

S.Y.B. Sc. (PHYSICS)
Semester I (Paper I) (2013 Pattern)
PH211: MATHEMATICAL MEHODS IN PHYSICS

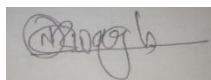
Aims and Objectives:

- To provide in depth knowledge of scientific and technological aspects of Physics
- To familiarize with current and recent scientific and technological developments
- To enrich knowledge through problem solving, hand on activities, study visits, projects etc.
- To train students in skills related to research, education, industry, and market.
- To create foundation for research and development in Electronics
- To develop analytical abilities towards real world problems
- To help students build-up a progressive and successful career in Physics

Outcomes:

After the completion of this course students will be able to

- Understand the complex algebra useful in physics courses
- Understand the concept of partial differentiation.
- Understand the role of partial differential equations in physics
- Understand vector algebra useful in mathematics and physics
- Understand the singular points of differential equation



Subject Teacher



Principal
B.D.Kale Mahavidyalaya
Ghodegaon, Dist. Pune

S.Y.B. Sc. (PHYSICS)
Semester I (Paper II)
PH212: ELECTRONICS (2013 Pattern)

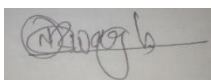
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Outcomes:

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

- Apply laws of electrical circuits to different circuits.
- Understand the relations in electricity
- Understand the properties and working of transistors.
- Understand the functions of operational amplifiers.
- Design circuits using transistors and operational amplifiers.
- Understand the Boolean algebra and logic circuits



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S.Y.B. Sc. (PHYSICS)
Semester II (Paper I) (2013 Pattern)
PH221: OSCILLATIONS, WAVES AND SOUND

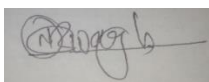
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Outcomes:

On completion of this course, the learner will be able to:

- Understand the physics and mathematics of oscillations.
- Solve the equations of motion for simple harmonic, damped, and forced oscillators.
- Formulate these equations and understand their physical content in a variety of applications,
- Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.
- Explain oscillation in terms of energy exchange, giving various examples.
- Solve problems relating to undamped, damped and force oscillators and superposition of oscillations.
- Understand the mathematical description of travelling and standing waves.
- Recognise the one-dimensional classical wave equation and solutions to it.
- Calculate the phase velocity of a travelling wave.
- Explain the Doppler effect, and predict in qualitative terms the frequency change that will occur for a stationary and a moving observer.
- Define the decibel scale qualitatively, and give examples of sounds at various levels.
- Explain in qualitative terms how frequency, amplitude, and wave shape affect the pitch, intensity, and quality of tones produced by musical instruments



Subject Teacher



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S.Y.B. Sc. (PHYSICS)
SEMESTER II (PAPER II)
PH222: OPTICS (2013 Pattern)

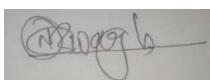
Aims and Objectives:

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Outcomes:

This course will enable you to:

- acquire the basic concepts of wave optics
- describe how light can constructively and destructively interfere
- explain why a light beam spreads out after passing through an aperture
- summarize the polarization characteristics of electromagnetic waves
- appreciate the operation of many modern optical devices that utilize wave optics
- Understand optical phenomena such as polarisation, birefringence, interference and diffraction in terms of the wave model.
- analyse simple examples of interference and diffraction phenomena.
- be familiar with a range of equipment used in modern optics.



Subject Teacher



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