



LESSON PLAN

Subject: ENGINEERING PHYSICS			
Discipline: ELECTRICAL, DRILLING		Name of the Faculty: Lambodar Mahanta	
CourseCode:	Th-2(a)	Semester:	1st
TotalPeriods:	60	Examination:	Winter 2022-23
No Of Days /Week class Allotted:	<u>4/week</u>	Max mark allotted (semester & internal)	(80+20)=100

MONTH	WEEK	NO OF PERIODS AVAILABLE	CLASS DAY	THEORY TOPICS TO BE COVERED	REMARKS
Oct-22	1st	4	27/10/22	Physical quantities - (Definition). Definition of fundamental and derived units, systems of units (FPS, CGS, MKS and SI units)	
			29/10/22	Definition of dimension and Dimensional formulae of physical quantities. Dimensional equations and Principle of homogeneity. Checking the dimensional correctness of Physical relations.	
			29/10/22	Revision & Doubt clearing class of –chapter-1	
			31/10/22	Scalar and Vector quantities (definition and concept), Representation of a Vector – examples, types of vectors. Triangle and Parallelogram law of vector Addition (Statement only). Simple Numericals	
Nov-22	1st	4	3/11/22	Resolution of Vectors – Simple Numericals on Horizontal and Vertical components. 2.4 Vector multiplication (scalar product and vector product of vectors).	
			5/11/22	Revision & Doubt clearing class of –chapter-2	
			5/11/22	Concept of Rest and Motion. Displacement, Speed, Velocity, Acceleration & FORCE (Definition, formula, dimension & SI units).	
			7/11/22	Equations of Motion under Gravity (upward and downward motion) - no derivation. Circular motion: Angular displacement, Angular velocity and Angular acceleration (definition, formula & SI units).	
	2nd	4	10/11/22	Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration).	

				Define Projectile, Examples of Projectile.	
			12/11/22	Expression for Equation of Trajectory, Time of Flight, Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.	
			12/11/22	Revision & Doubt clearing class of –chapter-3 Class test	
			14/11/22	Work – Definition, Formula & SI units. Friction – Definition & Concept.	
	3rd	4	17/11/22	Types of friction (static, dynamic), Limiting Friction (Definition with Concept). Laws of Limiting Friction (Only statement, No Experimental Verification).	
			19/11/22	Coefficient of Friction – Definition & Formula, Simple Numericals.	
			19/11/22	Methods to reduce friction.	
			21/11/22	Revision & Doubt clearing of chapter-4 Class Test	
	4th	4	24/11/22	Newton"s Laws of Gravitation – Statement and Explanation. Universal Gravitational Constant (G)- Definition, Unit and Dimension.	
			26/11/22	Acceleration due to gravity (g)- Definition and Concept. Definition of mass and weight.	
			26/11/22	Relation between g and G. Variation of g with altitude and depth (No derivation – Only Explanation).	
			28/11/22	Kepler"s Laws of Planetary Motion (Statement only).	
Dec-22	1st	4	1/12/22	Revision & Doubt clearing of chapter-5 Class Test	
			2/12/22	Internal	
			3/12/22	Simple Harmonic Motion (SHM) - Definition & Examples. Expression (Formula/Equation) for displacement, velocity, acceleration of a body/ particle in SHM.	
			5/12/22	Wave motion – Definition & Concept. Transverse and Longitudinal wave motion – Definition, Examples & Comparison.	
	2nd	4	8/12/22	Definition of different wave parameters (Amplitude, Wavelength, Frequency, Time Period).	
			10/12/22	Derivation of Relation between Velocity, Frequency and Wavelength of a wave	
			10/12/22	Ultrasonics – Definition, Properties & Applications.	
			12/12/22	Revision & Doubt Clearing of Chapter-6	
	3rd	4	15/12/22	Heat and Temperature – Definition & Difference Units of Heat (FPS, CGS, MKS & SI).	
			17/12/22	Specific Heat (concept, definition, unit, dimension and simple numerical) Change of state (concept), Latent Heat (concept, definition, unit, dimension and simple numerical)	
			17/12/22	Thermal Expansion – Definition & Concept Expansion of Solids (Concept) Coefficient of linear, superficial and cubical expansions of	

				Solids – Definition & Units.	
			19/12/22	Relation between α , β & γ Work and Heat - Concept & Relation.	
	4th	3	22/12/22	Joule's Mechanical Equivalent of Heat (Definition, Unit) First Law of Thermodynamics (Statement and concept only)	
			24/12/22	Revision & Doubt Clearing –chapter-7 Class Test	
			24/12/22	Reflection & Refraction – Definition. Laws of reflection and refraction (Statement only)	
Jan-23	1st	3	3/1/23	Decision Control and Looping Statements (If, If-else, If-else-if, Switch, While, Do-while, For, Break, Continue & Goto)	
			3/1/23	Refractive index – Definition, Formula & Simple numerical. Critical Angle and Total internal reflection – Concept, Definition & Explanation	
			5/1/23	Refraction through Prism (Ray Diagram & Formula only – NO derivation).. Fiber Optics – Definition, Properties & Applications.	
	2nd	4	8/1/23	Revision & Doubt Clearing –chapter-8 Class Test	
			10/1/23	Electrostatics – Definition & Concept. Statement & Explanation of Coulombs laws, Definition of Unit charge.	
			12/1/23	Absolute & Relative Permittivity (ϵ) – Definition, Relation & Unit. Electric potential and Electric Potential difference (Definition, Formula & SI Units).	
			12/1/23	Electric field, Electric field intensity (E) – Definition, Formula & Unit. Capacitance - Definition, Formula & Unit.	
	3rd	4	17/1/23	Series and Parallel combination of Capacitors (No derivation, Formula for effective/Combined/total capacitance & Simple numericals). Magnet, Properties of a magnet.	
			17/1/23	Coulomb's Laws in Magnetism – Statement & Explanation, Unit Pole (Definition). Magnetic field, Magnetic Field intensity (H) - (Definition, Formula & SI Unit).	
			19/1/23	Magnetic lines of force (Definition and Properties) Magnetic Flux (Φ) & Magnetic Flux Density (B) – Definition, Formula & Unit.	
			20/1/23	Revision & Doubt Clearing Class-chapter-9 Class Test	
	4th	4	22/1/23	Electric Current – Definition, Formula & SI Units. Ohm's law and its applications.	
			24/1/23	Series and Parallel combination of resistors (No derivation, Formula for effective/ Combined/ total resistance & Simple numericals). Kirchhoff's laws (Statement & Explanation with diagram).	

			24/1/23	Application of Kirchhoff's laws to Wheatstone bridge - Balanced condition of Wheatstone's Bridge – Condition of Balance (Equation).	
			27/1/23	Revision & Doubt Clearing Class-chapter-10 Class Test	
	5th	4	28/1/23	Faraday's Laws of Electromagnetic Induction (Statement only) Lenz's Law (Statement)	
			28/1/23	Fleming's Right Hand Rule Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.	
			29/1/23	Revision & Doubt Clearing Class-chapter-11 Class Test	
			31/1/23	LASER & laser beam (Concept and Definition) Principle of LASER (Population Inversion & Optical Pumping)	
			EXTRA CLASS	Properties & Applications of LASER Wireless Transmission – Ground Waves, Sky Waves, Space Waves (Concept & Definition)	
			EXTRA CLASS	Revision & Doubt Clearing Class-chapter-12 Class Test	
			EXTRA CLASS	Previous year questions discussion	
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