

PHYSICS

Optics And Lasers - PHYS 3610

Last updated on August 18 2012

Textbook: "Introduction to Modern Optics" by Grant R. Fowles, Second Edition

Reference: "Optics" by Eugene Hecht, Fourth Edition

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Time: MWF: 10:00 – 10:50

Office Hours: MWF 9:00-10:00 or by appointment

Prerequisites:

Knowledge of calculus recommended.

Topics

1. Elementary optical phenomena and the Nature of Light. Chapter 1; HW: 1.1, 1.2, 1.5, 1.6, 1.9, 1.11
2. The Vectorial Nature of Light. Chapter 2; HW: 2.2, 2.5, 2.6, 2.11, 2.15, 2.16, 2.23
MIDTERM EXAM 1
3. Coherence and Interference. Chapter 3; HW: 3.3, 3.7, 3.8, 3.10, 3.12
4. **Multiple beam interference. Chapter 4. HW: 4.5, 4.7, 4.9 – may be covered**
5. Diffraction. Chapter 5. HW: 5.2, 5.7, 5.11, 5.13, 5.16,
MIDTERM EXAM 2
6. Thermal radiation and light quanta. Chapter 7. HW: 7.1, 7.4, 7.6, 7.9, 7.12
7. Optical Spectra. Chapter 8; HW: 8.1, 8.5, 8.6, 8.8
8. Amplification of light. Lasers. Chapter 9; HW: 9.1, 9.2, 9.5, 9.6
9. Optic of solids. Chapter 6; HW: 6.1, 6.4, 6.5, 6.6, 6.13, 6.17
10. **Ray optics. Chapter 10; HW: 10.1, 10.2, 10.4, 10.6 – may be covered**

Exams:

2 Midterm Exams: date to be announced, likely after the topics 2 and 5

Final Exam: see exam schedule

Grades:

Grades are based on three scores according to the following combination

Final exam	30%
Midterm exams (2)	40%
Homework	30%

90-100	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	40-49
A	A-	B+	B	B-	C+	C	C-	D	F