Suggested course outcome of the UG Physics CBCS syllabus under Bodoland university by Dept. of Physics, Kokrajhar Govt. College, Kokrajhar

Semester	Paper Code	Paper Title	Course Outcome
I	PHY-101H	C-1: Mathematica Phyiscs-I	Students who successfully complete this course will have a better understanding of vectors and their uses in numerous domains, differential equations and their uses, various coordinate systems, and the concepts of probability and error.
	PHY-102H	C-2: Mechanics	Students should be able to comprehend Newtonian motion, Galilean transformations, projectile motion, work & energy, Simple harmonic oscillations, motion under a central force, elastic and inelastic collisions, and special theory of relativity upon successfully completing the course.
	PHY-101R	GE-1: Mechanics	Students are expected to understand the function of vectors and coordinate systems in physics, solve ordinary differential equations, apply the laws of motion to various dynamical situations, understand the transformations of inertial reference frames, understand the concept of conservation of energy, momentum, and angular momentum, and use it to solve fundamental problems, as well as observe simple harmonic motion, motion under a central force, and comprehend time dilation and length.
II	PHY-201H	C-3: Electricity & Magnetism	Students who successfully complete this course will be able to comprehend electric and magnetic fields in matter, magnetic characteristics of matter, electromagnetic induction, Kirchhoff's law applications in various circuits, and network theorem applications in circuits.
	PHY-202H	C-4: Waves and Optics	Students will be able to comprehend superposition of harmonic oscillations, various wave motion, interference and interferometer, diffraction, and holography after successfully completing this course.
	PHY-201R	GE-2: Electriciy, Magnetism and EMT	Students should be able to apply Gauss's law of electrostatics to various issues, calculate the magnetic forces acting on moving charges and the magnetic fields caused by currents, have a basic understanding of magnetic materials, and comprehend and apply the ideas of induction. Students will be able to measure resistance (high and low), voltage, current, self and mutual inductance, capacitor, magnetic field intensity and its change, and other circuits such as RC and LCR in the lab course.
III	PHY-301H	C-5: Mathmatical Physics – II	Students who successfully complete the course will be able to solve differential equations utilising power series solutions, separation of variables techniques, special integrals, and Fourier series.

	PHY-302H	C-6: Thermal Physics	Students who successfully complete the course will be able to recognise and describe the statistical character of several thermodynamics features including entropy, temperature, thermodynamic potentials, free energies, Maxwell's relations in thermodynamics, and the behaviour of actual gases.
	PHY-303H	C-7: Digital System and applications	After successfully completing the course, students will be able to comprehend the CRO's operating principle, analyse, create, and use circuits with combinational logic Sort various semiconductor memory, examine, use sequential logic circuits using PLD to simulate and construct combinational and sequential circuits, create a digital logic etc. which will useful to address issues in the real world.
	PHY304HR	SEC-1A Physics workshop skill	This course's objective is to familiarise students with a variety of mechanical and electrical tools via hands-on practise.
	PHY-301R	GE-3: Thermal Physics and statistical mechanics	Students should understand the fundamentals of thermodynamics, the first and second laws of thermodynamics, the notion of entropy and related theorems, the thermodynamic potentials and their physical interpretations, Maxwell's thermodynamic relations, the fundamentals of the kinetic theory of gases, the Maxwell-Boltzman distribution law, equipartition of energies, the mean free path of molecular collisions, viscosity, and thermal conductivity, quantum statistical distributions, viz., the Bose- Einstein statistics and the Fermi-Dirac statistics by the end of this course.
IV	PHY-401H	C-8: Mathmatical Physics – III	Students who successfully complete the course will be able to use the residue theorem to calculate complex integrals and the Fourier and Laplace transforms to solve differential equations.
	PHY-402H	C-9: Elements of modern physics	Students who successfully complete the course will be able to comprehend recent advances in physics, including Planck's law, the emergence of the notion of probability interpretation, and the formulation of the Schrodinger equation. Also, students will get a basic understanding of lasers, radioactivity, and nuclear structure.
	PHY-403H	C-10: Analog system & applications	Students who successfully complete the course will be able to comprehend the physics of semiconductor p-n junctions, bipolar junction transistors, transistor biassing and stabilisation circuits, the idea of feedback in amplifiers, and oscillator circuits. They will also have an understanding of operational amplifiers and their uses.
	PHY-404HR	SEC2C: RenewableEnergy and Energy Harvesting Skill	This course's objective is to give students exposure and practical experience in addition to academic knowledge wherever feasible.

	PHY-401R	GE-4: Waves and Optics	After completing this course, students should be able to explain simple harmonic oscillation and the superposition principle, the significance of the classical wave equation in transverse and longitudinal waves and how to solve a variety of physical systems using it, the idea of normal modes in transverse and longitudinal waves and how to determine their frequencies, interference as the superposition of waves from coherent sources descended from the same parent source, and many other concepts. Show that you comprehend polarisation, interference, and diffraction experiments.
V	PHY-501H	C-11: Quantum Mechanics & applications	Students will be able to comprehend the fundamental concepts of quantum mechanics, including the Schrödinger equation, the wave function, the uncertainty principle, stationary and non-stationary states, time evolution of solutions, and the connection between quantum mechanics and linear algebra, upon successfully completing the course. The hydrogen atom Schrödinger equation will be solvable by students. Students will be familiar with the ideas of angular momentum, spin, the quantization and addition of these quantities, spin-orbit coupling, and the Zeeman effect.
	PHY-502H	C-12: Solid State Physics	Students who successfully complete the course should be able to describe the main features of the physics of electrons in solids, explain the dielectric, ferroelectric, and magnetic properties of solids, and comprehend the fundamentals of superconductivity. They should also be able to explain the main features of crystal lattices and phonons, understand the elementary lattice dynamics and how it affects the properties of materials.
	PHY-503H	DSE-1A: Advanced Mathematical Physics-I	Students who successfully complete this course will be able to work out physics-related issues involving linear vector space, matrix algebra, and tensor.
	PHY-504H	DSE-2A: Nuclear and Particle Physics	Students who successfully complete this course will be able to explain subatomic particles and their characteristics. They will learn about the many nuclear methods, their uses in various fields of physics, and their implications for society. The course will foster problem-solving abilities and knowledge that may be used to multidisciplinary domains of physics.
VI	PHY-601H	C-13: Electromagnetic Theory	Students who successfully complete the course will have an understanding of Maxwell's equations, electromagnetic wave (EM) propagation in various homogeneous-isotropic as well as anisotropic unbounded and bounded media, production and detection of various types of polarised EM waves, and general knowledge of waveguides and fibre

			optics.
	PHY-602H	C-14: Statistical Mechanics	Students who successfully complete the course will gain knowledge of statistical mechanics approaches that they may use in a variety of subjects. After completing these students will get knowledge regarding the various sorts of particles, their behaviors and corresponding statistics associate with them.
	PHY-603H	DSE-3A: Classical Dynamics	The overview of Newton's Laws of Motion, the Special Theory of Relativity through the 4-vector method, and fluids will be provided to students at the end of this course. The Lagrangian and Hamiltonian of a system will also be understood by the students. At the completion of this course, students will be able to tackle the problems in classical mechanics.
	PHY-604H	DSE-4A: Experimenta lTechniques	After completing this course, students will be able to explain measurement errors and the statistical analysis of data needed when conducting an experiment. Also, students will study about the functionality, effectiveness, and uses of industrial instruments including digital multimeters, RTD, Thermistor, Thermocouples, and Semiconductor type temperature sensors.