

# Phys 3401: Optics

## Syllabus

Instructor: Luis Grave de Peralta  
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### Course Information

- Conferences place and time: TT 9:30 AM – 10:50 AM, Science 10
  - Laboratories place and time: W 9:00 AM – 12:00 AM, Science 1
  - Textbook: F.L. Pedrotti, L.S. Pedrotti and L. M. Pedrotti, "Introduction to Optics," Third edition.
  - Other recommended book: Born and Wolf, "Principles of Optics."
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### Course Description:

- Phys 3401 covers geometrical and physical optics, waves, reflection, scattering, polarization, interference, diffraction, modern optics, and optical instrumentation.
  - **Exams:** There will be three in-class exams with no final exam (see Class Schedule for dates).
  - The exams are closed book. You may bring one hand-written 3" by 5" index card with formulae, etc. Telephones, pagers, PDAs and other gizmos are not allowed. Calculators are allowed.
  - There will be no make-up exams.
  - The lowest exam grade will be dropped since there are no makeup exams.
  - **Homework** problems will be assigned in Thursday classes every week. In the next-Thursday classes, randomly selected students will resolve homework problems in front of the class. These students will be graded according to their work.
  - **Grading:** Homework 25%, laboratory 25%, each exam 25% towards your final course grade. The grading scale is A=100-87%, B=86-74%, C=73-62% and D=61-50%, F=49 to 0%.
  - **Help:** Do not wait until the last second to seek help. If you do not understand the material or feel that you are falling behind, seek help as soon as possible.
  - Your instructor is available during office hours. If you cannot make it, call him or email him.
  - Academic dishonesty will not be tolerated and will be treated according to the rules outlined in the Student Handbook.
  - Any student that because of a disabling condition may require special arrangements in order to meet the course requirements should contact their instructor as soon as possible so that the necessary accommodations can be made. Student should present appropriate verification from Access Tech. No requirement exists that accommodations be made prior to completion of this approved university procedure
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### Course Goals

- Be familiar with basic geometrical optics principles and image-forming optical instruments.
  - Be familiar with the description of the light as an electromagnetic wave.
  - Know how to describe mathematically the phenomena of diffraction and interference.
  - Be familiar with interferometers, polarizers, light sources and light detectors.
  - Know basic principles of lasers and be familiar with laser applications.
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### Learning Assessment

- Certain problems on the exams will explicitly require facility with the course objectives and be used as learning assessment tools.