PHYSICS 5430 Optics FALL 2010

TIME (for lectures): M, W 4:05 – 5:30 PM. Room: 177 Physics

TEXT: Principles of PHYSICAL OPTICS by C. A. Bennett, Wiley. 2nd Ed. ISBN: 978-0-470-12212-9

LECTURER: Professor J. Huang

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COURSE WEB PAGE: WSU Blackboard

OFFICE HOURS: Mondays & Wednesdays 10 AM – 11 AM @ 385- Physics Building.

Pre-requisites: PHY2140 or PHY2180, MAT2030 or PHY3700; co-requisites. (PHY majors) PHY 5341.

Readings

The single most important thing that you as a student can do to obtain a good understanding and hence a good grade is to read and reread the text until comprehension is obtained. The lectures can help toward this goal, but they are not by themselves sufficient. For one thing, there is simply not enough time in the lectures to cover the material with as much thoroughness as the text does. Also, the lectures will often follow a different line of discussion than the text so that you can see two distinctive ways of viewing the same phenomenon. So *please read the textbook!* We will cover chapters 1 – 7 and 9, omitting most of the starred sections, but *not* section 4.9.

Homework assignments

A few problems from the text will be assigned each week and will be collected one week later. At that time solutions will be posted on bb. Thereafter no late homework will be accepted. Your homework will be marked on a scale with two points being given for each complete and correct answer and one point for each reasonable attempt. No credit will be given for minimal efforts or for work that is obviously copied from another student.

Exams and grading scales

Your grade in the course will be determined by your performance on the homework, the two hourly exams, and the final exam. Lab will be graded separately and is not part of the final grade of this course.

Homework & Quizzes	1 unit
First Hourly Examination	1 unit
Second Hourly Examination	1 unit
Final Examination	2 units
TOTAL	5 units

Percent	Grade
80-100	A/A-
70-80	B+/B/B-
60-70	C+/C/C-
50-60	D+/D/D-
0-50	E

The final exam will be comprehensive. There are no make-ups for any of exams.

In-class policies

Out of consideration for the other students in the lecture please abide by the following rules of conduct: (1) Turn off all cell phones while in lecture, (2) Please arrive on time for lecture and do not leave early, (3) Please be mindful of your classmates.

Academic dishonesty

All of the graded assignments are designed to measure your individual understanding of the material. No forms of cheating on these graded assignments will be tolerated (working together on the homework assignments is not considered cheating but copying of someone else's homework is). Anyone found cheating on any graded

activity will receive a grade of zero for that part of their grade, and may receive a failing grade for the course. Use of a cell phone or texting device during an exam will be considered to be prima-facie evidence of cheating.

Students with disabilities

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

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Wk	Date	Day	Lecture Topic	Reading
1	01/09	M	Review - 1	
	01/11	W	Review - 2	Chp 1.1-1.7
	01/13	F	No Lab	
2*	01/16	M	Waves	
	01/18	W		Chp 2.1-2.7
	01/20	F	**Lab-1**	
3	01/23	M	EM wave and photons	
	01/25	W		
	01/27	F	**Lab-2**	
4*	01/30	M	Reflection and refraction	Chp 3.1-3.8
	02/01	W		
	02/03	F	**Lab-3**	
5	02/06	M	Reflection and refraction	
	02/08	W		Chp 4.1-4.10 (skip
	02/10	F	No Lab	
6	02/13	W	Geometric Optics	
	02/15	M	**First Exam 90 minutes (Chapters 1-3)**	
	02/17	F	**Lab-4**	
7*	02/20	M	Geometric Optics	
	02/22	W		Chp 5.1- 5.12
	02/24	F	**Lab-5**	
8	02/27	M	Superposition and interference	
	02/29	W		
	03/02	F	No Lab	
9*	03/05	M	Superposition and interference	Chp 6.1-6.5
	03/07	W		
	03/09	F	**Lab-6**	
10	03/12	M	**SPRING BREAK**	
	03/14	W	**SPRING BREAK**	
	03/16	F	**No Lab**	
11*	03/19	M	Diffraction	
	03/21	W		Chp 7.1-7.9
	03/23	F	No Lab	
12	03/26	M	**Second Exam 90 minutes (Chapters 4-6)**	
	03/28	W	Lasers	
	03/30	F	**Lab-7**	
13*	04/02	M	Lasers	
	04/04	W		Chp 9.1- 9.12
	04/06	F	**Lab-8**	
14	04/09	M	Polarization	
	04/11	W		
	04/13	F	**Lab-9**	
15*	04/16	M	Polarization	
	04/18	W		
	04/20	F	**Lab-10**	
16	04/23	M	Review - **Class End**	

Final Exam:

Note: quiz weeks are marked with *