

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM: - B.Sc.

COURSE: - B.Sc. I YEAR

PAPER I: - Mechanics –

OUTCOME:-

1. Parameters defining the motion of mechanical systems and their degree of freedom.
2. Centre of mass and inertia tensor of mechanical system.
3. Application of the vector theorems of mechanics and interpretation of their results.
4. Newton's laws of motions and conservation principals and it's applications are studied under this paper.

PAPER II: - Oscillation And Waves –

OUTCOME:-

1. To understand the concepts of mechanics acoustics and properties of matter.
2. Use of Lissajous figure to understand simple harmonic vibrations of same frequency and different frequency.
3. To understand the physical interpretation of S.H.M.

PAPER III: - Electricity And Magnetism -

OUTCOME:-

1. It gives a clear view on fundamental laws and concepts of electricity and magnetism.
2. It describes the properties of Static, Electric and magnetic fields and shows how the developed.
3. It gives easy ways to understand the Electromagnetic waves and their properties.

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM: - B.Sc.

COURSE: - B.Sc. II YEAR

PAPER I : - Thermal Physics -

OUTCOME –

- 1. Student will learn about the knowledge of areas of the Thermal Physics.**
- 2. Student will demonstrate knowledge based competencies in the field on Thermodynamics and Quantum Physics.**

PAPER II : - Optics –

OUTCOME:-

- 1. Student will learn about the principle of the image information [UNIT I &II].**
- 2. Student will learn about the practical concept by UNIT IV .**
- 3. It gives basic difference between Fresnel and Fraunhofer diffraction and ideas of interference and polarization.**

PAPER III : - Electronics -

OUTCOME:-

- 1. The course will provide the basic ideas of semiconductors and difference among conductors, semiconductors and insulators.**
- 2. Practical knowledge about FET, MOSFET, BJT and Amplifiers.**
- 3. Introduction to Communication Theory.**
- 4. The course provides the knowledge about Logic Gates.**

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM:- B.Sc.

COURSE: - B.Sc. III YEAR

PAPER I: - Mathematical Physics and Classical Mechanics -

OUTCOME:-

1. The outcome of this course is to introduce students to the methods of Mathematical Physics
2. The course will develop the skill required to solve the problems in Quantum Mechanics, Electrodynamics and other areas of Physics.
3. This course will provide the knowledge of Classical Mechanics at an advanced level.

PAPER II: - Quantum Mechanics –

OUTCOME:-

1. The course gives the introduction about the Quantum Mechanics [UNIT I&II].
2. It describes the students about the Hydrogen Atoms and Rigid Rotator and quantization of Angular Momentum.
3. It provides the deep knowledge of non-relativistic quantum mechanics.

PAPER III: - Statistical Mechanics and Modern Physics -

OUTCOME:-

1. The course will help the students to understand quantum and classical statistical mechanics for an ideal system.
2. It gives deep knowledge about Modern Physics.

PAPER IV: - Spectra of Atoms and Molecules -

OUTCOME:-

1. The learning outcome of this course is to use as a tool for studying the structure of atoms and molecules.
2. Spectroscopy provides an analytical method of finding the constituent in material having unknown chemical composition.
3. Introductory idea about the Raman spectra and its application.

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM:- M.Sc.

COURSE: - M.Sc. I SEMESTER

PAPER I: - Vector & Tensor Analysis and Group Theory -

OUTCOME:-

1. The objective of this course is to expose students to the mathematical applications of vector and tensor algebra to handle difficult problems.
2. It provides the physical and chemical interpretation of molecular structure.

PAPER II: - Quantum Mechanics-I-

OUTCOME:-

1. It is useful to understand the principal of quantum mechanics to calculate observables on wave functions.
2. The students are able to apply the variational method, time independent and dependent perturbation theory to solve problems.
3. It provides the deep knowledge of non-relativistic quantum mechanics.

PAPER III: - Special Theory of Relativity and Electromagnetic Theory -

OUTCOME:-

1. It is useful to understand the relativistic mechanics in four dimensional formulations.
2. It is useful to formulate major changes in the time, space, mass and energy to understand relativity in reference frames.

