COURSE DESCRIPTION
P2310, Physics III: Waves & Optics
Fall 2009

Lecture: MWF 2:10 – 3:00 pm, Physical Science (PS) 234
Laboratory: by arrangement, PS137

Instructor:

Professor:	Michael (Mike) Pierce
Office:	Physical Science Rm. 206
Office Hours:	Tues. 1:30 – 3:30 pm, & by arrangement
Phone:	766 – 6102
Email:	mpierce@uwyo.edu

Lab Instructor:

	Mr. Raymond (Ray) Martin
Office:	Physical Science Rm. 212
Office Hours:	TBD
Phone:	766 - 6514
Email:	rmarti36@uwyo.edu

Text: *Optics*, 4th Edition, by Hecht, with supplements from a variety of sources

Prerequisite: Physics I (1210, 1310) and Physics II (1220, 1320)

Course content: P2310 is the third course of a four-course sequence designed to provide a survey of general physics. The course is intended for majors in physics, astronomy, engineering, and other physical sciences. Topics to be covered include wave mechanics, geometrical optics, polarization, interference, and Fraunhofer and Fresnel diffraction. The course will also review optical instruments and detection techniques.

Exams:

Mid-term Exams (**Wed. Sept. 30; Wed. Nov. 4**):	30%
Homework (weekly problem sets):	25%
Lab (weekly lab projects):	25%
Final Exam (**Wed., Dec. 9, 1:15 – 3:15 pm**):	20%

Exams will include quantitative problem solving and short answers.

Homework: Homework will include weekly problem sets assigned on Wednesday and will usually cover material from the text or presented in class. These assignments will typically be due on the corresponding class period during the following week (*i.e.*, the next Wednesday), at the beginning of class. *Late assignments will be accepted for only one day*, also the lowest homework grade will be dropped.

Laboratory: Will be scheduled by arrangement. The laboratory will include a set of quantitative activities and a laboratory report. Meeting times will be scheduled by arrangement with the instructor. A sign-up sheet will be distributed so that lab groups can be formed and times for these activities can be arranged.

Tentative Schedule (subject to change)

Week	Subject	Chapters
Week 1 (Aug. 24, 26, 28)	Course Overview and History	1
Week 2 (Aug. 31, Sept. 2, 4)	Propagation of Light and Transparent Media	4, 5
Week 3 (Sept. 7, 9, 11)	Geometric Optics	6
Week 4 (Sept. 14, 16, 18)	More Geometric Optics	7
Week 5 (Sept. 21, 23, 25)	Optical Instruments and Detectors	-
Week 6 (Sept. 28, Oct. 2)	Wave Motion and Mechanics **Test 1 (Wed., Sept. 30)**	2
Week 7 (Oct. 5, 7, 9)	Electromagnetic Theory	3
Week 8 (Oct. 12, 14, 16)	Superposition of Waves	8
Week 9 (Oct. 19, 21, 23)	Polarization	9, 10
Week 10 (Oct. 26, 28, 30)	Interference	11
Week 11 (Nov. 2, 4, 6)	Diffraction	12
Week 12 (Nov. 9, 11, 13)	Fourier Optics **Test 2 (Thurs., Apr. 2)**	13
Week 13 (Nov. 16, 18, 20)	Fourier Optics Continued	13
Week 14 (Nov. 23, 25)	Modern Optics **No Class Nov. 27 (Thanksgiving)**	14
Week 15 (Nov. 30, Dec. 2, 4)	Modern Optics Continued	14

Final Exam: Wednesday, Dec, 9, 1:15 pm – 3:15 pm