

Govt. Polytechnic Hamirpur (H.P.)

Lesson Planning (Theory)

Branch : Computer Engg.

Subject : Applied Physics-I

Teacher : Dr. Subhash Chandra

Semester : First

Session : August 2024- November 2024

Class Room:

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks	
1	12	3rd, 4th and 5th week of August	Physical world, Units and Measurements	Physical quantities: fundamental and derived Units and systems of units (FPS, CGS and SI units) Dimensions and dimensional formulae of physical quantities Principle of homogeneity of dimensions, Dimensional equations and their applications (conversion from one system of units to other) (checking of dimensional equations and derivation of simple equations), Limitations of dimensional analysis. Errors in measurements (systematic and random), absolute error, relative error, error estimation and significant figures. Revision of whole Chapter	R1, R2, R3 and R4	
2	11	1st, 2nd and 3rd week of September	Force and Motion	Scalar and Vector quantities – examples, representation of vector, types of vectors. Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only) Scalar and Vector Product, Resolution of a Vector and its application to inclined plane (Rectangular components) and lawn roller. Linear momentum, its applications such as recoil of gun /rockets, Impulse and its applications. Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period. Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical). Centripetal and Centrifugal forces with live examples, Expression and applications such as banking of roads and bending of cyclist and Class test-I . Revision of whole Chapter	R1, R2, R3 and R4	
3	9	4th week of sept. and 1st, 2nd week of October	Work, Power and Energy	Work: Concept and units, examples of zero work, positive work and negative work Friction: concept, types, laws of limiting friction, coefficient of friction methods for reducing friction and its engineering applications Work done in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications. Energy and its units, kinetic energy, gravitational potential energy with examples and derivations Mechanical energy, conservation of mechanical energy for freely falling bodies, transformation of energy (examples). Power and its units, power and work relationship, calculation of power (numerical problems). Revision of whole Chapter	R1, R2, R3 and R4	

4	8	3rd, 4th week of October	Rotational Motion	<p>Translational and rotational motions with examples.</p> <p>Definition of torque and angular momentum and their examples.</p> <p>Conservation of angular momentum (quantitative) and its applications.</p> <p>Moment of inertia and its physical significance, radius of gyration for rigid body, Theorems of parallel and perpendicular axes (statements only).</p> <p>Moment of inertia of rod, disc, ring and sphere (hollow and solid) (Formulae only).</p> <p>Revision of whole Chapter</p>	R1, R2, R3 and R4
5	10	5th week of October and 1st, 2nd week of November	Properties of Matter	<p>Elasticity: Definition of stress and strain, different types of moduli of elasticity, Hooke's law, significance of stress-strain curve.</p> <p>Pressure: definition, units, atmospheric pressure, gauge pressure, absolute pressure.</p> <p>Fortin's Barometer and its applications.</p> <p>Surface tension: concept, units, cohesive and adhesive forces, angle of contact.</p> <p>Ascent Formula (No derivation), applications of surface tension, effect of temperature and impurity on surface tension.</p> <p>Revision of whole Chapter</p>	R1, R2, R3 and R4
6	8	3rd, 4th week of November	Heat and Thermometry	<p>Concept of heat and temperature.</p> <p>Modes of heat transfer (conduction, convection and radiation with examples).</p> <p>Scales of temperature and their relationship.</p> <p>Types of Thermometer (Mercury thermometer, bimetallic thermometer, Platinum resistance thermometer, Pyrometer) and their uses.</p> <p>Expansion of solids, liquids and gases.</p> <p>Coefficient of linear, surface and cubical expansions and relation amongst them.</p> <p>Co-efficient of thermal conductivity.</p> <p>Revision of whole Chapter</p>	R1, R2, R3 and R4

REFERENCE RESOURCES

- Applied -Physics-I by R. A. Banwat (R1)
- Khanna Publications (Hindi Medium)(A.P.-I) (R2)
- Modern ABC of Physics-I (R3)
- Katson Publications (A.P.-I) (R4)
- Wikipedia, edX, ed-tech, flipgurd, Ted etc.

Subhash Chand

Signature of Teacher with Date

(Subhash Chand)

for 16/11

Signature of H.O.D. with Date

Govt. Polytechnic Hamirpur (H.P.)
Practical Planning & Coverage

Branch : Computer Engg.
 Subject : Applied Physics-I Lab
 Teacher : Dr. Subhash Chand

Semester : First
 Session : August 2024 - Dec. 2024
 Laboratory : Applied Physics-I Lab

Pract. No.	Description of Practical	Reference for Procedures/ Write up	Likely Dates	Actual Dates	Signature
1	To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	3 rd and 4 th week of August		
2	To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	5 th and 1 st week of September		
3	To determine radius of curvature of a convex and a concave mirror/surface using a spherometer.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	2 nd and 3 rd week of September		
4	To verify triangle and parallelogram law of forces.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	4 th week of September and 1 st week of October		
5	To find the co-efficient of friction between wood and glass using a horizontal board.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	2 nd and 3 rd week of October		
6	To determine force constant of a spring using Hook's Law.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	4 th week of October		
7	To verify law of conservation of mechanical energy (PE to KE).	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	5 th and 1 st week of November		
8	To find the moment of inertia of a flywheel.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	2 nd week of November		
9	To find the coefficient of linear expansion of the material of a rod.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	3 rd week of November		
10	To determine atmospheric pressure at a place using Fortin's barometer	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	4 th week of November		
11	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales.	Applied Physics-I lab manual-2022 scheme/ Applied Physics-By RA BANWAT	5 th week of November		

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 Signature of Teacher
 (Subhash Chand)

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 Signature of H.O.D.

Govt. Polytechnic Hamirpur (H.P.)
Practical Planning & Coverage

Branch : Computer Engg.

Semester : First

Subject : SCA

Session : August 2024 to Dec. 2024

Teacher : Dr. Subhash Chand

Laboratory : SCA

Pract. No.	Description of Practical/Activity	Reference for Procedure	Likely Dates	Actual Dates	Signature
1	Awareness regarding voting/Essay Writing		3rd, 4th and 5th week of August		
2	Painting/Poster Making		1st, 2nd and 3rd week of September		
3	Sports/Cultural activity		4th of September & 1st and 2nd week of Oct.		
4	Campus beautification/Plantation		3rd, 4th and 5th week of Oct.		
5	Minor Project (Recycling/Waste material use)		1st, 2nd, 3rd and 4th week of September		

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