BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERHAMPUR (GM.)

REGISTER FOR PROGRESS COURSE

Time / Day	9:05 TO 9:55		9:55 TO 10:45		11:35 TO 12:25
MON			Engg. Phy.		
TUE			Engg. Phy.		
FRI	Engg. Phy.				
SAT					Engg. Phy.

Year/ Session 1st/ 2023	Semester from Date: 20/03/2023 To Date: 26/06/2023
Semester & Branch	2nd Semester Electrical Branch (Sec-D)
Subject with Code	Engineering Physics (Th-2b)
Name of the Faculty Member	Miss Arpita Patra

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
MARCH	4th Week	20/03/23	Unit And Dimension 1.1 physical quantities - (Definition). 1.2 Definition of fundamental and derived units, System of units (FPS, CGS, MKS and SI units).
		21/03/23	1.3 Definition of dimension and dimenssional formulae of physical quantities.
		24/03/23	1.4 Dimensional equations and principle of homogenity. 1.5 Checking the dimensional Correctness of physical relation.
		25/03/23	Scalars And Vectors 2.1 Scalar and Vector quantities (definition and concept), Representation of a Vector - examples, types of Vectors.

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic	Mo
			2.2 Triangle and parallelogram law of vector addition (Statement only), Simple Numerical.	
M A R C H	5th Week	27/03/23	2.3 Resolution of vectors - Simple Numericals on Horizontal and vertical components.	
			2.4 Vector multiplication (Scalar product and Vector product of Vectors).	
			Kinematics	
		28/03/23	3.1 Concept of Rest and Motion.	
			3.2 Displacement, Speed, Velocity, Acceleration & Force. (Definition, Formula, dimension & SI units).	

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Month	Week	Class Day	Theory/Practical Topic
		31/03/23	3.3 Equation of Motion under Gavity (upward and downward motion) - no derivation.
APRIL	2nd Week	03/04/23	3.4. Circular motion: Angular displacement, Angular velocity and angular acceleration (definition, Formula and SI units).
		04/04/23.	3.5 Relation between:- (i) Linear and Angular Velocity, (ii) Linear and angular acceleration.
		08/04/23	3.6 Define projectile, Examples of projectile. 3.7 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.

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Month	Week	Class Day	Theory/Practical Topic	Mo
			Work And Friction	
		10/04/23	4.1 Work - Definition; Formula & SI units.	
APRIL	3rd Week	11/04/23	4.2 Friction - Definition & Concept. 4.3 Types of Friction (Static, dynamic), Limiting Friction (Definition with Concept).	
		15/04/23	4.4 Laws of Limiting Friction (only Statement, No experimental Verification).	
		17/04/23	4.5 Coefficient of friction:- Definition & Formula; Simple Numericals.	
	4th Week	18/04/23	4.6 Methods to reduce Friction.	

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Month	Week	Class Day	Theory/Practical Topic
APRIL	4th Week	21/04/23	Gravitation 5.1 Newtons law's of Gravitation:- Statement & Explanation. 5.2 Universal Gravitational Constant(G) :- Definition Unit and Dimension.
		22/04/23	5.3 Accelercation due to gravity (g):- Definition and Concept
	5th Week	24/04/23	5.4 Definition of mass and weight. 5.5 Relation between g and G
		25/04/23	5.6 Variation of g with altitude and depth (No derivation - only explanation). 5.7: Keplers laws of planetary Motion (Statement only).

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
APRIL	5th Week	28/04/23	Oscillations And Waves 6.1 Simple Harmonic Motion - (SHM) Definition & Examples. 6.2 Expression (Formula/Equation) for displacement, velocity, acceleration of a body/particle in SHM.
		29/04/23	6.3 Wave motion - Definition and Concept. 6.4 Transverse and longitudinal wave motion - Definition, Examples, & Comparison.
MAY	1st Week	01/05/23	6.5 Definition of different wave parameters - (Amplitude, wavelength, Frequency, Time period).

