SATPUDA SHIKSHAN VA GRAMIN VIKAS SANSTHA'S
Bapumiya Sirajoddin Patel Arts, Commerce and Science College,
Kurha Road, Pimpalgaon Kale Tq. Jalgaon Jamod, Dist Buldhana
Minority Status Institution
Affiliated to Sant Gadge Baba Amaravati University, Amravati
Accredited with "B" Grade by NAAC

Department of Physics

Semester-I

Course Outcomes

Gravitation

After the completion of these courses students should be able to;

1: Know the Newton's law of gravitation.

2: To study variation of acceleration due to gravity at different places.

3: To study Kepler's laws of planetary motion.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Rotational Motion

: Know the translational, vibrational & rotational motion.

2: To find out moment of inertia of different body shapes.

3: To understand the concept of linear & angular momentum.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Oscillation I

1: Know the concept of simple harmonic motion

2: To derive & solve differential equation of S.H.M.

3: To study examples of S.H.M. like Compound pendulum, Kater's pendulum, etc.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Oscillations-II

1: Know the damped & forced harmonic motion.

2: To understand resonance & its types.

3: To study superposition of two S.H.M.s (parallel & perpendicular)

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Elasticity

1: Know the concept of elasticity & plasticity

2: To understand different elastic constants.

3: To determine elastic constant by different methods.

4: To understand above concepts through experiments in laboratory

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Viscosity

1: Know the viscous properties of fluid.

2: To understand Bernoulli's theorem, Reynolds's number.

3: To study property of matter: surface tension.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Semester-II

Course Outcomes

Ideal gas, Real gas & Transport phenomenon

1: Know the kinetic theory of gases.

2: To understand Brownian motion, Avogadro's number & specific heat.

3: To study Transportphenomenon in gases.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Laws of thermodynamics

1: Know the laws of thermodynamics.

2: To understand Carnot's heat engine & Carnot's theorem.

3: To study Entropy.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Liquification of gases

1: Know the Joule-Thomson effect.

2: To understand liquification of hydrogen & helium.

3: To study thermodynamic variables.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Motion of charged particles

1: Know the motion of charged particle in electric & magnetic fields.

2: To understand working principle of electron gun, Discharge tube & mass spectrograph.

3: To study linear accelerator & Cyclotron.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Network theorems

1: Know the network theorems.

2: To understand Ballistic galvanometer.

3: To study Varying current.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Alternating current

1: Know the concept of alternating current.

2: To understand applications of j-operator & complex number.

3: To study resonance & transformer.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students.(Numericals based on syllabus)

Semester-III Course Outcomes

Mathematical background & electrodynamics

1: Know the Scalar & Vector fields.

2: To understand Gradient, Divergence & Curl.

3: To study Ampere's law.

4: To understand above conceptsthrough experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Magnetostatics& Maxwell's equation

1: Know the Faraday's law.

2: To understand Maxell's equation.

3: To study Poynting theorem.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Solid state electronic devices-I

1: Know the semiconductors.

2: To understand Hall Effect.

3: To study different types of diodes.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Solid state electronic devices-II

1: Know the BJT.

2: To understand types & applications of FET.

3: To study IC OP-AMP.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Special theory of relativity

1: Know the special theory of relativity.

2: To understand length contraction, Time dilation.

3: To study Einstein's mass-energy relation.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Atmosphere & Geophysics

1: Know the structure of earth.

2: To understand Atmosphere.

3: To study earthquakes.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numerical based on syllabus)

Semester-IV

Course Outcomes

Geometrical Optics and interferences

1. To know the types of diffraction.
2. To understand diffraction through plane transmission grating.
3. To study zone plates.
4. To understand above concepts through experiments in laboratory.
5. To develop numerical solving technique in students.

Diffraction of Light

1.To understand diffraction phenomena and types.
2.To understand the construction and working of zone plate.
3.To understand the concept of plane diffraction grating and resolving power of grating.

Polarization of Light

1: Know the Polarization.

2: To understand Brewster's law.

3: To study Nicol's prism.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Laser

1: Know the mechanism of Laser.

2: To understand types & applications of laser.

3: To study concept of holography.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Fiber optics

1: Know the mechanism of Optical fiber.

2: To understand types & applications of optical fiber.

3: To study optical communication system.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Renewable energy sources

1: Know the types of renewable energy sources.

2: To understand concept of solar energy.

3: To study photovoltaic cell.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Semester-V

Course Outcomes

Quantum mechanics-I

1: Know the black body radiation.

2: To understand Plank's radiation law & photoelectric effect.

3: To study Compton effect & Heisenberg's uncertainty principle.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Quantum mechanics-II

1: Know the Schrodinger's wave equation.

2: To understand mathematical operator's.

3: To study motion of particle in rectangular box.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Atomic & molecular Physics

1: Know the different atomic models.

2: To understand quantum numbers.

3: To study Raman effect.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Nuclear Physics

1: Know the theory of nucleus.

2: To understand alpha & beta decay.

3: To study Nuclear reaction & reactor.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Hybrid parameters

1: Know the h-parameters.

2: To understand concept of amplifier.

3: To study Noise & distortion in amplifier.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Feedback in amplifier

1: Know the concept of feedback.

2: To electronic oscillators.

3: To study multivibrators.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Semester-VI

Course Outcomes

Statistical mechanics-I

1: Know the phase space, unit cell, micro & macro states.

2: To understand Boltzmann's entropy relation.

3: To study Maxwell-Boltzmann statistics & its applications.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Statistical mechanics-II

1: Know the concept of boson & fermions.

2: To understand Bose-Einstein statistics & its applications.

3: To study Fermi-Dirac statistics & its applications.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Crystallography

1: Know the crystalline & amorphous solids.

2: To understand different crystal structures & X-ray diffraction.

3: To study crystal defects.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Electrical properties of materials

1: Know the concept of drift motion.

2: To understand Fermi energy.

3: To study band structure in solids.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Magnetic properties of materials

1: Know the concept of magnetism.

2: To understand types of magnetic materials.

3: To study Hysteresis.

4: To understand above concepts through experiments in laboratory.

5: To develop numerical solving technique in students. (Numericals based on syllabus)

Superconductivity & Nano technology

1: Know the concept of superconductors.

2: To understand types of superconductors & BCS theory.

3: To study Basic concepts of nanotechnology.

4: To understand above concepts through experiments in laboratory.

-5: To develop numerical solving technique in students. (Numericals based on syllabus)

Programme Specific Outcome (PSO)

1. Students learn the basic mathematical tools, needed to understand different branches of Physics. They are trained to apply these techniques through numerical problem.

2. They are familiarized with hands-on training in the furnished and equipped laboratory for practical verification of the physical theories that they learn during class lectures.

3. Learn, design and perform experiments in the labs to demonstrate the concepts, principles and theories learned in the classrooms.

4. In physics, we study for different properties of natural objects, like mechanical, thermal, electrical, magnetic properties etc.

5. In Physics prepares the students for career as teachers or researchers in different branches in physics.

6. To highlight the importance of Physics as the most important discipline for sustaining the existing industries and establishing new industries to create job opportunities at all levels of employment.