COURSE OUTCOME

DEPARTMENT OF PHYSICS

SL. NO.	PAPER TITLE	PAPER CODE	COURSE OBJECTIVES	COURSE OUTCOMES
1	MATHEMATICAL PHYSICS-I	CORE-I	The objective of this course is to acquaint the students with plotting of functions, vector algebra, orthogonal curvilinear coordinates, and vector calculus.	Students will be able to learn the curvilinear coordinates which have applications in problems with spherical and cylindrical symmetrices. They will learn the Dirac delta function and its properties. They will develop an understanding of how to formulate a physics problem and solve mathematical equation risen out of it.
2	MECHANICS	CORE-II	The objective of this course is to Rotational dynamics, elasticity, fluid motion, central force motion, oscillation, special theory of relativity.	Students will be able to understand laws of motion and their application to various dynamical situations , phenomena of collisions, principles of elasticity and simple principles of fluid flow. They will develop the skills to understand and solve the equations of Newtonian gravity and central force problem.
3	ELECTRICITY AND MAGNETISM	CORE-III	The objective of this course is to acquaint the students with Electric field, magnetic field, dielectric properties of matter, electrical circuits, network theorem	Students will be able to apply Gauss's law of electrostatics to solve problems, explain the relationship between electric and magnetic fields and will be able to verify various circuit laws, network theorems using simple electric circuits.
4	WAVES AND OPTICS	CORE-IV	The objective of this course is to acquaint the students with Geometric optics, wave motion, interference, Fraunhofer diffraction	Students will be able to apply basic knowledge of principles and theories about the behaviour of light and the physical environment to conduct experiments. They will use the principles of wave motion and superposition to explain the physics of polarization, interference and diffraction. The students will be able to understand the various optical phenomena, principles, working and applications.

5	**MATHEMATICAL PHYSICS-II**	**CORE-V**	The objective of this course is to acquaint the students with Periodic function and its properties, special function, polynomials, partial differential equation.	Students will learn the Fourier analysis of periodic functions and their applications in different problems. They will learn the special functions such as Legendre and Hermite polynomials and their applications. They will acquire knowledge of methods to solve partial differential equations with the examples of important PDEs in Physics.
6	**THERMAL PHYSICS**	**CORE-VI**	The objective of this course is to acquaint the students with Laws of thermodynamics, thermodynamics potentials, maxwells thermodynamics relations, kinetic theory of gases.	Students will be able to comprehend the basic concepts of thermodynamics, the first and second law of thermodynamics, the concept of entropy and the associated theorems, thermodynamic potentials and their physical interpretations. They will learn about Maxwell's thermodynamic relations, the real gas equations, Vander waal equation of state, the Joule Thomson effect.
7	**ANALOG SYSTEMS AND APPLICATIONS**	**CORE-VII**	The objective of this course is to acquaint the students with Semiconductor diodes, and its applications, bipolar junction transistors, amplifiers, coupled amplifiers	The students will know about bipolar junction, transistor and its applications.
8	**MATHEMATICAL PHYSICS-III**	**CORE-VIII**	The objective of this course is to acquaint the students with Details of complex analysis, integral transform I and II, properties of Laplace transforms	Students will learn about the complex numbers, their properties and functions; Fourier transform, their properties and applications and Laplace transform, their properties and applications.
9	**ELEMENTS OF MODERN PHYSICS**	**CORE-IX**	The objective of this course is to acquaint the students with Atomic spectra and models, wave packets, uncertainity	The students will know about atomic spectra, model, wave packets and nuclear physics.

			principle, nuclear physics I and II	
10	**DIGITAL SYSTEMS AND APPLICATIONS**	**CORE-X**	The objective of this course is to acquaint the students with Integrated circuits, Boolean algebra, data processing circuits, introduction to computer organization,	The students will know about digital circuit and Boolean algebra.
11	**QUANTUM MECHANICS AND APPLICATIONS**	**CORE-XI**	The objective of this course is to acquaint the students with Schrodinger's equation, atoms in electric and magnetic fields	The students will know about Schrodinger's equation and atoms in electric and magnetic field.
12	**SOLID STATE PHYSICS**	**CORE-XII**	The objective of this course is to acquaint the students with Crystal structure, elementary lattice dynamics, magnetic properties of matter, elementary band theory, superconductivity	The students will know about crystal structure and elementary band theory.
13	**CLASSICAL DYNAMICS**	**DSE-I**	The objective of this course IS ON application in solving problems of interest to physicist, students are to be examined on the basis of problems.	At the end of the course the students will know about Alembert's principles, Hamilton's principles, special theory of relativity, four vectors
14	**NUCLEAR AND PARTICLE PHYSICS**	**DSE-II**	The objective of the course is to acquaint the students with	The students will Know about the intrinsic properties of nucleus, basic details of

			properties of nuclei, radioactive decays, nuclear models, detective for nuclear radiations, particle physics.	radioactive decays, details of detector for radioactive radiations, PMT Particle and its families
15	**ELECTROMAGNETIC THEORY**	**CORE-XIII**	The objective of this course is to acquaint the students with Maxwells equation, wave propagation in unbounded and bounded media, polarization of electromagnetic waves.	The students will know about Maxwell's equation and wave propagation.
16	**STATISTICAL MECHANICS**	**CORE-XIV**	The objective of this course is to acquaint the students with Classic statics I and ii, quantum statics I and ii	The students will know about quantum statistics and classic statics.
17	**NANOMATERIALS AND APPLICATIONS**	**DSE-III**	The objective of this course is to acquaint the students with Nanoscale systems , synthesis of non-structure materials, characterization, applications of nanoparticles	The students will know about Nanostructure. Physical vapor deposition and chemical vapor deposition, x-ray diffraction. Application of nanoparticles.
18	**MECHANICS AND PROPERTIES OF MATTER, OSCILLATION AND WAVES, THERMAL PHYSICS, ELECTRICITY AND MAGNETISM AND ELECTRONICS**	**GE-I**	The objective of this course is to acquaint the students with Mechanics and properties of matter, oscillations and waves, thermal physics, electricity and magnetism	The students will know about properties of matter, details of simple harmonic waves details of thermal physics gauss law of electrostatics, p and n types semiconductors, pnp and npn junction

19	**OPTICS, AND SPECIAL THEORY OF RELATIVITY, ATOMIC PHYSICS, QUANNTUM MECHANICS, NUCLEAR PHYSICS**	**GE-II**	The objective of this course is to acquaint the students with Optics I and ii, atomic physics, quantum mechanics, nuclear physics, relativity	The students will know about Details of electromagnetic nature of light classical physics Bohr's theory of hydrogen atom Heisenberg's uncertainty relations Properties of nucleus charge

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HEAD OF THE DEPARTMENT

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