

ENGG. PHYSICS (Th. 02-a)

Date of Commencement of classes: 14.03.2022

Date of Closing of classes: 11.06.2022

LIST OF WEEK/ MONTH WISE AVAILABLE DAYS/ PERIODS

Sl. No.	Month	Week-wise no. of academic days available					Total no. of academic days
		Week- 1	Week- 2	Week- 3	Week- 4	Week- 5	
1	March	--	--	4	6	3	13
2	April	2	5	4	4	6	21
3	May	5	4	4	5	2	20
4	June	3	6	--	--	--	09
Total		10	15	12	15	11	63

NO. OF AVAILABLE CLASSES PER WEEK/ MONTH

Sl. No.	Month	Week-wise no. of academic periods available					Total no. of academic periods
		Week- 1	Week- 2	Week- 3	Week- 4	Week- 5	
1	March	--	--	4	6	3	13
2	April	2	5	4	4	6	21
3	May	5	4	4	5	2	20
4	June	3	6	--	--	--	09
Total		10	15	12	15	11	63

UNIT WISE DISTRIBUTION OF PERIODS

Sl. No.	Name of the Unit	Periods as per Syllabus	Required period	Expected Marks
01	Units and Dimensions	03	04	07
02	Scalars and Vectors	03	04	04
03	Kinematics	06	06	12
04	Work & Friction	05	05	10
05	Gravitation	05	04	12
06	Oscillations & Waves	06	04	07
07	Heat & Thermodynamics	07	07	12
08	Optics	04	05	07
09	Electrostatics & Magnetism	07	09	12
10	Current electricity	06	05	10
11	Electromagnetism & Electromagnetic induction	05	05	07
12	Modern physics	03	05	05
TOTAL		60	63	105

Sign of Lect.

Sign of HOD.

Sign of AIC

Sign of Vice Principal

LESSON PLAN

Name of the Month	Week No.	Class day	Art. No.	Theory Topics
M A R C H	3 rd	1 st	1.1	Chapter No.- 01(Units and Dimensions) Physical quantities - (Definition).
			1.2	Definition of fundamental and derived units, systems of units (FPS, CGS, MKS and SI units).
		2 nd	1.3	Definition of dimension and Dimensional formulae of physical quantities.
		3 rd	1.4	Dimensional equations and Principle of homogeneity.
		4 th	1.5	Checking the dimensional correctness of Physical relations.
	4 th	1 st	2.1	Chapter No.- 02(Scalars and Vectors) Scalar and Vector quantities (definition and concept), Representation of a Vector – examples, types of vectors.
		2 nd	2.2	Triangle and Parallelogram law of vector Addition (Statement only). Simple Numerical.
		3 rd	2.3	Resolution of Vectors – Simple Numerical on Horizontal and Vertical components.
		4 th	2.4	Vector multiplication (scalar product and vector product of vectors).
		5 th	3.1	Chapter No.- 03 (Kinematics) Concept of Rest and Motion.
				3.2
		6 th	3.3	Equations of Motion under Gravity (upward and downward motion) - no derivation.
	5 th	1 st	3.4	Circular motion: Angular displacement, Angular velocity and Angular acceleration (definition, formula & SI units).
		2 nd	3.5	Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration).
			3.6	Define Projectile, Examples of Projectile.
		3 rd	3.7	Expression for Equation of Trajectory, Time of Flight, Maximum Height.
	1 st	and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range		
	1 st	2 nd	4.1	Chapter No.- 04 (Work & Friction) Work – Definition, Formula & SI units.
			4.2	Friction – Definition & Concept.
		2 nd	1 st	4.3

		2 nd	4.4	Laws of Limiting Friction (Only statement, No Experimental Verification).
		3 rd	4.5	Coefficient of Friction – Definition & Formula.
				Simple Numerical
		4 th	4.6	Methods to reduce friction.
		5 th	5.1	Chapter No.- 05 (Gravitation) Newton’s Laws of Gravitation – Statement and Explanation.
	5.2		Universal Gravitational Constant (G) - Definition, Unit and Dimension.	
	3 rd	1 st	5.3	Acceleration due to gravity (g)- Definition and Concept.
			5.4	Definition of mass and weight.
			5.5	Relation between g and G.
		2 nd	5.6	Variation of g with altitude and depth (No derivation – Only Explanation).
		3 rd	5.7	Kepler’s Laws of Planetary Motion (Statement only).
		4 th	6.1	Chapter No.- 06 (Oscillations & Waves) Simple Harmonic Motion (SHM) - Definition & Examples.
			6.2	Expression (Formula/Equation) for displacement, velocity, acceleration of a body/ particle in SHM.
	4 th	1 st	6.3	Wave motion – Definition & Concept.
			6.4	Transverse and Longitudinal wave motion – Definition, Examples & Comparison.
		2 nd	6.5	Definition of different wave parameters (Amplitude, Wavelength, Frequency, Time Period).
			6.6	Derivation of Relation between Velocity, Frequency and Wavelength of a wave.
		3 rd	6.7	Ultrasonic – Definition, Properties & Applications.
		4 th	7.1	Chapter No.- 07(Heat & Thermodynamics) Heat and Temperature – Definition & Difference
			7.2	Units of Heat (FPS, CGS, MKS & SI).
	5 th	1 st	7.3	Specific Heat (concept, definition, unit, dimension and simple numerical)
		2 nd	7.4	Change of state (concept), Latent Heat (concept, definition, unit, dimension and simple numerical)
		3 rd	7.5	Thermal Expansion – Definition & Concept
7.6			Expansion of Solids (Concept)	
7.7			Coefficient of linear, superficial and cubical expansions of Solids – Definition & Units.	
4 th		7.8	Relation between α , β & γ	

