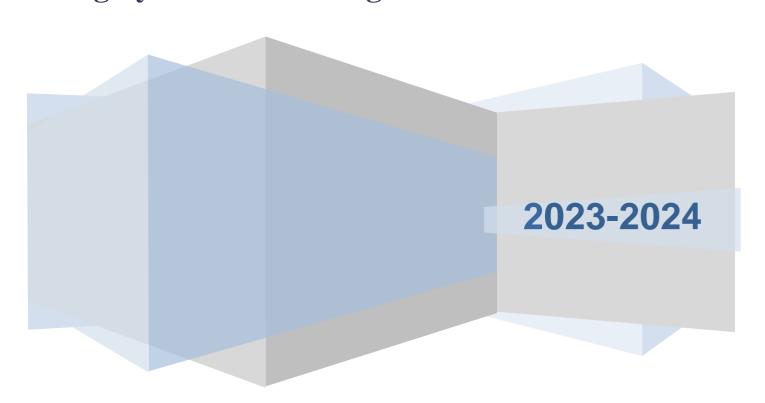# PROGRAMME OUTCOMES (PO), COURSE OUTCOMES (CO) :POs-Cos
&
PROGRAMME SPECIFIC OUTCOMES (PSO)

According to NEP, 2020

Department of Physics
Hooghly Women's College

2023-2024

☐ SEMESTER WISE & COURSE WISE CREDIT DISTRIBUTION STRUCTURE UNDER CCFUP AS PER NEP, 2020 :

Semester	Course Type	Paper Code	Name of the Course	Credit	Lect.	Tuto.	Pract./Viva	Full Marks	Theory	Pract./ Tuto./ Vivavoce	Internal Assessment
	Major/DS Course (Core) Code: PHYS1011	100-199	MATHEMATICAL PHYSICS-I	4	3	0	1	75	40	20	15
	Minor Course Code: PHYS1021	100-199	MATHEMATICAL PHYSICS-I	4	3	0	1	75	40	20	15
	Multi/Inter disciplinary Code: PHYS1031		CNCEPTS OF PHYSICS 1	3	2	1	0	50	40	00	10
I	Ability Enhancement Course (AEC) [L₁-1 MIL] Code: …..1041		Arabic/ Bengali/ Hindi/ Sanskrit/ Santali/ Urdu or Equvlnt. Course from SWAYAM /Any other UGC recognized platform	2	2	0	0	50	40	00	10
	Skill Enhancement Course (SEC) Code: PHYS1051		RENEWABLE ENERGY AND ENERGY HARVESTING	3	2	1	0	50	40	00	10
	Common Value Added (CVA) Course Code: CVA1061		Environmental Science/ Education	4	3	0	1	100	60	20	20
	Total			**20**				**400**			

Semester	Course Type	Paper Code	Name of the Course	Credit	Lect.	Tuto.	Pract./Viva	Full Marks	Theory	Pract./ Tuto./ Vivavoce	Internal Assessment
	Major/DS Course (Core) Code: PHYS2011	100-199	MECHANICS	4	3	0	1	75	40	20	15
	Minor Course Code: PHYS2021	100-199	MECHANICS	4	3	0	1	75	40	20	15
	Multi/Interdisciplinary Code: PHYS2031		CNCEPTS OF PHYSICS 2	3	2	1	0	50	40	00	10
II	Ability Enhancement Course (AEC)[L₂-1] Code:ENGL2041		English or Equvlnt. Course from SWAYAM/ /Any other UGC-recognized platform	2	2	0	0	50	40	00	10
	Skill Enhancement Course (SEC) Code: PHYS2051		ELECTRICAL CIRCUITS AND NETWORK SKILLS	3	2	1	0	50	40	00	10
	Common Value Added (CVA) Course Code: CVA2061		Understanding India/Digital & Technological Solutions/Health & Wellness,Yoga Education, Sports & Fitness	4	3/3	1/0	0/1	100	80/60	0/20	20

➢ Course Outcome (CO) Table :

- Programme name: *3-year Degree/ 4-year Honours in Physic Under Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) as per NEP, 2020.*

- Year of Introduction/Implementation: *with effect from 2023-24 , by The University of Burdwan.*

