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PHYS 422.01: Optics I

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Physics 322 - Optics I
Fall Semester 2001

LECTURES: MW 12:10 - 1:00pm
SC (Science Complex) Bldg. Rm 231

INSTRUCTOR: Andrew Ware
Office: SC Bldg. Rm 120, (Tel. No. 243-6221)
Email: aware@selway.umt.edu
Office Hours: MWF 11-12, T 9-10, R 1-2

WEBSITE: http://www.physics.umt.edu/phys322/

TEXTBOOK: Optics
by E. Hecht, 4th Ed. (Addison-Wesley, 2002)

PREREQUISITE: Phys 222N and corequisite Math 251

HOMEWORK: Problem assignments (about 1 assignment per week)
These will be collected and graded.

LABS: There will be approximately 3 labs during the semester.
You will work in groups of two or three but each person will
turn in their own lab report.

TOPICS:
- Introduction Chp. 1
- Reflection, refraction, Fermat’s law Chp. 4
- Geometrical optics Chp. 5
- Wave basics Chp. 2
- Photons and light, EM theory Chp. 3
- Propagation of electromagnetic waves Chp. 4
- Superposition Chp. 7
- Polarization (time permitting) Chp. 8

EXAMS: Two 50-minute exams, on W 10/3 and M 11/19
One 2-hour final exam (8:00am - 10:00am, Fr 12/21)
* Comprehensive but weighted towards the material
  presented after the last in class exam.

GRADING: 50-minute exams 30 % (15 % each)
Homework 20 %
Labs 25 %
Final exam 25 %

[This course can be taken for a traditional letter grade (A,B,C,D,F) only]