

RRDS Government Degree College

Department of Physics

Program Outcomes (POs)

PO1. Critical Thinking: Apply critical thinking and enhance learning in the three major subjects of their choice with scientific reasoning and analytical skills.

PO2. Problem solving: Think logically and organize task into a structured form for problem solving by applying the knowledge of basic science.

PO3. Effective communication: To develop the ability of effective communication of scientific information in written and oral format.

PO4. Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.

PO5. Ethics: Apply ethical, moral and social values in personal and professional life leading to holistic development of the individual.

PO6. Environment and sustainability: Develop interdisciplinary approach to provide better solution and innovative ideas for sustainable development and conservation of natural resources.

PO7. Self-directed and lifelong learning: Recognize the need for and have the ability to engage in independent, lifelong learning and adapt to technological changes to be globally competent.

Program Specific Outcomes (PSOs)

PSO1. Gain knowledge and understanding of definitions, concepts, theorems in Algebra, Analysis, Differential Equations and Linear Algebra.

PSO2. Use Mathematical software leading to professional development.

PSO3. Acquire logical and analytical skills to apply the concepts to model and solve real life problems in related areas.

PSO4. Attain sound knowledge in the areas of Mechanics, Thermal Physics, Optics, Electromagnetism, Quantum Physics, Solid state Physics for pursuing higher education and research.

PSO5. Demonstrate basic knowledge of Physics in developing logical tools and models to draw valid solutions.

PSO6. Analyze and solve problems using reasoning skills based on concepts of Physics.

PSO7. Design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, cloud computing, IoT and data analytics of varying complexity.

PSO8. Engage in professional development in the fields of Information Technology and Computer Science.

PSO9. Know about computing principles and business practices employed as software solutions in industries.

Course Outcomes (COs)

Course – 1 Mechanics, Waves and Oscillations

- To understand basic theories related with properties of matter and its applications to determine values of various physical quantities associated with matter.
- Be able to apply knowledge of the properties of matter to explain natural physical processes and related technological advances.
- To learn about fundamentals of verbal and mathematical concepts of waves and oscillations
- We should make the students to know their skills required to get the information from the syllabus and use them in a proper way

Course – 2 Wave Optics

- Understand the nature of light and principles of Laser and holography.
- Analyse the intensity variation of light due to interference, diffraction and polarization.
- Solve problems in Optics by selecting the appropriate equations and performing numerical or analytical calculations.
- Student can able to operation of optical devices including polarizers, interferometers, and Lasers

Course – 3 Heat and thermodynamics Lab

Students will be able to Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.

- They develop the ability to apply the knowledge acquired in the classroom and laboratories to specific problems in theoretical and experimental Physics.
- To apply the theories learnt and the skills acquired to solve real time problems
- To understand the concepts and significance of the various physical phenomena

Course – 4 Electricity, Magnetism & Electronics

- To learn about Gauss law and solve the electric field and magnetic field for various geometric objects and to learn basic electronic concepts in analog and digital theory.
- To be Explain all the topics of Experiments, Concepts and Derivations to the student
- Apply the principles of electronics in day to day life.
- Encourage all the students to study higher educational courses in reputed institutes and to enrich the students with creative, logical and analytical skills and to motivate the students towards research side

Course – 5 Modern Physics

To Create awareness on the topics of Atomic & Molecular Physics, Quantum mechanics, Nuclear Physics, and Solid state physics.

- To be Explain all the topics of Experiments, Concepts and Derivations to the student.
- Explain the basic principles of quantum mechanics and apply to Atomic, Molecular structure of energy levels etc..
- Motivate all the students to pursue PG courses in reputed institutes and to endow the students with creative and analytical skills; this will equip them to become entrepreneurs

Course – 6 Applications of Electricity & Electronics Lab

1. List out, identify and handle various equipment in Electrical & Electronics laboratory.
2. Learn the procedures of designing simple electrical circuits.
3. Demonstrate skills on the utility of different electrical components and devices.
4. Acquire the skills regarding the operation, maintenance and troubleshooting of various Devices in the lab.
5. Understand the different applications of Electromagnetic induction

Course – 7 Electronic Instrumentation

1. Identify various facilities required to set up a basic Instrumentation Laboratory.
2. Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.
3. Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc. through hands on experience.
4. Understand the Principle and operation of different display devices used in the display systems and different transducers
5. Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse oxymeter etc. and know the handling procedures with safety and security.