

# Physics 340 – Light and Optics

Sonoma State University  
Department of Physics and Astronomy  
Spring 2009

## ***General Information***

**Instructor: Dr. Scott A. Severson**

**Class Schedule: 9:20 – 10:35 AM Tuesday and Thursday**

**Location: Darwin 29**

**Office Hours: 11:00 - 11:50 AM Monday, Wednesday, Thursday**

**Office: Darwin 300L**

**Email: [scott.severson@sonoma.edu](mailto:scott.severson@sonoma.edu)**

**Phone: (707) 664-2376**

**Course Website:**

**<http://www.phys-astro.sonoma.edu/people/faculty/severson/p340>**

## ***Course Description***

This is a three-hour lecture course. The course presents an examination of the properties of light from geometric and physical optics perspectives. Topics include ray optics, refraction, diffraction, coherence, interference, and polarization. The course will present Fermat's principle, Huygens' principle and Fourier optics.

## ***Textbook***

**Optics (4th Edition)**

**Author**

Eugene Hecht

**ISBN-10**

0805385665

## ***Policies***

**University Policies**

There are important University policies that you should be aware of, such as the add/drop policy; cheating and plagiarism policy, grade appeal procedures; accommodations for students with disabilities and the diversity vision statement. (Go to this URL to find them:

**<http://www.sonoma.edu/uaffairs/policies/studentinfo.shtml>**

## **Grading**

### ***Homework* 35 %**

Homework assignments are due Thursday at the beginning of class. Expect about one problem set per week. I encourage you to work problems through independently before working with classmates to review and collaborate. The sharing of ideas is encouraged, copying of answers is forbidden. I may explicitly designate some problems as group work and then a group solution is allowed.

### ***Midterms (2)* 30 % (15% each)**

There will be two in-class midterm exams, Tuesday, March 10 and Tuesday, April 7. You are allowed to bring a single sheet of notes to each exam.

### ***Oral Presentation* 10 %**

Students will give individual 15-minute independent research talks near the end of the semester. Students may propose a topic for instructor consent or select from list of pre-approved topics that will be presented in class during the semester.

### ***Final Exam* 25 %**

There will be a cumulative final exam, Thursday, May 21 8:00 - 9:50 AM. The format will be similar to the midterms and a sheet of notes is allowed.

### ***Instructor Discretion***

I reserve the right to raise your grade if exceptional effort and class participation are observed through the semester. Improvement throughout the semester is also noted.

## **Other Class Policies**

- Questions are encouraged.
- Turn off cell phones and other distracting small electronics.
- Arrive to class on time.
- Try your best to attend every class.
- Read subject material before each class.
- Start homework problems early. Do not fall behind!
- Come to my office during my office hours with questions.

## Approximate Course Schedule

Week	Class Date Tuesday	Class Date Thursday	Hecht <i>Optics</i> Chapter	Administrative
1	Jan 27	Jan 29	2	
2	Feb 03	Feb 05	2	
3	Feb 10	Feb 12	3	
4	Feb 17	Feb 19	4	
5	Feb 24	Feb 26	4	
6	Mar 03	Mar 05	5	
7	Mar 10	Mar 12	5	Midterm Tues (Ch 2-4)
8	Mar 17	Mar 19	6	
9	Mar 24	Mar 26	7	
10	-	Apr 02	8	
11	Apr 07	Apr 09	9	Midterm Tues (Ch 5-7)
12	-	-	-	<i>(Spring Break)</i>
13	Apr 21	Apr 23	9	
14	Apr 28	Apr 30	10	
15	May 05	May 07	10	Oral Presentations
16	May 12	May 14	Selected Topics	Oral Presentations
17	-	May 21	-	Cumulative Final Thursday, May 21 8:00-9:50 AM