

PHY 4424 OPTICS (3 CH), FALL 2012

Textbook: Introduction to Optics by Frank L. Pedrotti

(3rd edition, publisher: Person Addison Wesley)

11:00 am – 12:15 pm, Tue & Thurs, ISA 3048

Instructor: Dr. Xiaomei Jiang

Office Hours: Tue & Thurs 9:30–10:30am, and by appointment.

Office: ISA 4214, Phone 813-974-7765, Email: xjiang@usf.edu

Syllabus

Overall Course Objective: To understand fundamentals of classical and modern optics including reflection, refraction, polarization, Interference and diffraction. To grasp the principles and applications of optical devices and instruments including lenses, mirrors, polarizers, wave plates, thin films and gratings.

Grading:*

Quizzes	10%
homework	20%
Midterm	30%
Final Exam	40%

*: Plus and minus will be used for this course.

** : Attendance record will be used for grade adjustment in marginal case.

Tentative Class Schedule:

Week	Dates	Topic
1	Aug. 28	Ch 1. Nature of light; Ch 2. Geometrical Optics, 2.1-6
2	Aug. 30	Ch 2. Geometrical Optics, 2.7-12
3	Sept. 4	Ch 3. Optical Instrumentation
4	Sept. 6, 11	Ch 4. Wave Equations
5	Sept. 11, 13	Ch 5. Superposition of Waves
6	Sept. 18, 20	Ch 7. Interference of light
7	Sept. 20, 25	Ch 6. Properties of lasers
	Sept. 27	Ch.8. Optical Interferometry

	Oct. 2, 4	Ch.9. Coherence
	Oct. 4	QZ 1 (3%)
	Oct. 9	Ch.21. Fourier Optics
	Oct. 11	Ch. 11. Fraunhofer Diffraction
	Oct. 16	Ch. 12. Diffraction Grating
8	Oct. 18	Midterm Exam
9	Oct. 23, 25	Ch. 13. Fresnel Diffraction
	Oct. 30, Nov. 1	Ch. 14 Matrix Treatment of Polarization
10	Nov. 6	Ch. 15. Production of Polarized Light
11	Nov. 8, 13	Ch. 25. Optical Properties of Materials
12	Nov. 15	Ch. 26. Laser Operation
	Nov. 20, 27	Ch. 24. Nonlinear Optics and the Modulation of Light
13	Nov. 22	Thanksgiving Holiday, No class.
	Nov. 29	QZ 2 (7%)
	Dec. 2, 6	Ch. 21. Fiber Optics
14	Dec. 6	Review
15	Dec. 11	Final Exam, 10:00am to noon

Specific policies:

- **Make-up exam policy:** No make-up exams will be given unless it is due to medical emergency or similar emergency situations (must present proof). Makeup exams will have different questions than regular exams, and are slightly more difficult than regular exams.
- **Schedule of individual exam time:** NO possibility of taking regular exam on the time other than the scheduled one. Please refer to **Accommodations** for more details.
- **Incomplete Grade Policy:** "I" grade may be given to an undergraduate student only when a small portion of the student's work is incomplete (due to medical reason or family emergency) and only when the student is otherwise earning a passing grade. Passing grade for Incomplete consideration is "C-" and above.

- **Religious Preference Absence Policy:**

Students who anticipate the necessary of being absent from examination due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second class meeting.

Accommodations:

Any student with a disability is encouraged to meet with the instructor privately during the first week of classes to discuss accommodations. Each student must bring a current **Memorandum of Accommodation** from the Office of Student Disability Services (974-4309, SVC1133), which is prerequisite for receiving accommodation. Accommodated examinations through the Office of Student Disability Services require two weeks notice. All course materials are available in alternate format if requested in the student's Memorandum of Accommodations.