



UNIVERSITY OF
CENTRAL FLORIDA

OSE 3052L - Foundations of Photonics Laboratory

Section: 0001

Optics and Photonics

Course Information

Term: Spring 2026

Class Meeting Days: F

Class Meeting Time: 09:00AM - 11:50AM

Class Meeting Location: CROL A210

Modality: P

Credit Hours: 1.00

Instructor Information

Name: Ivan Divliansky

Title: Associate Research Professor

Office Location: A121

Office Hours

Monday 11-12

Email: ibd1@creol.ucf.edu

Course Description

OSE 3052L OPTIC-OPTICS 1(0,3)Foundations of Photonics Laboratory: The laboratory experiments covering fundamental photonics principles related to light sources, dispersion of light, interference and diffraction of light, and other optical phenomena.

Objective:

The objective of this lab to become familiar with the fundamental properties of light, explore optical phenomena in a laboratory setting, make careful measurements, and draw own conclusions about the models and theories that describe these phenomena.

Description:

The laboratory course is designed to reinforce the concepts discussed in class with a hands-on approach and to allow the students to learn laboratory techniques for observing optical phenomena and quantitative experimental characterization in geometrical optics, polarization, interference, and diffraction.

Student Learning Outcomes

After successful completion of this course, students will be able to

- Comment on basic concepts and principles of geometrical optics, dispersion, aberration, polarization, interference, and diffraction

- Discuss the nature of light, its propagation, polarization and reflection and refraction at planar interfaces
- Describe basic optical phenomena and their applications
- Handle and align optical elements and set up basic optical experiments
- Operates optical devices and equipment
- Present their observations and conclusions in a clear informative document

Outcomes :

Graduates have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Measure 6.1:

A passing student must be able to analyze, interpret, and use engineering judgement to draw conclusions from a directed experiment that includes the collection of data.

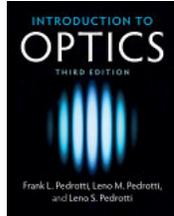
Assessment item: One experiment from lab workbook near the end of the semester that incorporates data/experimental analysis that connects with applications of optical engineering.

Measure 6.2

A passing student must be able to develop and conduct appropriate experimentation to characterize the properties of an optical or photonic component or system.

Assessment item: Instructor provided problem to solve experimentally.

Required Course Materials and Resources



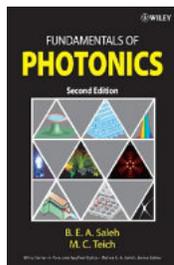
Introduction to Optics

ISBN: 9781108563321

Authors: Frank L. Pedrotti, Leno M. Pedrotti, Leno S. Pedrotti

Publisher: Cambridge University Press

Publication Date: 2017-12-21



Fundamentals of Photonics

Authors: Bahaa E. A. Saleh, Malvin Carl Teich

Publisher: Wiley-Interscience

Publication Date: 2007-03-09

Course Assessment and Grading Procedure

The student is expected to review the textbooks, notes, and the lab handout and come to lab prepared to perform the scheduled experiment.

A pre-lab quiz (closed book) will be done before the beginning of every lab.

A laboratory notebook must be used to properly document all experimental procedures, observations, data, and measurements during the laboratory session. All entries must be in ink. Lab notebooks will be graded using the guidelines described below.

Grading policy:**The final grade will be based upon:**

Pre-lab quizzes - 10%

Laboratory notebooks - 50%

Laboratory report draft - 5%

Formal laboratory report - 20%

Design project - 15%

- Lab notebooks will be handed out to you on the first day of the course and collected every week after the experiments are completed. They will be returned few days later.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Labnote #1	Assignment	100
	Labnote#2	Assignment	100
	Labnote#4	Assignment	100
	Labnote#5	Assignment	100
	Labnotebook#3	Assignment	100
	Quiz 1	Assignment	100
	quiz 2	Assignment	100
	Quiz 3	Assignment	100
	Quiz 4	Assignment	100
	Roll Call Attendance	Assignment	100

Grading Scale

Letter Grade	Percentage
A	94-100%
A-	90-93%
B+	87-89%
B	84-86%
B-	80-83%
C+	77-79%
C	74-76%
C-	70-73%
D+	67-69%
D	64-66%
D-	61-63%
F	0-60%

Policies for Course Grade

Absences and Makeup Lab Sessions:

If an emergency arises and a student cannot attend the lab session or cannot take an exam on the scheduled date, the student must give notification to the instructor no less than 24 hours before the scheduled date and no more than 48 hours after the scheduled date. Per university policy, students must be allowed to turn in make-up work (or an equivalent, alternate assignment) for university-sponsored events, religious observances, or legal obligations (such as jury duty). In these instances, students must also be excused from class without penalty. The Undergraduate Catalog states, "Reasons for acceptable absences may include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligations, severe weather conditions, and religious holidays."

