

Kabi Jagadram Roy Government General Degree College, Mejia
Department of Physics
(Affiliated to Bankura University)
Programme Outcome, Programme Specific Outcome and Course Outcome for B.Sc. in
Physics (GE) for Academic Session 2022-23 following CBCS Pattern

The Physics Generic course at Department of Physics helps to create an academic base that eventually strengthen the students to understand the basic laws of physics and its imperative applications in various physical domains. The programme is designed and implemented in such a way that helps the students acquire scientific attitude, develop critical and analytical skills and research oriented aptitude along with understanding the conventional existing knowledge base in the subject. Apart from the main subjects of the programme, the students has options to relate the knowledge gained and connect it to the society.

Programme Outcomes (PO)

1. To provide strong foundation in basic sciences
2. Acquire the knowledge related to academics with facts and figures related to various subjects in pure sciences such as Physics, Mathematics, etc. which will enhance their learning.
3. Develop skills of observations and drawing logical inferences from the scientific experiments.
4. Students will grow their ability to tackle physics related problems. They will be able to apply their acquired knowledge related to various practical issues in their day-to-day life.
5. Students will acquire personal skills such as the ability to work both independently and in a group.
6. Understand the theories which describe the nature of physical phenomena and to establish them by experiments.
7. Students will be able to prepare themselves for the job oriented competitive examination.
8. Understand ethical principles and responsibilities of a physics graduate to serve the society.
9. Use the computer to learn ICT skills for knowledge communication and knowledge dissemination.
10. Think creatively to propose novel ideas in explaining facts and figures or providing new solution to the problems.

Programme Specific Outcomes (PSO)

1. Develop deep understanding of the basics of subjects like mechanics, properties of matter, e-m theory, environmental issues related to physics so that they can pursue higher studies.
2. Discover of physics concepts in other disciplines such as mathematics, computer science, chemistry etc.
3. Realize and develop an understanding of the impact of physics and science on society.
4. Students should have the skill of identifying the key factors and applying appropriate principles and assumptions in the formulation of physical problems.
5. Students should learn how to design and conduct an experiment demonstrating their understanding of the scientific method and processes.
6. After the completion of program, students will be able to have in-depth knowledge of basic concepts in physics.

7. Students will be able to apply the laws of physics in real life situations to solve the problems.
8. Identify their area of interest in academic and competitive fields related to their subject.
9. Acquire analytical and logical skills for higher Education and other Entrepreneurships
10. Enhance the their academic abilities, personal qualities and transferable skills which will give them an opportunity to develop as responsible citizens.

Course Outcomes (CO) for Physics (GE)

Semester I

Course Title: Mechanics, Electrostatics and Sound (GE T1)

Course Code : SHPHS/103/GE-1

Course ID : 12414

Course Outcomes:

1. Students will learn and develop the concepts of vector and basic knowledge of the vector differential operator ∇ and understand the operation on the scalar and vector field.
2. Students will Learn and realize about vector theorems like Divergence and Green theorem etc.
3. Students will develop the concepts on classical mechanics and enhance the basic knowledge of the non-inertial and inertial frame of reference, variable mass, rocket motion, special theory of relativity.
4. They will acquire knowledge about the elasticity of the material and the streamline and turbulent motion.
5. Enhance the capability to prepare and organize a presentation on the application of fundamental dynamics.
6. They can understand the relation between electrical charge, electrical field, electrical potential.
7. They can understand and realize the superposition of SHM collinearly and perpendicularly and can study the Beat ant Lissajous figures.

Course Title: Mechanics, Electrostatics and Sound (GE P1)

Course Code : SHPHS/103/GE-1

Course ID : 12424

Course Outcomes:

1. Student will learn how can use the screw gauge, slide callipers, microscope, telescope.
2. They are able know how experimentally measure the Young's modulus, coefficient of viscosity of liquid, acceleration due to gravity, spring constant.

3. They will acquire knowledge about Lissajous figures, coupled oscillations.
4. They can realize about the moment of inertia of body about the axis of rotation.

Semester II

Course Title: Electromagnetism and Thermal Physics (GE T2)

Course Code : SHPHS/203/GE-2

Course ID : 22414

Course Outcomes:

1. After completion of the course the students should understand the basic concepts about magnetic effect of current, basic concepts about different types of magnetic materials and electromagnetic induction.
2. This course will help the students to understand Maxwell's equations and electromagnetic wave propagation through vacuum and isotropic dielectric medium.
3. This course further enables the students to acquire knowledge about basic concepts of kinetic theory of gases and theory of radiation.
4. They will also gain knowledge about laws of thermodynamics and their application to different thermodynamic processes.
5. Students will also understand the fundamental concepts of statistical mechanics including some related distribution laws.

Course Title: Electromagnetism and Thermal Physics (GE P2)

Course Code : SHPHS/203/GE-2

Course ID : 22424

Course Outcomes:

On performing the laboratory experiments they should have a preliminary overview and hands-on experiences on how some common experimental equipment related to electricity, magnetism and thermal physics can be used.