PAPER IV: - Electronics -

OUTCOME:-

1. Students will learn about the applications of the operational amplifier.
2. The outcome of this course to know about the fundamentals in the development of digital electronics. [UNIT III]
3. It gives knowledge about various applications of logic family's elements such as TTL, RTL, DTL, ECL, FAN IN FAN OUT.

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM:- M.Sc.

COURSE: - M.Sc. II SEMESTER

PAPER I: - Mathematical Physics -

OUTCOME:-

1. This course helps the students to use complex analysis in solving mathematical problems.
2. To use the orthogonal polynomial, other special functions, Fourier series and integral transformation.
3. It gives deep knowledge about complex variables.

PAPER II: - Solid State Physics –

OUTCOME:-

1. The outcome of this course is to try to know how the macroscopic properties of solids relate from their microscopic properties.
2. It provides the wide spectrum of theoretical approach to model the mechanical, thermal, optical properties of solid material
3. It provides the knowledge about designing of solid crystal structure.

PAPER III: - Thermodynamics and Statistical Physics -

OUTCOME:-

1. The students can recover the laws of thermodynamics equipartition theorem from the statistical description using microstates.
2. Students use the partition function for calculation about the canonical ensembles.
3. Students drive Bose Einstein conduction theory.

PAPER IV: - Molecular Spectroscopy -

OUTCOME:-

1. The student can recognize the relationship between molecular spectra and molecular properties.
2. Students can know about principle experimental setup and applications of various spectroscopy techniques.
3. Student can learn about molecular structure of different molecules.

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM:- M.Sc.

COURSE: - M.Sc. III SEMESTER

PAPER I: - Computational Techniques -

OUTCOME:-

1. To understand how to apply the numerical methods to find solutions of algebraic equations using different methods under different conditions.
2. One can learn various interpretations finite different concepts.
3. The student learns the concept of FORTRAN programming and its applications to numerical analysis.

PAPER II: - Nuclear & Particle Physics –

OUTCOME:-

1. The students introduced to the basic tenants of nuclear physics and particle physics.
2. Students well versed by the basic building blocks of nature and the four fundamental interactions.
3. It provides the deep knowledge about nuclear science.

PAPER III: - Quantum Mechanics-II -

OUTCOME:-

1. The course provides the understanding of the effects of special relativity in quantum mechanics and give an introduction into quantum field theory.
2. The students are able to explain Dirac equation and its free particle solutions..
3. The students are able to explain canonical momentum and the quantization of fields.

PAPER IV: - Electronics-I-

OUTCOME:-

1. The course provides the understanding of, to convert different type of codes and number system which are used in digital communication and computer system.
2. Basic ideas of flip-flops register and counter.
3. To understand the architecture of 8085 microprocessor.

PROGRAM OUTCOME AND COURSE OUTCOME

PROGRAM:- M.Sc.

COURSE: - M.Sc. IV SEMESTER

PAPER I: - Electrodynamics and Plasma Physics -

OUTCOME: –

1. Students gained a clear understanding of Maxwell's equations and electromagnetic boundary.
2. Students can understand the rather complex physical phenomena observed in Plasma.
3. Students have good insight into plasma instabilities and turbulence .

PAPER II: - Modern Optics –

OUTCOME:-

1. The course provides the working and construction of LASERS (Ruby, He-Ne, CO₂) and the principle of Holography.
2. The students learn about the fields of non-linear optics, exploring the physical mechanisms, applications and experimental techniques.
3. It provides the knowledge about the fiber optics.

PAPER III: - Condensed Matter Physics -

OUTCOME:-

1. The course treats functional material from an experimental view point, solid state theory and their properties.
2. The students understand the basic features, theories and applications of superconductors.
3. Students get the basic idea of liquid crystal and nanomaterials.

PAPER IV: - Electronics-II -

OUTCOME:-

1. This course provides the determination of the capacity of a channel with given bandwidth (Shannon-Hartley theorem).
2. It explains different characteristics of an antenna and determine radiation fields based on fundamental principle and laws of electromagnetic.