



## SYLLABUS

### OPTI 201R

### Geometrical and Instrumental Optics I

Tuesdays and Thursdays 8:00 AM – 9:15 AM, Meinel 410

#### Description of Course

This course will introduce students to the principles, designs, applications, and recent developments of a broad variety of optical instruments. Upon completion of the course students will be able to understand optical principles, design requirements, and how to apply these instruments in practice.

#### Topics covered:

This course will teach the student four main factors relating to image formation in geometrical optics:

- ▶ Refraction and Reflection
- ▶ Beam Steering
- ▶ Image Spatial Location and Size
- ▶ Paraxial Raytracing

#### Course Website

<https://wp.optics.arizona.edu/lasso/courses/opti-201r-geometrical-and-instrumental-optics/>

#### Instructor and Contact Information

##### Instructor:

Dr. Felipe Guzman  
Office: Meinel Building, Room 429  
Email: [felipe@optics.arizona.edu](mailto:felipe@optics.arizona.edu)

Associate Professor of Optical Sciences  
520-626-1778  
Office hours: Tu & Th 9:15-10am, immediately after class  
(or email for appointment)

##### Teaching Assistants:

Erin Clark  
Office: Meinel Building, Room 615 (office) or 106F (lab)  
Email: [erinclark13@email.arizona.edu](mailto:erinclark13@email.arizona.edu) Office hours: Tu 2-3 pm & Fr 9:30-10:30am

Hayden Wisniewski  
Office: Meinel Building, Room 615 (office) or 106F (lab)  
Email: [hwisniewski@email.arizona.edu](mailto:hwisniewski@email.arizona.edu) Office hours: Mo & We 1-2pm

#### Assignments and Examinations:

- ▶ **Textbook:** No required text for the course – See suggested reading list below
- ▶ **Class Notes:** (Required) Course notes are available at Fast Copy
  - ▶ Note: some of these notes may carry over into the spring semester course OPTI202R.
- ▶ **Grading:**
  - ▶ 10-15 Pop Quizzes = 10%

- ▶ 2 Midterm Exams: 20% each = 40%
- ▶ Problem Sets (Homework): 25%
- ▶ Final Exam: 25%
- ▶ Final grading will be done on a curve.
- ▶ Corrections to errors in grading will only be considered within one week following the return of the homework assignment or exam.
- ▶ **Homework:**
  - ▶ Homework assignments and their DUE dates will be posted on our on-line Syllabus.
  - ▶ (New homework sets will NOT be handed out in class on paper, only electronically through our on-line Syllabus). You will have (a minimum) of one week to do each homework set.
  - ▶ Homework will be collected at the start of class on the DUE date.
  - ▶ Homework turned in after it has been collected will not be accepted, unless accompanied by a written letter from a doctor or a hospital. NO exceptions.
  - ▶ You may work with other classmates on the homework sets. In fact, this is encouraged. However, be sure that you really understand and actually learn the material—all exams must be your own work!
- ▶ **Quizzes:**
  - ▶ Quick quizzes will be given during the first 2-3 minutes of random classes throughout the semester. There will be a total of about 10-15 quizzes.
  - ▶ The purpose of the quizzes is to monitor basic material understanding as well as to promote on- time class attendance.
  - ▶ Missed quizzes cannot be made up. If you have an unavoidable absence, make sure to inform the instructor prior to class.

## Suggested Reading

These books are on reserve in the Optical Sciences Library):

- ▶ John E. Greivenkamp, *Field Guide to Geometrical Optics* (SPIE Press)
- ▶ Warren J. Smith, *Modern Optical Engineering* (SPIE Press)
- ▶ Eugene Hecht, *Optics* (Addison-Wesley Publishing Company)

## Final Examination or Project

The Final Exam has been scheduled for Thursday, December 19<sup>th</sup> 2019.

## Grading Scale and Policies

The grading system for this course will result in grades from A (excellent) through E (failure).

### Grading Scale:

- 85-100%: A
- 75-85% : B
- 65-75% : C
- 50-65% : D
- <50% : E

### Classroom Policies:

- ▶ Turn off all cell phones.
- ▶ No talking during class, unless for class participation!
- ▶ No food in the classroom, please.
- ▶ The only electronic device allowed during the exams will be a calculator. Any student who uses any other electronic device (laptop, cell phone, cell phone camera, etc.) will receive a zero (0%) for that exam.

### Attendance Policy:

It is important to attend all classes, as what is discussed in class is pertinent to adequate performance on assignments and exams. If you must be absent, it is your responsibility to obtain and review the information you missed. Unannounced quizzes will be given to encourage attendance, and to help you gauge your progress in learning the material.

If you miss the midterms or final exam, they may not be made up unless you have a documented medical or family emergency.

**Requests for incomplete (I) or withdrawal (W)** must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

## Important dates

Date	Event	Comments	Notes
2019-09-03	Introduction to College of Optical Sciences	Student groups & Photos	
2019-10-15	Review session prior to Midterm I	Practice problems	
2019-10-17	Midterm I	All material until 2019-10-10	
2019-11-19	Review session prior to Midterm I	Practice problems	TBC
2019-11-21	Midterm II	All material until 2019-11-14	TBC
2019-11-28	Thanksgiving	No classes	
2019-12-19	<b>FINAL EXAM</b>	Time: 8 – 10 am	

TBC: To be confirmed.

## Code of Academic Integrity

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See:

<http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

*Selling class notes and/or other course materials to other students or to a third party for resale is not permitted under any circumstances.* Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

Also, students using images from the internet without citation is considered an act of plagiarism. If you have any questions regarding this, please see the instructor. The University Libraries have some excellent tips for avoiding plagiarism. See:

<http://new.library.arizona.edu/research/citing/plagiarism>.

## Accessibility and Accommodations

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520-621-3268) to explore reasonable accommodation.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

## Absence & Class Participation Policy

Participating in the course and attending lectures and other course events are vital to the

learning process. As such, attendance is required at all lectures and laboratory sessions. Students who miss class due to illness or emergency are required to bring documentation from their health-care provider or other relevant, professional third parties. Failure to submit third-party documentation will result in unexcused absences.

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

### **Threatening Behavior Policy**

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

### **UA Nondiscrimination and Anti-Harassment Policy**

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

### **Classroom Behavior Policy**

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

### **Additional Resources for Students**

UA Academic policies and procedures are available at <http://catalog.arizona.edu/policies>

Student Assistance and Advocacy information is available at

<http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>

### **Confidentiality of Student Records**

<http://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa?topic=ferpa>

### **Subject to Change Statement**

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

Home» Questions » Management » Management - Others » Others - Others » OPTI 201R « Fall 2013 Problem Set #8 8.1 Do  
Questions Courses. OPTI 201R « Fall 2013 Problem Set #8 8.1 Do problem 5.3 in your textbook. 8.2 Do problem 5.12 in y. OPTI  
201R « Fall 2013 Problem Set #8 8.1 Do problem 5.3 in your textbook. 8.2 Do problem 5.12 in your textbook. 8.3 «Marble»  
Problem: Consider a spherical «marble» in air ( $n = 1$ ). Document Preview: OPTI 201R « Fall 2013 Problem Set #8 8.1 Do  
problem 5.3 in your textbook.