Instructor: Cass Sackett

About the course:
- Intermediate-level coverage
  (graduate and undergraduate)
- Cross-disciplinary
  (physics, chemistry, engineering, math, …)

Web Page:
http://galileo.phys.virginia.edu/classes/531.cas8m.fall05
- lecture notes
- homework assignments and solutions

Textbook: Hecht Optics 4th edition
(3rd edition probably OK, but not supported)

Text is optional:
We’ll follow it for some of course, not all
Text has much more information than lectures

Supplemental texts in Physics library
Use for more help, further reading
Prerequisites:
  • Introductory E&M course.
  
  • Mathematical techniques:
    Matrices and vectors
    Calculus
    Differential equations
    Complex numbers (review in class)
  
  • Computer program for matrices, complex numbers
    Suggestions: Matlab, Mathematica, MathCad.
    I’ll use Matlab.

Grading:
  • 40% Homework
  • 50% Exams (midterm + final)
  • 10% Participation

Graded on graduate course scale:
  Average = B+/A-
  Unsatisfactory = C
  Abysmal = F
Homework:
  • Eleven assignments, see schedule.
  • Usually due Tuesdays

Drop one assignment.

Exams:
  • Midterm: take home, 10/4 to 10/11
  • Final: in class, 12/9

Weight better exam 30%, worse one 20%

Participation:
  • Lecture notes posted before class.
  • Notes contain discussion questions. I’ll call on students to answer these during class.
  • No penalty if you’re not here, but need to answer at least one question during semester.
  • Passing grade if answers are satisfactory.

Higher grade for:
  - providing more insightful answers
  - asking insightful questions
  - finding errors in lecture notes
Sharing Work

DO:
- Work together on homework problems.
- Study together for exams.

DON'T:
- Copy another student’s assignment.
- Discuss problems during exams.

Reminder: all assignments and exams are implicitly pledged to follow these rules.

Office Hours

Instructor: Monday 1–3 PM
 Mostly, help with homework

Suggestions:
- Do what you can before coming
- Send one person from your study group
- If confused about a concept, schedule an appointment
Content:

Course schedule available online

Major Topics:
- Theory of electromagnetic waves
- Geometrical optics
- Fourier transform methods
- Interferometry and coherence
- Polarization and quantum optics