



UP203 Jan 2:1

Intermediate Electromagnetism and the Quantum Physics of Radiation

Instructor

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Teaching Assistant

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Department: Physics or Undergraduate Sciences

Course Time: Tues, Thu (11:00-12:00)

Lecture venue: Old Physics Building

Detailed Course Page:

Announcements

Brief description of the course

The course is a core or compulsory course for Physics Major students in the BSc. program. The coursework is based on the assumption that students are already familiar with Maxwell's equations. The course aims to teach students how the electricity and magnetism are hand in hand connected to light. The first one third of the course teaches how electromagnetic waves travel through different media and how light is an electromagnetic wave. The next two-third of the course teaches propagation of light through geometric and wave optics approaches.

Prerequisites

Familiarity with Maxwell's Equations

Syllabus

Electromagnetic Waves; Geometrical Optics; Wave Optics; Quantum Optics

Course outcomes

The students are expected to understand propagation of light or electromagnetic waves under different limiting regimes.

Grading policy

25% Assignments;25% Mid-term, 50% Final

Assignments

Three-four assignments are given each containing six or more questions.

Resources

Electricity and Magnetism by D. J. Griffiths

Electromagnetic Fields and Waves by Paul Lorrain and Dale Corson

Optics by E. Hecht

Fundamentals of Optics by F. Jenkins and H. White