DINAKRUSHNA COLLEGE, JALESWAR

DEPARTMENT OF PHYSICS

DEPARTMENT PROFILE

The Department of Physics is committed to undergraduate education in Physics with emphasis on conceptual clarity, mathematical formulation, experimentation, numerical problem solving and scientific inquiry. The department follows the academic direction of the NEP 2020-based Physics curriculum of Fakir Mohan University and seeks to provide experiential, skill-oriented and learner-centred education.

VISION

To foster a strong foundation in Physics through conceptual understanding, mathematical reasoning, experimental skills, scientific inquiry and application-oriented learning.

MISSION

- To provide learner-centred undergraduate education in Physics through theory, practical work and problem solving.
- To develop analytical, mathematical, computational and experimental skills.
- To integrate classroom concepts with laboratory observation, measurement and data analysis.
- To encourage multidisciplinary, skill-oriented, project-based and experiential learning in the spirit of NEP 2020.

NEP 2020-BASED PHYSICS CURRICULUM

The department's academic profile is aligned with the NEP 2020-based Physics syllabus listed by Fakir Mohan University for 2025. The curriculum combines core Physics knowledge with practical, skill-oriented, multidisciplinary and ability-enhancement learning.

- Mathematical Physics and Mathematical Methods
- Mechanics and Properties of Matter
- Electricity and Magnetism
- Oscillations, Waves and Optics
- Thermal Physics and Thermodynamics
- Analog and Digital Electronics
- Modern Physics
- Quantum Mechanics
- Electromagnetic Theory
- Statistical Mechanics
- Solid State Physics and related advanced Physics topics
- Practical Physics, laboratory work and experimental techniques
- Skill Enhancement, Multidisciplinary and Ability Enhancement components associated with the NEP 2020 undergraduate structure

FACULTY PROFILE

Faculty Member	Designation
Mr. Pradeep Kumar Roul	Reader in Physics

Mr. Byomakesh Dash	Lecturer in Physics
Mr. Kedarnath Mohanty	Honorary Lecturer in Physics
Mr. Debabrata Bera	Demonstrator

TEACHING & LEARNING APPROACH

- Concept-based classroom teaching with numerical and analytical problem solving.
- Laboratory experiments, measurements, uncertainty/error analysis and interpretation of experimental data.
- Seminars, presentations, assignments and project-based learning.
- Use of computational and numerical approaches wherever appropriate in Physics learning.
- Development of scientific communication, teamwork, critical thinking and problem-solving skills.

LABORATORY & PRACTICAL LEARNING

- Physics laboratory for undergraduate practical work and experimental learning.
- Laboratory-based training in measurement, instrumentation, electronics and experimental techniques.
- Academic resources supporting theory, practical and numerical learning.

STUDENT DEVELOPMENT

- Strengthening of conceptual and quantitative understanding of Physics.
- Development of experimental, computational and analytical abilities.
- Encouragement of scientific curiosity, independent learning and critical thinking.
- Preparation for higher studies, research-oriented learning and career opportunities in Physics and allied fields.

DEPARTMENTAL ACADEMIC FOCUS

The Department of Physics aims to create an academically stimulating environment in which students learn Physics through a balanced combination of theory, mathematics, experiments, computation, problem solving and scientific communication. The department encourages continuous academic development consistent with the learner-centred and multidisciplinary objectives of NEP 2020.