Because of the fluid nature of the lab with the experimental setup changing every week, there will be **ONLY ONE MAKEUP ALLOWED except in cases of genuine emergency.**

It is expected and encouraged that students finish their experiments within the assigned class time. However, with prior arrangements with the teaching assistant, students may be allowed to access the lab before and after the class time of the same week.

Formal laboratory report grading

In any field of science and engineering, once a significant amount of experimental work has been performed, the results of the work should be written up formally. Among other things, this could be in the form of a written report to you supervisors, or to a funding agency, or could be the results of new research that are submitted to a research journal for publication.

It is a requirement of this laboratory course that you take one of your assigned labs and write this up in the format and the style of a journal publication. You may choose freely which laboratory to write about. You will use your own data and you may not write the paper together with your lab partners.

Follow the example papers that are uploaded to Canvas.

The report should contain the following sections:

- Abstract
- Introduction
- Experimental methods
- Results
- Discussion of results
- Conclusions and recommendations for future experimental work.
- References.

The Final paper has to be submitted by the due date specified in the syllabus or earlier. If the paper is submitted later than the due date, 10 points will be taken from the paper grade for every day after the deadline.

The papers should be submitted via Canvas.

The instructor reserves the right to change or modify any portion of this schedule without prior notice or recourse by the students.

Artificial Intelligence (AI) Use Policy

- **Use of Generative Artificial Intelligence (GenAI) is prohibited.** Use of GenAI tools via website, app, or any other access, is not permitted in this class. All components of assignments in this course must be independently and originally completed by the student. Representing work created by GenAI as your own will be treated as plagiarism.

Disability Access & Accommodations

The University of Central Florida is committed to providing equal access to all students with disabilities (ADHD, learning disabilities, Autism, chronic medical conditions, physical disabilities, etc.). To receive consideration for reasonable disability-related course accommodations, disabled students must contact Student Accessibility Services (SAS) and complete the steps required for SAS to review accommodation requests. More information can be found on the UCF [Student Accessibility Services](#) website under the Start Here tab or by contacting SAS directly (Ferrell Commons 185; sas@ucf.edu; Phone - 407-823-2371).

Approved accommodations are shared with course instructors via the SAS Course Accessibility Letter. Implementing certain accommodations may require discussion about specific considerations of the course design, course learning objectives, and the individual academic and course challenges experienced by the student. While students with disabilities or chronic health needs are also encouraged to discuss any course concerns with professors in addition to contacting SAS, professors are not required to facilitate disability-related adjustments to the course unless the professor has received a Course Accessibility Letter from SAS that outlines approved accommodations.

Academic Integrity

Students should familiarize themselves with UCF's Code of Conduct at Student Conduct and Integrity Office. According to Section 1, "Academic Misconduct," students are prohibited from engaging in:

1. Academic misconduct is defined as any submitted work or behavior that obstructs the instructor of record's ability to accurately assess the student's understanding or completion of course materials or degree requirements (e.g., assignment, quiz, and/or exam). Examples of academic misconduct include but are not limited to: plagiarism, unauthorized assistance to complete an academic exercise; unauthorized communication with others during an examination, course assessment, or project; falsifying or misrepresenting academic work; providing misleading information to create a personal advantage to complete course/degree requirements; or multiple submission(s) of academic work without permission of the instructor of record.
2. Any student who knowingly helps another violate academic behavior standards is also in violation of the standards.
3. Commercial Use of Academic Material. Selling of course material to another person and/or uploading course material to a third-party vendor without authorization or without the express permission of the University and the instructor of record. Course materials include but are not limited to class notes, the instructor of record's slide deck, tests, quizzes, labs, instruction sheets, homework, study guides, and handouts.
4. Soliciting assistance with academic coursework and/or degree requirements. The solicitation of assistance with an assignment, lab, quiz, test, paper, etc., without authorization of the instructor of record or designee is prohibited. This includes but is not limited to asking for answers to a quiz, trading answers, or offering to pay another to complete an assignment. It is considered Academic Misconduct to solicit assistance with academic coursework and/or degree requirements, even if the solicitation did not yield actual assistance (for example, if there was no response to the solicitation).

Responses to Academic Dishonesty, Plagiarism, or Cheating

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, [The Golden Rule](#). UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies,

and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct and Academic Integrity, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designated on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Title IX

Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at [Let's Be Clear](#) and [UCF Cares](#).

