Goswami Tulsidas Govt. P.G. College, Karwi, Chitrakoot

SUBJECT: Physics

Course outcomes NEP -2020{B.Sc.PHYSICS}

Programme Outcomes

B.Sc.1st year

SEM -1 -Mathematical Physics & Newtonian Mechanics{Theory}

Mechanical Properties of Matter{Practica}

SEM-2 Thermal Physics & Semiconductor Devices Physics{ Theory}

Thermal Properties of Matter & Electronic Circuits {Practical}

Recognize the difference between scalars, vectors, pseudo-scalars and pseudo-vectors. Understand the physical interpretation of gradient, divergence and curl. Comprehend the difference and connection between Cartesian, spherical and cylindrical coordinate systems. Know the meaning of 4-vectors, Kronecker delta and Epsilon (Levi Civita) tensors. Study the origin of pseudo forces in rotating frame. Study the response of the classical systems to external forces and their elastic deformation. Understand the dynamics of planetary motion and the working of Global Positioning System (GPS). Comprehend the different features of Simple Harmonic Motion (SHM) and wave propagation

Heat and thermodynamics: This paper also makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter. The students also learn how laws of Heat and thermodynamics: This paper also makes the students able to understand the basic physics of heat and temperature and their relation with energy, work, radiation and matter. The students also learn how laws of thermodynamics are used in a heat engine to transform heat into work. The course contains the study of laws of thermodynamics, thermodynamic description of systems,

thermodynamic potentials, kinetic theory of gases, theory of radiation and statistical mechanics.

B.Sc. 2nd Year

SEM -3 Electromagnetic Theory & Modern Optics { Theory}

Demonstrative Aspects of Electricity & Magnetism { Practical}

SEM-4 Perspectives of Modern Physics & Basic Electronics { Theory}

Basic Electronics Instrumentation { Practical}

Electricity and Magnetism : It gives an opportunity for the students to learn about one of the fundamental interactions of electricity and magnetism, and electromagnetic force. The paper contains electrostatics, magnetism, electromagnetic induction and Maxwell's equations etc .

Electronics and Solid State Device – The students would gain the knowledge of Basic Electronics circuits, network theorems and measuring instruments: They would know about common solid state devices: Semiconductor diodes and transistors. The topics also include the Rectifiers, Filters and their applications, number systems and logic gates which are foundation blocks of digital electronics

B. Sc. 3rd Year

SEM 5 –Paper -1 Classical & Statistical Mechanics { Theory}

Paper-2 Quantum Mechanics & Spectroscopy { Theory}

Practical Paper - Demonstrative Aspects of Optics & Lasers

SEM 6 - Paper-1 Solid State & Nuclear Physics{ Theory}

Paper-2 Analog & Digital Principles & Applications { Theory}

Practical Paper- Analog & Digital Circuits

Understand the concepts of generalized coordinates and D'Alembert's principle. Understand the Lagrangian dynamics and the importance of cyclic coordinates. Comprehend the difference between Lagrangian and Hamiltonian dynamics. Study the important features of central force and its application in Kepler's problem. Recognize the difference between macrostate and microstate. Comprehend the concept of ensembles. Understand the classical and quantum statistical distribution laws. Study the applications of statistical distribution laws.

PROGRAMME SPECIFIC OUTCOMES: This undergraduate course in Physics Would provide the opportunity to the students:

- To understand the basic laws and explore the fundamental concepts of physics.

- To carry out experiments related to mechanics, electricity and magnetism, heat and thermodynamics, Optics and Electronics understand the laws and concepts of Physics.And also get familiar with various measuring instruments would learn the importance of accuracy of measurements.
- To understand the concepts and significance of the various physical phenomena.
- To acquire a wide range of problem solving skills.

The course is very useful for the students.