PHYS3417 Optics, Fall 2015

Text:	Introduction to Optics, 3rd edition, Frank L. Pedrotti.
Office Hours:	MWF 9:00-10:00, MW 3:20-4:00, or by appointment
Instructor:	Dr. Ir. Wilhelmus J. Geerts
E-mail:	wjgeerts@txstate.edu
Office:	RFM 3228
Phone:	512-245-1821
Web-page:	http://www.txstate.edu/physics/wimgeerts/PHYS3417.html
Class room:	RFM3223
Class Meeting time:	MW 2:00-3:20
Lab Meeting time:	F 2:00-5:00 (During the first week I will also lecture during the lab meeting time)
Course Description:	One semester survey of geometrical and physical optics accompanied by laboratory experience. Topics covered include electromagnetic waves and their propagation, geometrical optics, polarization, interference, diffraction, Fourier optics, and polarization.
Prerequisite:	PHYS2435
Withdrawal:	The last day and time to drop with an automatic W grade is October 25, 2015, 11:59 pm. The last day to withdraw from the university during the semester is November 19, 2015, 5:00 pm. More information on dropping or withdrawing is in your 2015 Schedule of Classes. Remember that dropping or withdrawing is an administrative procedure that the student must carry out; an instructor cannot remove you from a course.
Grades:	Grades for the course will be determined as follows:

Homework	20%
Lab	30% (9 assignments)
Semester Exams	50% (4 exams)

Honor Code Texas State University

As members of a community dedicated to learning, inquiry, and creation, the students, faculty, and administration of our University live by the principles in this Honor Code. These principles require all members of this community to be conscientious, respectful, and honest.

WE ARE CONSCIENTIOUS. We complete our work on time and make every effort to do it right. We come to class and meetings prepared and are willing to demonstrate it. We hold ourselves to doing what is required, embrace rigor, and shun mediocrity, special requests, and excuses.

WE ARE RESPECTFUL. We act civilly toward one another, and we cooperate with each other. We will strive to create an environment in which people respect and listen to one another, speaking when appropriate, and permitting other people to participate and express their views.

WE ARE HONEST. We do our own work and are honest with one another in all matters. We understand how various acts of dishonesty, like plagiarizing, falsifying data, and giving or receiving assistance to which one is not entitled, conflict as much with academic achievement as with the values of honesty and integrity.

THE PLEDGE FOR STUDENTS

Students at our University recognize that, to insure honest conduct, more is needed than an expectation of academic honesty, and we therefore adopt the practice of affixing the following pledge of honesty to the work we submit for evaluation:

I pledge to uphold the principles of honesty and responsibility at our University.

THE PLEDGE FOR FACULTY AND ADMINISTRATION

Faculty at our University recognize that the students have rights when accused of academic dishonesty and will inform the accused of their rights of appeal laid out in the student handbook and inform them of the process that will take place. I recognize students' rights and pledge to uphold the principles of honesty and responsibility at our University.

ADDRESSING ACTS OF DISHONESTY

Students accused of dishonest conduct may have their cases heard by the faculty member. The student may also appeal the faculty member's decision to the Honor Code Council. Students and faculty will have the option of having an advocate present to insure their rights. Possible actions that may be taken range from exoneration to expulsion.

Tentative Schedule PHYS3417: Fall 2015

Day	Description	Chapter	Labs/Presentation/Activity
Monday 8-24-2015	Geom. Opt.	Ch. 2	
Wednesday 8-26-2015	Geom. Opt.	Ch. 2	*Lens Activity*
Friday 8-28-2015	Imaging	Ch. 2	
Monday 8-31-2015	Imaging	Ch. 3	
Wednesday 9-2-2015	Opt. Instruments	Ch. 3	
Friday 9-4-2015			*Stop, Pupils, and Windows activity*
Monday 9-7-2015	Labor Day		
Wednesday 9-9-2015	Opt. Instruments	Ch. 3	
Friday 9-11-2015			1. Focal length lab
Monday 9-14-2015	Opt. Instruments	Ch. 3	
Wednesday 9-16-2015	Ray tracing	Ch. 18	
Friday 9-18-2015			2. Instrument lab *Introduction to Mathematica*
Monday 9-21-2015	Ray tracing	Ch. 18	
Wednesday 9-23-2015	Aberration Theory	Ch. 20	
Friday 9-25-2015			3. Ray tracing lab
Monday 9-28-2015	Aberration Theory	Ch. 20	
Wednesday 9-30-2015	SE1	Ch. 2, 3, 18, 20.	
Friday 10-2-2015			4. Aberration lab
Monday 10-5-2015	Wave Equation	Ch. 4	
Wednesday 10-7-2015	Superposition of Waves	Ch. 5	
Friday 10-9-2015			5. Interferometry Lab (5x)
Monday 10-12-2015	Interference of Light	Ch. 7	
Wednesday 10-14-2015	Interference of light	Ch. 7	
Friday 10-16-2015			Interferometry Lab (5x)
Monday 10-19-2015	Polarization of Light	Ch. 14	
Wednesday 10-21-2015	Polarization of Light	Ch. 14	*Polaroid/wave plate activity*
Friday 10-23-2015			6. Ellipsometer lab, speed of light (3x)
Monday 10-26-2015	Polarizing Optics1	Ch. 15	
Wednesday 10-28-2015	SE2	Ch. 4, 5, 7, 14, 15.	
Friday 10-30-2015			Ellipsometer lab, speed of light (3x)
Monday 11-2-2015	Review SE3		
Wednesday 11-4-2015	SE2	Ch. 4, 5, 7, 14, 15	
Friday 11-6-2015			7. Diffraction lab (4x)
Monday 11-9-2015	Fraunhofer diffraction	Ch. 11	
Wednesday 11-11-2015	Fraunhofer diffraction	Ch. 11	
Friday 11-13-2015			Diffraction lab (4x)
Monday 11-16-2015	Diffraction Grating	Ch. 12	
Wednesday 11-18-2015	Radiometry	Ch. 1	
Friday 11-20-2015			8. Laser certification
Monday 11-23-2015	Light sources	Ch. 6	
Wednesday 11-25-2015	*Thanksgiving*	*Holiday: No Class*	
Friday 11-27-2015	*Thanksgiving*	*Holiday: No Lab*	
Monday 11-30-2015	Optics of the eye	Ch. 19	
Wednesday 12-2-2015	SE4	Ch. 11, 12, 1, 6, 19	
Friday12-4-2015			Laser certification.