For more information on access and community engagement, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – ONAC – [Office of Nondiscrimination & Accommodations Compliance](#) & askanadvocate@ucf.edu
- Disability Accommodation – Student Accessibility Services – [Student Accessibility Services](#) & sas@ucf.edu
- [Access and Community Engagement](#) (including the Ginsberg Center for Inclusion and Community Engagement, Military and Veteran Student Success, and HSI Initiatives)
- UCF Compliance and Ethics Office – [Compliance, Ethics, and Risk Office](#) & complianceandethics@ucf.edu
- The [Ombuds Office](#) is a safe place to discuss concerns.

Reporting an Incident or Issue

If you believe you have experienced discrimination by any faculty or staff member, contact the Office of Nondiscrimination & Accommodations Compliance via the [ONAC website](#) or at 407-823-1336. You can also choose to report using the UCF Integrity Line either anonymously or as yourself at 1-855-877-6049 or by using the [online form](#). UCF cares about you and takes every report seriously. For more information see the [Reporting an Incident or Issue Webpage](#).

Deployed Active-Duty Military Students

Students who are deployed active-duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make arrangements.

Campus Safety

At UCF's Public Safety and Police, safety is the top priority. Emergencies on campus are rare, but if one should arise, it's important to be familiar with some basic safety and security concepts.

- In an emergency, always dial 911.
- Every UCF Classroom has an Emergency Procedure Guide posted on a wall near the door, which will show you how to respond to a variety of situations. This guide can also be found online [here](#).
- In the event of an active threat, remember **AVOID, DENY, DEFEND**. Choose the best course of action and act immediately. Watch the video [here](#) to learn more.
 - **AVOID**. Pay attention to your surroundings and have an exit plan. Get as much distance and as many barriers between you and the threat as quickly as possible.

- **DENY.** When avoiding is difficult or impossible, deny the threat access to you and your space. Lockdown by creating barriers, turning the lights off and remaining quiet and out of sight. Make sure your phone is silenced, but do not turn it off.
- **DEFEND.** When you are unable to put distance between yourself and the threat, be prepared to protect yourself. Commit to your actions, be aggressive and do not fight fairly. Do whatever it takes to survive.
- For emergencies on campus, UCF will utilize the [UCF Alert](#) system. All UCF students, faculty, and staff are automatically enrolled to receive these email and text alerts, however, it's a good idea to frequently ensure your [contact information is up to date](#).

Financial Aid Accountability

All instructors are required to document students' academic activity at the beginning of each course. In order to document that you began this course, please complete this activity by the end of the first week of classes or as soon as possible after adding the course. Failure to do so may result in a delay in the disbursement of your financial aid.

Class Schedule

1	January 16 th	Light sources and basic practices
2	January 23 th	Brewster angle and total internal reflection
3	January 30 th	Polarization of light
4	February 6 st	Diffraction of light: Diffraction from various apertures
5	February 13 th	Interference I: Young's double-slit experiment
6	February 20 th	Interference II: Michelson interferometer / Dispersion of light
7	February 27 st	Dispersion of light / Interference II: Michelson interferometer
8	March 6 th	Transmission Surface Gratings
9	March 13 th	No class - Formal Report Draft Due
10	March 20 th	Spring Break
11	March 27 st	Reflective Surface Gratings
12	April 3 th	Design Project
13	April 10 th	Make-up lab
14	April 17 th	No lab: Preparation of Final report
15	April 24 th	Formal Report: Final version of formal report due

Course Requirements

The laboratory notebook contains all the experimental directions and spaces for your observations, results, tables, plots, and responses to questions for each laboratory experiment you will conduct this semester. There is also space reserved to enter your informal lab notes. However, you should keep these notes in a neat and organized manner, so that your lab partners, and your lab instructor can easily follow what you have written, and (most importantly) so that you can come back later and read what you did long after you have forgotten the details. – As an engineer, keeping detailed notes that allow you or others to understand and reproduce your work will be a requirement of whatever job you have.

When you turn in your work, you should have answered all questions in a neat and clear manner.

- You should also be sure that your informal notes, experimental setup sketches table and plots are clear.
- Make sure you have taken and reported all required data and presented in in the manner asked for. If you choose to present the data in additional ways then you can do so, but you should state why. Be sure that all your error analysis is complete where appropriate.

- Explicitly answer all questions asked about the data, experimental method, etc.
- Ensure that you fully answered all of the discussion and analysis questions (those that require you to answer questions beyond your actual lab measurements). While your answer should have depth, they should also be concise – do not try to use long sentences to mask a lack of understanding. It is important that your answers are in complete, readable sentences.

You will complete your lab notes in each class session and turn this lab book in for grading at the end of class. There is no other formal report required – just complete the lab notes section for each experiment fully and take good informal notes.

This lab book is also available online so that you can read ahead for future experiments if you wish.

One formal laboratory report (written as a scientific journal paper) will be required as the final examination for this laboratory course. A draft of this report will be due mid-semester. After receiving feedback on this draft, you can complete the report and turn it in by the date of the final examination.