Semester	Course Type & Code	Course Name	Course Credit	Theory/ Practical	Course Outcome (CO)
I	Major/ DS Course (Core) Code: PHYS1011	MATHEMATICAL PHYSICS-I	4	Theoretical	The aim of this course is to equip the students with mathematical methods that are important prerequisites for physics courses. On completion of this course, the student must be able to perform different mathematical operations like calculus and vector operations which are extremely essential to study theoretical and experimental physics.
				Practical	The aim of this course is to learn computer programming and numerical analysis and to emphasize its role in solving problems in Physics. Students will learn the basics of programming in Sci-Lab/Python, a universally accepted open source programming language.
	Minor Course Code: PHYS1021	MATHEMATICAL PHYSICS-I	4	Theoretical	The aim of this course is to equip the students with mathematical methods that are important prerequisites for physics courses. On completion of this course, the student must be able to perform different mathematical operations like calculus and vector operations which are extremely essential to study theoretical and experimental physics.
				Practical	The aim of this course is to learn computer programming and numerical analysis and to emphasize its role in solving problems in Physics. Students will learn the basics of programming in Sci-Lab/Python, a universally accepted open source programming language.
	Multi/ Interdisciplinary	CONCEPTS OF PHYSICS 1	3	Theoretical	The aim of the course is to enable the students to be familiar with basic Physics.Students will develop the

	Code: PHYS1031				problem-solving capability and also learn the applications of Newtonian mechanics in daily life.
	Skill Enhancement Course (SEC) Code: PHYS1051	RENEWABLE ENERGY AND ENERGY HARVESTING	3	Theoretical	To impart knowledge and hands on learning about various alternative energy sources like Wind, Solar, Mechanical, Ocean, Geothermal etc. To review the working of various energy harvesting systems which are installed worldwide. The students are expected to learn not only the theories of the renewable sources of energy, but also to have hands-on experiences on them wherever possible.
II	Major/ DS Course (Core) Code: PHYS2011	MECHANICS	4	Theoretical	The objective of this course is to provide an in-depth understanding of the principles of Newtonian mechanics and apply them to solve problems involving the dynamics of classical mechanical systems.This course in Mechanics serves as the foundation for further progress towards the study of physics at graduate or postgraduate level. Upon completion of the course, the student will be able to apply Newton's laws of motion to different force fields for a single particle and for a system of particles.
				Practical	In this course the students will be familiar with some basic apparatus used in physics laboratories. They will learn how to make systematic experimental observation, data collection, recording of data and other basic laboratory practices in this course. They will learn how to plot graphs and determine different parameters from the graph. They will also learn how to estimate errors in experimental data. They will learn the importance of working as a group in any laboratory. They will perform some experiments to verify different laws and to determine different physical quantities related to the Theory portion of the course.
	Minor Course Code: PHYS2021	MECHANICS	4	Theoretical	The objective of this course is to provide an in-depth understanding of the principles of Newtonian mechanics and apply them to solve problems involving the dynamics of classical mechanical systems.This course in Mechanics serves as the foundation for further progress towards the study of physics at graduate or postgraduate level. Upon completion of the course, the student will be able to apply Newton's laws of motion to different force fields for a single particle and for a system of particles.

				Practical	In this course the students will be familiar with some basic apparatus used in physics laboratories. They will learn how to make systematic experimental observation, data collection, recording of data and other basic laboratory practices in this course. They will learn how to plot graphs and determine different parameters from the graph. They will also learn how to estimate errors in experimental data. They will learn the importance of working as a group in any laboratory. They will perform some experiments to verify different laws and to determine different physical quantities related to the Theory portion of the course.
Multi/ Interdisciplinary Code: PHYS2031	CONCEPTS OF PHYSICS 2	3	Theoretical		The aim of the course is to enable the students to be familiar with basic Physics. Students will develop the problem-solving capability and also learn the applications of Newtonian mechanics in daily life.
Skill Enhancement Course (SEC) Code: PHYS2051	ELECTRICAL CIRCUITS AND NETWORK SKILLS	3	Theoretical		The aim of this course is to enable the students to understand the basics of electronic circuits. Practical design and troubleshooting of electronic instruments is also a major objective of this Course. After the completion of the course the student will acquire necessary skills/ hands on experience /working knowledge on Multimeter, voltmeters, ammeters, electric circuit elements, dc power sources. With the knowledge of basic electronics a student is able to detect troubleshooting and repair some of the electronic instruments used in our daily life.