

F. Y. B. Sc. - PHYSICS

Objectives:

- To develop analytical abilities towards real world problems
- To familiarize with current and recent scientific and technological developments
- To enrich knowledge through problem solving, hands on activities, study visits, projects etc.

1. USPH101 - Classical Physics

Learning Outcomes:

On successful completion of this course students will be able to:

1. Understand Newton's laws and apply them in calculations of the motion of simple systems.
2. Use the free body diagrams to analyze the forces on the object.
3. Understand the concepts of friction and the concepts of elasticity, fluid mechanics and be able to perform calculations using them.
4. Understand the concepts of lens system and interference.
5. Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.
6. Demonstrate quantitative problem solving skills in all the topics covered.

2. USPH101 - Modern Physics

Learning Outcomes:

After successful completion of this course students will be able to

1. Understand nuclear properties and nuclear behavior.
2. Understand the type isotopes and their applications.
3. Demonstrate and understand the quantum mechanical concepts.

3. USPH1 Practical I

Learning Outcome:

On successful completion of this course students will be able to:

- i) To demonstrate their practical skills.
- ii) To understand and practice the skills while doing physics practical.
- iii) To understand the use of apparatus and their use without fear.
- iv) To correlate their physics theory concepts through practical.
- v) Understand the concepts of errors and their estimation.

4. USPH201 Mathematical Physics

Learning Outcomes:

On successful completion of this course students will be able to:

1. Understand the basic mathematical concepts and applications of them in physical situations.
2. Demonstrate quantitative problem solving skills in all the topics covered.

5. USPH202 -Electricity and Electronics

Learning Outcomes:

On successful completion of this course students will be able to:

1. Understand the basic Electricity and Electronic concepts and applications of them in physical situations.
2. Demonstrate quantitative problem solving skills in all the topics covered.

6. USPHP2 - Practical II

Learning Outcome:

- i) To understand and practice the skills while doing physics practical.
- ii) To understand the use of apparatus and their use without fear.
- iii) To correlate their physics theory concepts through practical.
- iv) Understand the concepts of errors and their estimation.

S. Y. B. Sc. - PHYSICS

Objectives:

1. To develop analytical abilities towards real world problems
2. To familiarize with current and recent scientific and technological developments
3. To enrich knowledge through problem solving hands on activities, study visits, Projects, etc.

1. USPH301 : Mechanics and thermodynamics

Learning Outcomes:

On successful completion of this course, students will be able to :

- i) Understand the concepts of mechanics & properties of matter & to apply them to problems.
- ii) Comprehend the basic concepts of thermodynamics & its applications in physical situation.
- iii) Learn about situations in low temperature.
- iv) Demonstrate tentative problem solving skills in all above areas.

2. USPH302 : Vector calculus, Analog Electronics

Learning Outcomes:

On successful completion of this course students will be able to :

- 1) Understand the basic concepts of mathematical physics and their applications in physical situations.
- 2) Understand the basic laws of electrodynamics and be able to perform calculations using them.
- 3) Understand the basics of transistor biasing, operational amplifiers, their applications
- 4) Understand the basic concepts of oscillators and be able to perform calculations using them.
- 5) Demonstrate quantitative problem solving skill in all the topics covered.

3. USPH303 : Applied Physics - I

Learning Outcome:

On completion of this, it is expected that

- i) Students will be exposed to contextual real life situations.
- ii) Students will appreciate the role of Physics in 'interdisciplinary areas related to materials, Bio Physics, Acoustics etc.
- iii) The learner will understand the scope of the subject in Industry & Research.
- iv) Experimental learning opportunities will foster creative thinking & a spirit of inquiry.

4. USPHP3: Practical course -3

Learning Outcomes:

On successful completion of this course students will be able to :

- i) Understand & practice the skills while performing experiments.
- ii) Understand the use of apparatus and their use without fear & hesitation.
- iii) Correlate the physics theory concepts to practical application.
- iv) Understand the concept of errors and their estimation.

5. USPH401 : Optics and Digital Electronics

Learning Outcomes:

On successful completion of this course students will be able to :

- 1) Understand the diffraction and polarization processes and applications of them in physical situations.
- 2) Understand the applications of interference in design and working of interferometers.
- 3) Understand the resolving power of different optical instruments.\
- 4) Understand the working of digital circuits
- 5) Use IC 555 timer for various timing applications.
- 6) Demonstrate quantitative problem solving skills in all the topics covered.

6. USPH402: QUANTUM PHYSICS

Learning Outcome:

On successful completion of this course students will be able to :

- 1) Understand the postulates of quantum mechanics and to understand its importance in explaining significant phenomena in Physics.
- 2) Demonstrate quantitative problem solving skills in all the topics covered.

7. USPH403 : Applied Physics II

Learning Outcome

On successful completion of this course, students will be able to :

- i) Understand the concepts of mechanics & properties of matter & to apply them to problems.
- ii) Comprehend the basic concepts of thermodynamics & its applications in physical situation.
- iii) Learn about situations in low temperature.
- iv) Demonstrate tentative problem solving skills in all above areas.

8. USPHP4: Practical course – 4

Learning Outcome

On successful completion of this course students will be able to :

- i) Understand & practice the skills while performing experiments.
- ii) Understand the use of apparatus and their use without fear & hesitation.
- iii) Correlate their physics theory concepts to practical application.
- iv) Understand the concept of errors and their estimation.