

2023-24

## Specific program B.Sc. Physics

**Number of courses taught are....**

1. Mechanics 1
2. Mechanics 2
3. Electricity & Magnetism I
4. Electricity & Magnetism II
5. Thermal physics & statistical Mechanics I
6. waves & optics I
7. Thermal physics & statistical Mechanics II
8. waves optics II
9. Mathematical physics
10. Quantum mechanics
11. classical Mechanics & classical dynamics
12. Digital & Analogue circuits & Instrumentation
13. Nuclear & Particle physics
14. solid state physics
15. Atomic & molecular physics
16. Energy studies & Materials Science.

### **Practical course**

B Sc I--- CO5

B Sc II--- CO10  
CO11

B Sc III--- CO20  
CO21  
CO22  
CO23

## **Program outcomes (PO'S)**

After successful completion of B Sc students will be able to,

PO 1 acquire the knowledge with facts.

PO 2 understand the basic concepts, fundamental principles and scientific theories.

PO 3 develop scientific outlook with respect to science subject.

Po 4 analyse the scientific idea systematically and critically

## **PSO.....Program Specific Outcome**

After successful completion of three year degree program in physics a student should able to-

1 Gain knowledge of physics through theory & practical.

2 Demonstrate solve & understand major concepts in all discipline of physics

3 Solve problems & also think methodically, independently & draw logical conclusion

4 Create an awareness of impact of physics or society & development outside the community.

5 Employ scientific Knowledge to design carryout record & analyze the results of physics experiments

6 Develop research oriented skill

7 Develop skill of reasoning & Problem solving.

## **Course Outcomes**

After completion of the courses,

### **CO1—**

1 Students are able to Understand and identify scalar and vector and physical quantities.

2 1 Students are able to Understand the conceptual evolution of conservation laws of momentum and energy

### **CO2—**

1 Students gain basic knowledge of mechanics and revise basic concept of stress, strain and Elastic constants.

2 Students are exposed to different phenomena-a in physics and can understand applications of different phenomena in physics

### **CO3 ----**

1 Students are able to study physical significance of gradient, curl and divergence.

2 Gain information about concept of energy density in electric field and capable of applying the concepts to solve numerical.

### **CO4----**

1 Students are able to solve problems related with electric and magnetic field

2 Get idea of Maxwell's equations

### **CO5 Practical..**

1 Awareness of importance of physics developed

2 Students gain skill of handling of instruments

3. Students get knowledge of mechanics

4. Awareness of handling of electronic appliances developed.

### **CO6-----**

1 Studied laws of thermodynamics

2 Students expertise in measurement of temperature with different thermometers.

### **CO7-----**

1 Students understand nature of waves and oscillations

2 They studied properties of Sound waves.

### **CO8 -----**

1 Students studied laws of Statistical mechanics

2 Studied TDS equations.

### **CO9-----**

1 Students can understand different optical phenomena & can handle polarimeter to determine specific rotation of ppl

2 They can use knowledge of optics for various applications in society and develop research attitude

### **CO10 Practical...**

1 Students gain skill of measurement of thermal conductivity of different metals by various methods.

2 Students are exposed to study of effect of heat on properties of matter

### **CO11 practical**

1 Students can understand properties of sound

2. Students exposed to different properties of light by using various optical instruments

### **CO12-----**

1 Students can understand idea of partial diff equations

2 Students can analyze properties of complex no. and can solve special type integrals.

### **CO13-----**

1 Students well understand wave nature of matter particle.

2 They understand 1D & 3D wave equation and use to solve problems. Gain skill how to use Operators

#### **CO14-----**

- 1 Students studied various equations and principles and their applications in classical mechanics
- 2 Students exposed to special theory of relativity and charged particle dynamics.

#### **CO 15-----**

- 1 Students understand working and practical application of transistors; ICs, OPAMPS.
- 2 They can build electronic circuits and get knowledge about logic circuits.
- 3 Develop skill of use of CRO.

#### **CO 16-----**

- 1 Students exposed to nuclear properties with detectors and accelerator
- 2 Get knowledge about elementary particles and their classification.

#### **CO 17-----**

- 1 Students gain knowledge about magnetic properties of materials
- 2 Students are exposed to research in Materials science.

#### **C18-- ---**

- 1 Develop research skills in astronomy and can study Cosmos and it's origin
2. Develop scientific vision and can use for Society
- 3 Well understand Atomic and Molecular spectra.

#### **CO19-----**

- 1 Gain knowledge about renewable energy sources.
- 2 Creates awareness about research in nanomaterial and Super capacitors.

#### **CO20 Practical....**

- 1 Research attitude developed among students.
- 2 Job oriented skill developed

#### **CO21 Practical**

- 1 Awareness of use of nonconventional energy sources is developed
- 2 Students can apply practical knowledge to design logic circuits

#### **CO22. Practical -----**

- 1 Gain knowledge about safety of electronic instruments.

2 Students expertise in use of Optical instruments

**CO23 Practical.....**

1 Expertise in how to use CRO

2 Gain skill of using electric instruments and use of physics for Society.