**Lesson plan**

Name of faculty - Naveen Kumar Pathak

Discipline - mech. , civil, electrical, Ece, cse

Semester - 1st

Subject - Applied physics

Lesson plan duration - 17 week

Work load (lecture/practical) per week (in hours) lectures – 02, practical - 04

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| week | Theory | | Practical | |
| Lecture day | Topic | Practical day |  |
| 1st | 1 | Definition of physics , physical quantities, fundamental and derived quantities | 1 | Familiarization of measurement instruments and their parts |
|  | 2 | Units and its type, fundamental and derived units |
| 2nd | 3 | System of units, CGS,MKS,FPS,SI system | 2 | To find diameterof solid cylinder using vernier calliper |
|  | 4 | Dimension, dimensional formulae, SI unit of physical quantities |
| 3rd | 5 | Dimensional equation, principle of homogeneity | 3 | To find internal diameter and depth of beaker using a vernier calliper and find its volume |
| 6 | Application of dimensional analysis, checking the correctness of physical equation, conversion of system of unit |
| 4th | 7 | Scalar and vector quantities, unit vector, position vector, collinear vector, co-planar vector, co-initial vector | 4 | To find the diameter of wire using screw gauge |
| 8 | Addition of vector, triangle and parallelogram law |
| 5th | 9 | Scalar and vector product | 5 | Revision and checked practical note book |
| 10 | Force and its units resolution of force |
| 6th | 11 | Newton’s law of motion and its example | 6 | To find thickness of paper using screw gauge |
| 12 | Linear momentum, law of conservation of linear momentum, impulse |
| 7th | 13 | Circular motion, definition of angular displacement, angular velocity. Angular acceleration | 7 | revision and checked practical note book |
| 14 | Frequency, time period, application of centripetal force in banking of road , rotational motion |
| 8th | 15 | Definition of torque, angular momentum, moment of inertia | 8 | To determine the thickness of glass strip using spherometer |
| 16 | Work, type of work and its examples |
| 9th | 17 | Friction – definition and its applications with examples | 9 | Revision and checked practical note book |
| 18 | Power and its unit and formula |
| 10th | 19 | Energy – definition and its unit , examples of transformation of energy | 10 | To determine radius of curvature of a given spherical surface by a spherometer |
| 20 | Kinetic energy –definition , formula and its derivation |
| 11th | 21 | Potential energy –definition , examples, formula and its derivation | 11 | To verify parallelogram law of forces |
| 22 | Law of conservation of mechanical energy for freely falling bodies |
| 12th | 23 | Simple numerical problem based on formula of power and energy | 12 | Revision and checked practical note book |
| 24 | Elasticity and plasticity , deforming force, restoring force, examples of elastic and plastic bodies |
| 13th | 25 | Definition of stress and strain , hooke’s law modulus of elasticity | 13 | To determine atmospheric pressure at a place using fortin’s barometer |
| 26 | Pressure , atmospheric pressure, pascal’s law gauge pressure |
| 14th | 27 | Surface tension, application of surface tension, effect of temperature on surface tension | 14 | Revision and checked practical note book |
| 28 | Viscosity – definition , examples, effect of temperature on viscosity |
| 15th | 29 | Definition of heat and temperature | 15 | To determine force constant of spring using hook’s law |
| 30 | Difference between heat and temperature |
| 16th | 31 | Principle and working of mercury thermometer | 16 | To measure the room temperature with the help of thermometer and its conversion in different scales |
| 32 | Mode of transfer of heat conduction and convection and radiation with examples |
| 17th | 33 | Properties of hear radiation | 17 | Revision and checked practical note book |
| 34 | Different scales of temperature and their relation ship |