OFFICE, PRINCIPAL GOVERNMENT TULSI COLLEGE, ANUPPUR
Affiliated to Awadhesh Pratap Singh University Rewa (MP)
Registered Under Section 2 (F) & 12 (B) of UGC Act

E-mail: hegtdcano@mp.gov.in ☎9893076404

Program Outcome B.Sc. Physics

Programme (B.Sc.) Outcomes (Learning Outcomes)

Students taking admission to this program of B.Sc. are expected to get equipped with following outcomes :-

PO-1 Explaining the scientific principles and methods.

PO-2 Inculcating scientific thinking and awareness among the students.

PO-3 Ability to communicate with others in regional language and in English.

PO-4 Ability to handle the unexpected situation by critically analyzing the problems.

PO-5 Understanding the issues relating to nature and environmental contexts and sustainable development.

PO-6 Basic concept learning through experiments are useful in daily life.

Course Outcomes:- B.Sc. Physics

CO-01 Identifying and describing physical system with their professional knowledge.

CO-02 Developing their scientific intuition , ability and techniques to tackle problems either theoretical or experimental in nature.

CO-03 Knowlege of general Physics like basic mathematical concept ,vector analysis,Mechanics,sound,relativity,thermodynamics and statistics,

CO-04 Students also aquire the detail knowledge about light (Optics), elecro and magneto statics with electrodynamics.

CO-05 Final year students gets special concept like Quantum Mechanics, Spectroscopy, Solid State and Semiconductors theory with Nano technology.

CO-06 Learning through experiments about the theoretical concept of basic laws of Physics

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Programme (B.Sc. –Physics) Structure

I Year Paper I:-Mathematical Physics , Mechanics and Properties Of Matter

Paper II : Thermodynamics and Statistical Physics

II Year Paper I:-Optics

Paper II : Electrostatics , Magnetostatics and Electrodynamics

III Year Paper I:-Quantum Mechanics and Spectroscopy

Paper II : Solid State, Semiconductor Devices and Nano Material science

I Year Paper I:-Mathematical Physics , Mechanics and Properties Of Matter Paper II : Thermodynamics and Statistical Physics

Learning Objectives:

1. To provide students the ability to hone the mathematical skills necessary to approach problems in advanced physics courses.

2. Student should be able to understand basic theory of Matrix algebra, Special functions, Fourier series and integral transforms.

Course Outcomes:

After successfully completing the course, student will be able to:

1. Have a good grasp of the basic elements of important integral theorems.

2. Students will understand the applications of vector space, matrix algebra and special functions.

3. Have learned how to expand a function in a Fourier series, and under what conditions such an expansion is valid. Students will be aware of the

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अनूपपुर

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connection between this and integral transforms (Fourier and Laplace)and be able to use the latter to solve mathematical problems relevant to the physical sciences.

4. Have practiced formulating good questions and explaining to others.

II Year Paper I:-Optics

Paper II : Electrostatics , Magnetostatics and Electrodynamics

Learning Objectives:

1. To have an appreciation for the modern aspects of equilibrium and non-equilibrium statistical physics.

2. To describe the features and examples of Maxwell-Boltzmann, Bose-Einstein and Fermi- Dirac statistics.

Course Outcomes:

After successfully completing the course, student will be able to:

1. Find the connection between the statistics and the thermodynamics.

2. Learn logical consequences of the postulates of statistical mechanics.
3. Learn statistics of ensemble and differentiate between various types of ensemble.

4. Understand the concept of phase space and its volume.

5. Differentiate between classical and quantum statistics

6. Explain Brownian motion i.e. motion under fluctuating force

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III Year Paper I:-Quantum Mechanics and Spectroscopy

Paper II : Solid State, Semiconductor Devices and Nano Material science

Learning Objectives:

To acquire mathematical skills, require to develop theory of quantum mechanics. 2. To develop understanding of postulates of quantum mechanics and to learn to apply them to solve some quantum mechanical systems. 3. To offer systematic methodology for the application of approximation methods to solve complicated quantum mechanical systems.

Course Outcomes:

After successfully completing the course, student will be able to:

1. Understand historical aspects of development of quantum mechanics.

2. Understand and explain the differences between classical and quantum mechanics.

3. Understand the central concepts and principles in quantum mechanics, such as the Schrodinger equation, the wave function and its statistical interpretation, the uncertainty principle, stationary and non-stationary states, time evolution of solutions, as well as the relation between quantum mechanics and linear algebra including understanding of elementary concepts in statistics, such as expectation values and variance. They will master the concepts of angular momentum and spin, as well as the rules for quantization and addition of these. Hence, they will be able to solve the complex systems by approximation method.

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PAPER CODE: PHY (105,205,305,&405)
PHYSICS PRACTICAL LABORATORY

1. Acquire the appropriate data accurately and keep systematic record of laboratory activities
2. Interpret findings using the correct physical scientific framework and tools.
3. Prepare professional quality textual and graphical presentations of laboratory data and computational results.
4. Evaluate possible causes of discrepancy in various topics of practical experimental observations, results in comparison to theory.

Course Outcomes:

Students will have achieved the ability to:

1. Learn various experimental and computational tools thereby developing analytical abilities to address real world problems like electricity ,non electricity, general and special (Digital Electronics and Microprocessor)
2. Measurement of Physical parameters and graphical presentation of characteristics with analysis of semiconducting and general apparatus devices.
3. Adopt the skills related to research, education, and industry- academia.
4. Students are able to study and explain the theoretical concept of special equipment like Hall Effect,Air Trac, CRO, Four Probe ,R-C Coupled & Operational Amplifier, Theorem Board , and e/m apparatus.

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