B.Sc., Physics

Semester -I

Core I: PROPERTIES OF MATTER AND ACOUSTICS   **Paper Code : 21UPH01**

Co Number	CO Statement	Knowledge level
CO1	Students understand the behaviour and properties of solids and fluids.	K1
CO2	Students will able to acquire knowledge about viscosity and lubrication.	K2,K3
CO3	Students will have a strong knowledge of surface tension.	K3
CO4	Students will get an overview of the fundamental principles of waves and oscillations.	K3,K4
CO5	To study and apply the knowledge of Acoustics aspects of halls and auditorium and understand Ultrasonic and its application in various field.	K3,K4

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	2	3	3	-
CO2	3	3	2	3
CO3	3	1	1	2
CO4	2	3	-	2
CO5	3	1	3	3

Strong -3   Medium -2   Low

Semester –II

Core – II – MECHANICS   **Paper Code: 21UPH02**

Co Number	CO Statement	Knowledge level
CO1	Learn to solve the problems in projectile motion.	K1
CO2	Understand the concepts of rigid body dynamics in terms of the moment of inertia.	K2
CO3	Acquire knowledge of Lagrangian formulation in classical mechanics.	K2,K3

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2

Strong -3   Medium -2   Low-1

Semester -III

CORE PHYSICS III - THERMAL AND STATISTICAL PHYSICS

Paper Code : 21UPH03

Co Number	CO Statement	Knowledge level
CO1	Students will gain profound knowledge in specific heat, thermodynamics functions, potentials and transfer of heat.	K1
CO2	These concepts will leads to understanding the application of thermodynamics	K2
CO3	Understand the statistical physics	K3

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2

Strong -3   Medium -2   Low-1

Semester – IV   **Paper Code : 21UPH04**

CORE PHYSICS IV - OPTICS AND SPECTROSCOPY

CO No	CO Statement	Knowledge Level
CO1	Understand the Geometry of lenses.	K1
CO2	Understand the Phenomena of optics	K2
CO3	Attain adequate basic knowledge in spectroscopy.	K2,K3

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	2	3	1	2

Strong -3   Medium -2   Low-1

Semester – V

Core –V:ELECTRICITY AND MAGNETISM   **Paper Code : 21UPH05**

CO No	CO Statement	Knowledge Level
CO1	To acquire in-depth knowledge of measuring instruments involving electric and magnetic fields	K1
CO2	To study various magnetic properties of materials and their applications.	K2,K1
CO3	Effectively formulate the electrical circuit problem into a mathematical problem using circuits, laws and theorems	K3

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2

Strong -3   Medium -2   Low-1

SEMESTER III
SBEC-I – CAREER COMPETENCY SKILLS
Paper Code : **21UPHS01**

Co Number	CO Statement	Knowledge level
CO1	Obtain knowledge of resume formats.	K1
CO2	Know how to lead a group.	K2
CO3	Know how to face an interview.	K3

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	2	-
CO2	3	1	2	2
CO3	3	1	1	2

Strong -3   Medium -2   Low-1

Semester V:

Core – VI – SOLID STATE PHYSICS   **Paper Code : 21UPH06**

CO No.	CO Statement	Knowledge Level
CO1	To learn crystal structures	K1
CO2	To study diffraction of X-rays by crystal and defects in crystals	K2
CO3	To know the basics of magnetism and superconductivity	K2,K3
CO4	To understand the electric and dielectric properties of non-metals	K3,K4
CO4	To gain the knowledge of thermal and electrical properties of solids	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2
C04	2	3	2	3
CO5	3	1	3	3

Strong -3   Medium -2   Low-1

SEMESTER V

SBEC-II - CAREER COMPETENCY SKILLS II   **Paper Code : 21UPHS01**

CO No.	CO Statement	Knowledge Level
CO1	Remember the basics of Photoshop.	K1
CO2	Understand the working with images.	K2
CO3	Demonstrate the layering in Photoshop.	K3
CO4	Implement the layer style.	K4
CO5	Analysis the action concept.	K5

Mapping with Programme Outcomes

Co. No.	PO1	PO2	PO3	PO4
CO1	3	2	1	-
CO2	3	2	1	1
CO3	3	2	1	1
CO4	2	3	1	1
CO5	3	1	-	2

Strong -3   Medium -2   Low-1

Semester V:

CORE PHYSICS VII

ANALOG AND DIGITAL ELECTRONICS
Paper Code : 21UPH06

CO No.	CO Statement	Knowledge Level
CO1	To learn crystal structures	K1
CO2	To study diffraction of X-rays by crystal and defects in crystals	K2
CO3	To know the basics of magnetism and superconductivity	K2,K3
CO4	To understand the electric and dielectric properties of non-metals	K3,K4
CO4	To gain the knowledge of thermal and electrical properties of solids	K5

Mapping with Programme Outcomes

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2
CO4	2	3	2	3
CO5	3	1	3	3

Strong -3   Medium -2   Low-1

CO Number	PO1	PO2	PO3	PO4
CO1	3	3	3	-
CO2	3	2	2	3
CO3	3	1	1	2
CO4	2	3	2	3
CO5	3	1	3	3

Strong -3   Medium -2   Low-1

Semester VI:

Core –VIII: ATOMIC PHYSICS   **Paper Code : 21UPH08**

CO No.	CO Statement	Knowledge Level
CO1	Acquire knowledge of the fundamentals of atomic physics.	K1
CO2	Understand the concepts and potential of atomic physics.	K2
CO3	Analyses the atomic spectra.	K3

Mapping with Programme Outcomes

Co. No.	PO1	PO2	PO3	PO4
CO1	2	2	-	-
CO2	2	2	1	-
CO3	3	3	2	1
C04	3	3	3	2

Strong -3   Medium -2   Low-1

Semester VI:

Core –IX: NUCLEAR PHYSICS   **Paper Code : 21UPH09**

CO No.	CO Statement	Knowledge Level
CO1	Acquire knowledge and apply it.	K1
CO2	Acquire knowledge of the structure of the nucleus.	K2
CO3	understand the formation of the nucleus and its binding energy	K3
CO4	students can analyse the energy released by the nucleus during the fission and fusion process	K2, K3

Mapping with Programme Outcomes

Co. No.	PO1	PO2	PO3	PO4
CO1	3	2	1	1
CO2	3	2	1	2
CO3	3	2	1	1
C04	2	3	2	2

Strong -3   Medium -2   Low-1

Semester VI:

Core –X: QUANTUM MECHANICS AND RELATIVITY   **Paper Code : 21UPH10**

CO No.	CO Statement	Knowledge Level
CO1	Understand the basics concepts of quantum particles.	K1
CO2	Apply the basic to construct and solve the particle equations in one dimension and three- dimension form.	K2
CO3	Acquire knowledge of Relativity theory and its application in day to day life.	K3
CO4	Understand the basics concepts of quantum particles.	K2, K3

Mapping with Programme Outcomes

Co. No.	PO1	PO2	PO3	PO4
CO1	3	2	1	1
CO2	3	2	1	2
CO3	3	2	1	1

Strong -3   Medium -2   Low-1