Physics-I
F. Y. B. Sc. (2013 Pattern)
Mechanics, Heat And Thermodynamics

Aims and Objectives:
• To provide in depth knowledge of scientific and technological aspects of Physics
 • To familiarize with current and recent scientific and technological developments
• To enrich knowledge through problem solving, hand on activities, study visits, projects etc.
• To train students in skills related to research, education, industry, and market.
 • To create foundation for research and development in Electronics
• To develop analytical abilities towards real world problems
• To help students build-up a progressive and successful career in Physics

Outcomes:

Physics Paper I: Section I: Mechanics

Learning Outcomes:
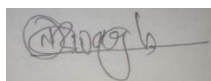On successful completion of this course students will be able to do the following:
 1. Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.
2. Use the free body diagrams to analyze the forces on the object.
 3. Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.
 4. Understand the concepts of elasticity and be able to perform calculations using them.
5. Understand the concepts of surface tension and viscosity and be able to perform calculations using them.
 6. Use of Bernoulli's theorem in real life problems.
7. Demonstrate quantitative problem solving skills in all the topics covered.

Physics Paper I: Section II: Heat and Thermodynamics

Learning Outcomes:
 After successfully completing this course, the student will be able to do the following:
 1. Describe the properties of and relationships between the thermodynamic properties of a pure substance.
2. Describe the ideal gas equation and its limitations.
3. Describe the real gas equation.
 4. Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.
5. Analyze the heat engines and calculate thermal efficiency.
 6. Analyze the refrigerators, heat pumps and calculate coefficient of performance
 7. Understand property 'entropy' and derive some thermo dynamical relations using entropy concept.
8. Understand the types of thermometers and their usage.

Subject Teacher

Principal
B.D.Kale Mahavidyalaya
Ghodegaon,Dist.Pune

Physics Paper II:
F.Y.B.Sc. (2013 Pattern)
Physics Principles Application And Electromagnetics

Aims And Objectives:

• To provide in depth knowledge of scientific and technological aspects of Physics

• To familiarize with current and recent scientific and technological developments

• To enrich knowledge through problem solving, hand on activities, study visits, projects etc.

• To train students in skills related to research, education, industry, and market.

• To create foundation for research and development in Electronics

• To develop analytical abilities towards real world problems

• To help students build-up a progressive and successful career in Physics

Outcomes:

Physics Paper II: Section I: Physics Principles and Applications

Learning Outcomes:

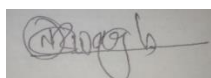On successful completion of this course students will be able to do the following:

1. To demonstrate an understanding of electromagnetic waves and its spectrum.

2. Understand the types and sources of electromagnetic waves and applications.

3. To understand the general structure of atom, spectrum of hydrogen atom.

4. To understand the atomic excitation and LASER principles.

5. To understand the bonding mechanism in molecules and rotational and vibrational energy levels of diatomic molecules.

6. To demonstrate quantitative problem solving skills in all the topics covered.

Physics Paper II: Section II: Electromagnetics

Learning Outcomes:

On successful completion of this course students will be able to do the following:

1. Demonstrate an understanding of the electric force, field and potential, and related concepts, for stationary charges.

2. Calculate electrostatic field and potential of simple charge distributions using Coulomb's law and Gauss's law.

3. Demonstrate an understanding of the dielectric and effect on dielectric due to electric field.

4. Demonstrate an understanding of the magnetic field for steady currents using Biot-Savart and Ampere's laws.

5. Demonstrate an understanding of magnetization of materials.

6. Demonstrate quantitative problem solving skills in all the topics covered

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