

Course Syllabus

PHY385H1F – “Introductory Optics”

Fall 2011, University of Toronto St. George Campus

[Updated version Sep.20, 2011 – differences from Sep. 13 version are **highlighted in blue**]

Welcome! The purpose of this course is to use what you have used in your studies of Electricity and Magnetism (PHY250) and Classical Mechanics (PHY254) and apply it to the study of light. Among other things, we will study Electromagnetic Waves and Propagation of Light; Transmission of light through a medium; the Huygens and Fermat principles; Geometrical optics and optical instruments; Polarization; Introduction to photons; Lasers; Interference of waves and diffraction. During the 2-hour weekly practicals we will be working in small teams on exercises and exploring some hands-on apparatus to help with the material in the lectures.

The course web-site is available at <http://goo.gl/5tQqa>, or Google search “jason harlow teaching” and click on PHY385H1F Fall 2011. Marks will be posted on <http://portal.utoronto.ca>.

Instructor: **Jason Harlow**

Phone: (416) 946-4071

Email: jharlow@physics.utoronto.ca Responding to Emails: I will endeavour to respond to email inquiries from students within 2 days. If you do not receive a reply within this period, please resubmit your question(s) and/or phone (leave a message if necessary).

Web Page: <http://www.physics.utoronto.ca/~jharlow/>

Office: MP129A (in the “Physics Teaching Group” office of the 1st floor of the North Wing of McLennan Labs, 60 St. George St.)

Fall 2011 semester Office Hours: Tuesdays 3-4pm. In addition to these hours, you have are invited to call or email for an appointment, or just drop by my office.

Required Text: **“Optics” 4th Edition (Copyright 2002) by Eugene Hecht.** This course covers Chapters 1-5 and 8, and sections 7.1, 9.1, 9.2, 9.3, 10.1, 10.2 and 13.1.

Teaching Assistant: **Niall Ryan** Office: MP704A, Phone: 416-946-0869 Email: nryan@physics.utoronto.ca

Marking scheme:

Final Exam	45%
Two Term Tests on Oct. 11 , Nov. 10	30%
Teamwork exercises performed during Practical	15%
Problem Sets	10%

Tests and Exam

The two 50 minute tests will be held on October 11 and November 10 during class time in the normal classroom. A 2-hour final examination, administered by the Faculty of Arts & Science, will be held between December 9-20 at a time and place specified by the Faculty. Allowed aids during both the tests and the exam include a calculator and the Hecht textbook.

Practicals

In addition to classes, you will meet 10 times through the semester for 2 hours in Practical. Attendance is mandatory. The material is the same as what is being taught in classes, but your time will be spent in discussion, problem-solving, hands-on activities and teamwork. The goals are to deepen your understanding of the physics, develop your laboratory skills and analysis techniques, and get you used to working in teams.

Please see the course web-site for the Practicals schedule.

Problem Sets

Problem Sets will be posted on the course website approximately two weeks prior to the due date. You will also be able to pick up a paper copy in class. Problem sets are to be turned in directly to the professor **before** the beginning of the lecture on the due date. Any lateness will incur a multiplicative penalty of 10% reduction per business day.

Class Reading Schedule:

Week 1, Sep. 13, 15:	Chs. 1, 2	
Weeks 2 and 3, Sep. 20, 22, 27:	Ch. 3	
Weeks 3 and 4, Sep. 27, 29, Oct. 4, 6:	Ch. 4	[Term Test 1 on Oct. 11]
Weeks 5, 6 and 7, Oct. 13, 18, 20, 25, 27:	Ch. 5	
Week 8, Nov. 1, 3:	Sections 7.1, 13.1	[Term Test 2 on Nov. 10]
Week 9, Nov. 15, 17, 22:	Ch. 8	
Week 10, Nov. 24:	Sections 9.1, 9.2, 9.3	
Weeks 11 and 12, Nov. 29, Dec. 1, 6:	Sections 10.1, 10.2	