**Lesson plan**

Name of faculty - Dr. Wasim Javed

 Discipline - Common for all branches

 Semester - 1st sem.

Subject - Applied physics

Lesson plan duration - 50 days

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

|  |  |  |
| --- | --- | --- |
| Lecture No. | Theory |  Practical  |
|  |  Topic | Practical day |   |
|  | Definition of physics , physical quantities, fundamental and derived quantities | 1 | Familiarization of measurement instruments and their parts |
|  | Units and its type, fundamental and derived units |
|  | System of units, CGS,MKS,FPS,SI system | 2 | To find diameterof solid cylinder using vernier calliper |
|  | Dimension, dimensional formulae, SI unit of physical quantities |
|  | Dimensional equation, principle of homogeneity | 3 | To find internal diameter and depth of beaker using a vernier calliper and find its volume |
|  | Application of dimensional analysis, checking the correctness of physical equation,  |
|  | conversion of system of unit |  |  |
|  | Scalar and vector quantities, unit vector, position vector,  | 4 | To find the diameter of wire using screw gauge |
|  | collinear vector, co-planar vector, co-initial vector |
|  | Addition of vector, triangle and parallelogram law |  |  |
|  | Scalar and vector product | 5 | Revision and checked practical note book |
|  | Force and its units resolution of force  |
|  | Newton’s law of motion and its example | 6 | To find thickness of paper using screw gauge  |
|  | Linear momentum, law of conservation of linear momentum, impulse  |
|  | Circular motion, definition of angular displacement, angular velocity. Angular acceleration | 7 | revision and checked practical note book |
|  | Frequency, time period, application of centripetal force in banking of road , rotational motion |
|  | Definition of torque, angular momentum, moment of inertia | 8 | To determine the thickness of glass strip using spherometer |
|  | Work, type of work and its examples |
|  | Friction – definition and its applications with examples | 9 | Revision and checked practical note book |
|  | Power and its unit and formula |
|  | Energy – definition and its unit , examples of transformation of energy | 10 | To determine radius of curvature of a given spherical surface by a spherometer |
|  | Kinetic energy –definition , formula and its derivation |
|  | Potential energy –definition , examples, formula and its derivation | 11 | To verify parallelogram law of forces |
|  | Law of conservation of mechanical energy for freely falling bodies |
|  | Simple numerical problem based on formula of power and energy | 12 | Revision and checked practical note book |
|  | Elasticity and plasticity , deforming force, restoring force, examples of elastic and plastic bodies |
|  | Definition of stress and strain , hooke’s law modulus of elasticity | 13 | To determine atmospheric pressure at a place using fortin’s barometer |
|  | Pressure , atmospheric pressure, pascal’s law gauge pressure  |
|  | Surface tension, application of surface tension,  | 14 | Revision and checked practical note book |
|  | effect of temperature on surface tension |
|  | Viscosity – definition , examples, effect of temperature on viscosity |
|  | Definition of heat and temperature | 15 | To determine force constant of spring using hook’s law  |
|  | Difference between heat and temperature  |
|  | Principle and working of mercury thermometer | 16 | To measure the room temperature with the help of thermometer and its conversion in different scales |
|  | Mode of transfer of heat conduction and convection and radiation with examples |
|  | Properties of hear radiation | 17 | Revision and checked practical note book |
|  | Different scales of temperature and their relation ship |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |
|  | Revision  |  |  |