SAGAR MAHAVIDYALAYA

Department of Physics

COURSE OUTCOME OF CBCS

Session 2021-2022

UNDER GRADUATE PHYSICS GENERAL COURSE (PHSG)

The Under Graduate Physics general course of four core course (CC),two skill enhancement course(SEC),and two discipline specific elective course(DSE) divided in six semester.

Each course are designed to have a theoretical part and an associated practical or tutorial part.

PROGRAMME LEARNING OUTCOMES IN B.SC(GENERAL) PHYSICS

B.Sc (General) Programme offers theoretical as well as practical knowledge of science .There acquire a fundamental understanding of the academic field of Physics .This program is most beneficial for students who have a strong interest and science careers in future .Apart from imparting in depth knowledge over the respective subject the aim of the programme is to make the students responsible citizens with good moral and ethical values .

SEMESTER WISE OBJECTIVES AND LEARNING OUTCOMES ARE DISCUSSEDBELOW:

Semester : 1 Mechanics (CC1)

This course is to introduce the students to concepts of mechanics .This course also enhance the understanding of motion of object under different condition .

CO1- Understand laws of motion and their application to various dynamical situation .

CO2- Students will be learn the concept of the conservation of energy ,angular velocity, angular momentum and apply to basic problem .

CO3- Keplar's law describe the motion of planets and satellite in circular orbit .the basic ideas of GPS .

CO4- Learn about the surface tension of liquid .

CO5- In the laboratory course students learn data analysis , error analysis and graphical techniques .

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Semester : 2 Electricity and Magnetism

This course introduce the students to concepts of vectors , electronics and magnetism properties .Students also known about different laws of electromagnetic theorem .

CO1- To study the basic concepts of vector algebra .

CO2- To study the students Ampere's law , Gauss theorem , Stoke's theorem .

CO3- To understand the dielectric phenomenon and effect of electric field on dielectric .

CO4- In the laboratory course the students determine the different data using Carey foster method, Potentiometer. Conversion of an Ammeter to Voltmeter and Voltmeter to Ammeter .

Semester : 3 Thermal physics and Statistical mechanics

This course is an extension of mechanics , heat and thermodynamics . Students will also learn about thermodynamics potential ,kinetic theory of gases.

CO1- Learn the basic concepts of thermodynamics .They are also expected to learn Maxwell's equation.

CO2- To study about the Stefan- Boltzmann law,Rayleigh-Jeans law and Plank's law.

CO3- To Understands quantum statistical distribution about the Bose-Einstein statistics and the Fermi Dirac statistics.

CO4- To conduct experiments on Stefan's law of radiation ,Carey foster bridge . Also determine pressure coefficient of air using Jolly's apparatus.

CO5- SEC-A2 is a knowledge based paper,very much relevant to the context of global worming, develops an understanding of sustainable source of alternate energy. Eg, solar energy ,geothermal energy, wind energy ,ocean and hydro energy etc.

Semester : 4 Waves and Optics

This course introduce the motion of wave ,which is simple harmonic motion ,damped and forced vibration.This course understand diffraction and polarization phenomena.

CO1- To study the wave motion of simple ,damped and forced vibration.

CO2- To learn the principle of superposition of light .Study different optical phenomena likes interference,diffraction an polarisation.

CO3- To study interference by formation of Newton's ring and interference by air wedge.

CO4- To determine the thickness of a paper from a wedge shaped film.

CO5- SEC-B2 is a knowledge based course which makes the students informed about electronic device like generators, transformers, ac motors etc.

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Semester: 5 Analog Electronics

This course provides the study of electrical circuit and network theorem .The basic concepts of semiconductor devices which diodes , transistor .Students study an extension of Operational amplifiers.

CO1- Understand the operational amplifier theorem .Concepts to inverting and non-inverting amplifier and oscillator.

CO2- To study the basic concepts of semiconductor devices .Students are also understand feedback amplifier.

CO3- To construct inverting and non inverting circuit and study op amp as a differentiator and integrator .

CO4- Design circuit using transistor and operational amplifiers.

CO5- Students carry out the experiment of Newton's theorem by D.C power supply.

Semester: 6 Digital electronics

Thiscourse provides the study of electronics digital circuit devices useful in technology .The basic understanding of data processing circuits .To study the basic concepts of number system and extension of sequential circuits.

CO1- To study numbers systems ,logic gate and construct adder and subtractor circuit.

CO2- To learn difference between analog and digital circuit .

CO3- To study the basic concepts of logic gate .Students will learn universal gate and de Morgan's theorem .

CO4- To construct adder circuit .To verify and design logic gate.

Programme Outcome(PO)

PO1- Critical Thinking: To acquire knowledge of physics by understanding basic concepts of fundamental principles and the scientific theories related to various physics phenomena and their relevance in the day-to-day life.

PO2- Effective Communication: Speak, read, write and listen clearly in the person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3- Problem Solving: Understand and solve problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired from humanities/sciences/mathematics/social science.

PO4- Effective citizenship: Understand the administration of collage, including the roles and functions of the major administrative units and develop ability to act with an informed awareness of issues and participate in civic life activities fo comprehensive development.

PO5- Environment and sustainability: Understand the issues of environmental contexts and sustainable development.

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PO6- Ethics: Express legal and ethical issues and understand the moral dimensions of decision and responsibilities.

Programme Specific Outcome(PSO)

PSO1- Understand basic mathematical methods and Mechanics.

PSO2- Illustrate the principle of electronics, thermodynamics and light.

PSO3- Identify their area of interest in electronics, Electricity and magnetism.

PSO4- The students will aware simple electrical circuit and network.

PSO5- Develop effective communication skills.

Mapping Programme Outcome(PO) and Course Outcome(CO)

Course outcome(CO) of	Programme Outcome					
	PO1 Critical thinking	PO2 Effective communication	PO3 Problem solving	PO4 Effective citizenship	PO5 Environment & Sustainability	PO6 Ethics
CC1/GE1	√	√	√			
CC2/GE2		√	√		√	
CC3/GE3		√	√	√	√	√
CC4/GE4		√	√	√	√	√
SEC A2	√		√	√		
SEC B1			√	√		
DSE A1	√		√	√		
DSE B1			√			

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