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
	1st Week	02/05/23	6.6 Derivation of relation between Velocity, frequency and wavelength of wave.
		06/05/23	6.7 Ultrasonics – Definition, properties & applications.
M A Y	2nd Week	08/05/23	Heat And Thermodynamics 7.1 Heat and temperature – Definition & difference. 7.2 Units of Heat (FPS, CGS, MKS & SI).
		09/05/23	7.3 Specific heat (Concept, definition, Unit, dimension, and Simple numericals) 7.4 Change of State (Concept), Latent Heat (Concept, definition, Unit, dimension & Simple numericals).

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
M A Y.	2nd Week	12/05/23	7.5 Thermal Expansion :- Definition & Concept. 7.6 Expansion of Solids :- (Concept)
		13/05/23	7.7 Coefficient of Linear, Superficial and Cubical expansion Solids - Definition & Units. 7.8 Relation between α, β & γ.
	3rd Week	15/05/23	7.9 Work and Heat - Concept & relation. 7.10 Joules Mechanical Equivalent of Heat (Definition, Heat). 7.11 First law of Thermodynamics (Statement and Concept only).

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Month	Week	Class Day	Theory/Practical Topic
			OPTICS
	3rd Week	16/05/23	8.1 Reflection & Refraction – Definition. 8.2 Laws of reflection and refraction (Statement only).
		20/05/23	8.3 Refractive index – Definition, Formula & Simple numerical. 8.4 Critical Angle and Total internal reflection – Concept, Definition & Explanation.
MAY		22/05/23	8.5 Refraction through prism. (Ray diagram & Formula only – No derivation).
	4th Week	23/05/23	8.6 Fiber optics – Definition, properties & Applications.
			Electrostatics & Magnetostatics
		26/05/23	9.1 Electrostatics – Definition & Concept. 9.2 Statement & Explanation of Coulombs Laws, Definition of unit charge. 9.3 Absolute & Relative permittivity (ε) – Definition, Relation & unit.

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Month	Week	Class Day	Theory/Practical Topic
	4th Week	27/05/23	9.4 Electric potential and Electric potential difference (Definition, Formula & SI units) 9.5 Electric Field, Electric field intensity (E) - Definition, Formula & unit.
M A Y	5th Week	29/05/23	9.6 Capacitance - Definition, Formula & unit. 9.7 Series & parallel Combination of Capacitors. [No derivation, formula for effective/combined/total Capacitance & Simple Numericals].
		30/05/23	9.8 Magnet, properties of a magnet 9.9 Coulomb's law in magnetism - Statement & explanation, unit pole (Definition).

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Month	Week	Class Day	Theory/Practical Topic
JUNE	1st Week	02/06/23	9.10 Magnetic field, Magnetic field intensity (H) – (Definition, Formula & SI unit) 9.11 Magnetic lines of force (Definition and properties). 9.12 Magnetic flux (φ) & Magnetic flux density (B) – Definition, Formula & unit.
		03/06/23	**Current Electricity** 10.1 Electric Current – Definition, Formula & SI units. 10.2 Ohm's law and its application.
	2nd Week	05/06/23	10.3 Series and parallel combination of resistors (No derivation, Formula for effective / combined / total resistance & Simple numericals).
		06/06/23	
		09/06/23	10.4 Kirchhoff's laws (Statement & Explanation with diagram).

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Month	Week	Class Day	Theory/Practical Topic
JUNE	2nd Week	10/06/23	10.5 Application of Kirchhof's Laws to wheatstone bridge - Balanced condition of wheatstone's bridge - Condition of balance (equation).
	3rd Week		Electromagnetic and Electromagnetic Induction
		12/06/23	11.1 Electromagnetism - Definition & Concept.
		13/06/23	11.2 Force acting on a Current Carrying Conductor placed in a uniform magnetic field, Flemings left hand rule.
		16/06/23	11.3 Faradays laws of Electromagnetic induction (Statement only). 11.4 henrys law (Statement)
		17/06/23	11.5 Flemings Right Hand Rule.
	4th Week	19/06/23	11.6 Comparison between Flemings Right Hand Rule and Flemings left Hand Rule.

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
JUNE	4th Week	23/06/23	Modern Physics 12.1 LASER & Laser beam (Concept and Definition) 12.2 Principle of Laser (population Inversion and optical pumping).
		24/06/23	12.3 properties & Applications of LASER.
	5th Week	26/06/23	12.4 Wireless transmission) - Ground waves, Sky waves, Space waves, (Concept & Definition).

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