 27 Jan 2023)
Work Load : 2 Lectures, and 1 practical per week

	Theory		Practical
Week	**Lecture**	**Topic**	**Topic**
1st	**1st**	Introduction about physics, Physical quantities, Fundamental and derived physical quantities	1. Introduction about lab Familiarization of measurement instrumen and their parts (for example_Vernier calipe screw gaufe, sphere meter, travellir microscope etc.), and taking a readin (compulsory to all students)
	2nd	FPS, CGS and SI system of units	
2nd	**1st**	Dimensions and dimensional formulae of physical quantities Dimensional formulae Distance, area, volume, velocity, acceleration, momentum, force etc.	2. To find diameter of solid cylind using a Vernier calioer
	2nd	Dim. Formula of work, power, energy, surface tension, stress, strain, moment of inertia Principle of homogeneity of dimensions, checking of correctness of equation	
3rd	**1st**	Conversion from one system of units to other (force, work, acceleration)	3. To find internal dia meter and depth of a beaker using a Vernier caliper and hence find its volume.
	2nd	Revision of unit 1/ Problem solving/ Numericals	
4th	**1st**	Scalar and vector quantities– definition and examples, representation of vector, types of vector (unit vector, position vector, co-initial vector, collinear vector, co-planar vector)	4. To find the diameter of wire using screw gauge
	2nd	Vector algebra- addition of vectors, Triangle &Parallelogram law (statement and formula only)	
5th	**1st**	Scalar and vector product (statement and formula only) Force and its units, resolution of force (statement and formula only)	5. To find thickness of paper using screw gauge.
	2nd	Newton's laws of motion (statement and examples)	
6th		**1st SESSIONAL TEST (UNIT 1 & UNIT 2.1 – 2.5)**	
7th	**1st**	Conservation of linear momentum Impulse and its examples Introduction to Circular motion, Angular displacement, angular velocity, angular Acceleration and relation between linear and angular system.	6. To determine the thickness of glass strip using a sphero meter
	2nd	Centripetal and centrifugal forces Banking of roads (application of centrifugal force) Rotational Motion	

8th	**1st**	Work- definition, symbol, formula and SI unit, types of work (zero work, positive work and negative work) with example Friction– definition and its simple daily life applications	7. To determine radius of curvature of a given spherical surface by a sphero meter
	2nd	Power- definition, formula and units Energy- definition and its SI unit, examples of transformation of energy	
9th	**1st**	Kinetic energy- definition, examples, formulaand its derivation Potential energy- definition, examples, formulaand its derivation	8. To Verify parallelgramlaw of force
	2nd	Law of conservation of mechanical energy for freely falling bodies (with derivation) Simple numerical problems based on formula of Power and Energy	
10th	**2ND SESSIONAL TEST (UNIT 2.5 – 2.9 & UNIT 3)**		
11th	**1st**	Elasticity and plasticity- definition, deforming force, restoring force, example of elastic and plastic body Definition of stress and strain, Hooke's law, modulus of elasticity	9. To determine the atmospheric pressure at a place using Fortin's Barometer
	2nd	Pressure- definition, atmospheric pressure, gauge pressure, absolute pressure, Pascal's law Surface tension- definition, SI unit, applications of surface tension, effect of temperature on surface tension Viscosity: definition, unit, examples, effect of temperature on viscosity	
12th	**1st**	Definition of heat and temperature (on the basis of kinetic theory) Difference between heat and temperature	10. To determine force constant of spring using Hooke's law
	2nd	Principle and working of mercury thermometer Modes of transfer of heat- conduction, convection and radiation with examples	
	3rd		
13th	**1st**	Properties of heat radiation 5.6 Different scales of temperature and their relationship	11. Measuring room temperature with the help of thermometer and its conversion in different scale
	2nd	Revision/Class Test	
14th		**3rd SESSIONAL TEST (UNIT 4 & UNIT 5)**	
15th	**1st**	**Oral test**	Revision & Checking of practical note books
	2nd	**Written test**	