		5 th	7.9	Work and Heat - Concept & Relation.	
			7.10	Joule's Mechanical Equivalent of Heat (Definition, Unit)	
		6 th	7.11	First Law of Thermodynamics (Statement and concept)	
M A Y	1 st	1 st	8.1	Chapter No.- 08 (Optics) Reflection & Refraction – Definition.	
			8.2	Laws of reflection and refraction (Statement only)	
		2 nd	8.3	Refractive index – Definition, Formula	
				Solving Numerical	
		3 rd	8.4	Critical Angle and Total internal reflection – Concept, Definition & Explanation	
		4 th	8.5	Refraction through Prism (Ray Diagram & Formula only – NO derivation).	
	5 th	8.6	Fiber Optics – Definition, Properties & Applications.		
	2 nd	1 st	9.1	Chapter No.- 09 (Electrostatics & Magnetism) Electrostatics – Definition & Concept	
			9.2	Statement & Explanation of Coulombs laws, Definition of Unit charge.	
		2 nd	9.3	Absolute & Relative Permittivity (ϵ) – Definition, Relation & Unit.	
			9.4	Electric potential and Electric Potential difference (Definition, Formula & SI Units).	
		3 rd	9.5	Electric field, Electric field intensity (E) – Definition, Formula & Unit	
			9.6	Capacitance - Definition, Formula & Unit.	
		4 th	9.7	Series and Parallel combination of Capacitors (No derivation, Formula for effective/Combined/total capacitance & Simple numerical).	
		3 rd	1 st	9.8	Magnet, Properties of a magnet
	2 nd		9.9	Coulomb's Laws in Magnetism – Statement & Explanation, Unit Pole	
	3 rd		9.10	Magnetic field, Magnetic Field intensity (H) - (Definition, Formula & SI Unit).	
	4 th		9.11	Magnetic lines of force (Definition and Properties)	
	4 th	1 st	9.12	Magnetic Flux (Φ) & Magnetic Flux Density (B) – Definition, Formula & Unit.	
		2 nd	10.1	Chapter No.- 10 (Current electricity) Electric Current – Definition, Formula & SI Units	

		3 rd	10.2	Ohm's law and its applications.
		4 th	10.3	Series and Parallel combination of resistors (No derivation, Formula for effective/ Combined/ total resistance & Simple numericals).
		5 th	10.4	Kirchhoff's laws (Statement & Explanation with diagram).
	5 th	1 st	10.5	Application of Kirchhoff's laws to Wheatstone bridge - Balanced condition of Wheatstone's Bridge.
		2 nd	11.1	Chapter No.- 11 (Electromagnetism & Electromagnetic induction) Electromagnetism – Definition & Concept.
	J U N E	1 st	1 st	11.2
2 nd			11.3	Faraday's Laws of Electromagnetic Induction (Statement only)
			11.4	Lenz's Law (Statement)
3 rd			11.5	Fleming's Right Hand Rule
2 nd		1 st	11.6	Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.
		2 nd	12.1	Chapter No.- 12 (Modern physics) LASER & laser beam (Concept and Definition)
		3 rd	12.2	Principle of LASER (Population Inversion & Optical Pumping)
		4 th	12.3	Properties & Applications of LASER
		5 th	12.4	Wireless Transmission – Ground Waves, Sky Waves, (Concept & Definition)
		6 th		Space Waves(Concept & Definition)

Coverage of Chapters up to the internal assessment (*2nd week of May*):

1, 2,3,4,5 & 6

Learning Resources:

Sl. No.	Name of the Book	Author Name	Publisher
01	Text Book of Physics	Barik, Das, Sharma	KP
02	Text Book of Physics XI & XII	PART-I & II	NCERT
03	Text Book of Physics	H.C Verma	Bharati Bhawan