

Physics 471
Principles of Optics
Fall Semester 2009

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Text

The text for this course is *Physics of Light and Optics*, available in the bookstore. An electronic copy of the text is available at <http://optics.byu.edu>. It is not appropriate to print a copy of the book using department resources.

Grading Summary

Grade: 9% Quiz, 5% Report, 35% Homework, 12% Exam I, 12% Exam II, 12% Exam III, 15% Final
Minimum Guarantees: A = 92%, A- = 88%, B+ = 83%, B = 78%, B- = 72%

Preparing for Lecture: Quizzes (9% of grade)

The class schedule lists the sections from the text that will be covered in class. You are expected to study this material before coming to class, including any examples contained in the text. To encourage careful reading, we will have short in-class quizzes each day that reading is assigned. These will be self-graded and half credit will be given for having read and half credit will be for getting the correct answers on the quiz. You will keep a record of these scores on a summary sheet, and turn this sheet in at the end of the semester. Your lowest five quiz scores will be dropped when computing the final grade.

In-Class Presentation (5% of grade)

Each student is required to give a five minute presentation on a historical person who influenced the field of optics. Presentations should be in PowerPoint, and should include a list of supporting references at the end. You are welcome to start from presentations made in previous years (available on the class web site), but make sure to give proper credit to those who have worked on the presentation. To receive credit, email me your presentation with all participants clearly listed on the first slide.

Homework (35% of grade)

Homework is due each Tuesday and Thursday before 7:00pm, and should be submitted in the bin on the 3rd floor. The lowest homework score will be dropped when computing the final grade. You may also take the opportunity to appeal in writing if you feel the grading was in any way unfair (submit appeals in the appeals slot).

Resubmitting Homework

Each assignment will be graded and returned before the next assignment is due. An assignment may be resubmitted one week of the first deadline to restore 50% of the points missed. Resubmissions must be *completely finished* (all problems) and *completely accurate* (you can check with the TA if you have questions). In other words, the re-grading is all or nothing. Late homework is treated like a resubmission. Resubmissions must follow these guidelines:

1. Use a different color pen or pencil when completing an assignment that was previously given partial credit (not red...that is what the grader will use).
2. Submit it in the "re-grade" slot, not the regular homework slot.
3. Clearly write "resubmission" at the top of the assignment.

The university likes us to remind you of the following policies:

Harassment

Harassment of any kind is inappropriate at BYU. Specifically, BYU's policy against sexual harassment extends not only to employees of the university but to students as well. If you encounter sexual harassment, gender-based discrimination, or other inappropriate behavior, please talk to your professor, contact the Equal Employment Office at 422-5895 or 367-5689, or contact the Honor Code Office at 422-2847.

Disabilities

BYU is committed to providing reasonable accommodation to qualified persons with disabilities. If you have any disability that may adversely affect your success in this course, please contact the University Accessibility Center at 422-2767. Services deemed appropriate will be coordinated with the student and instructor by that office.

Children in the Classroom

The serious study of the physical and mathematical sciences requires uninterrupted concentration and focus in the classroom. Having small children in class is often a distraction that degrades the educational experience for the entire class. Please make other arrangements for child care rather than bringing children to class with you. If there are extenuating circumstances, please talk with your instructor in advance.

Physics 471 Class Schedule—Draft 1

	Monday	Tuesday	Wednesday	Thursday	Friday
September	31 Reading: 0.2,1.1-1.6	1 Homework 1	2 Reading: 0.3; 1.7-2.3	3 Homework 2	4 James Maxwell Reading: 2.4-2.7
	7 Labor Day	8 Homework 3	9 Reading: 3.1-3.5	10 Homework 4	11 Hendrik Lorentz Reading 3.6-3.7
	14 Reading: 4.1-4.3	15 Homework 5	16 Willbrord Snell Reading: 4.4-4.8	17 Homework 6	18 Reading: 4.9-4.A
	21 Begin Exam 1 Review	22 Homework 7	23 End Exam 1 No Class	24	25 Christian Huygens Reading: 5.1-5.4
	28 Reading: 5.5-5.8	29 Homework 8	30 Augustin Fresnel Reading: 6.1-6.4	1 Homework 9	2
October	5 Ole Roemer Reading: 6.5-6.7	6 Homework 10	7 Reading: 6.8-6.9	8 Homework 11	9 Michael Faraday Reading: 0.4,7.1-7.4
	12 Reading: 7.5-7.7	13 Homework 12	14 Galileo Galilei Reading: 7.A	15 Homework 13	16 Lord Rayleigh (John Strutt) Reading: Color
	19 Albert Michelson Reading: 8.1-8.4	20 Homework 14	21 Thomas Young Reading: 8.5	22 Homework 15	23 Reading: 8.6
	26 Begin Exam 2 Review	27 Homework 16	28 End Exam 2 No Class	29	30 Isaac Newton Reading: 9.1-9.3
	2 Reading: 9.4-9.6	3 Homework 17	4 Pierre de Fermat Reading: 9.7-9.8	5 Homework 18	6 Reading: 10.1-10.4
November	9 Reading 10.5-10.6	10 Homework 19	11 Reading: 11.1-11.3	12 Homework 20	13 Gustav Kirchoff Reading: 11.4-11.5
	16 Joseph von Fraunhofer Reading: 11.6-11.7	17 Homework 21	18 Dennis Gabor Reading: 11.8	19 Homework 22	20 Reading: 12.1-12.3
	23 Max Planck Reading: 12.4-12.5	24 Homework 23 Reading: 13.1-13.2	25 Drive Safe Day	26 Thanksgiving	27 Thanksgiving
	30 Reading: 13.3-13.4	1 Homework 24	2 Begin Exam 3 Review	3 Homework 25	4 End Exam 3 No Class
December	7 Albert Einstein Quantum Optics 1	8	9 Paul Dirac Quantum Optics 2	10 Homework 26	11

Homework

All problems are worth 4 points unless otherwise noted

1. P1.1; P1.5; L1.11(8pts)
2. P1.7; P1.9; P1.10; P1.12; P2.1; P0.16; P0.17
3. P2.2; P2.5; P2.7; P2.9; P2.10; P2.11
- 4-26:TBA