



UNIVERSITY OF
CENTRAL FLORIDA

OSE 4410L - OPTOELECTRONICS LABORATORY

Section: 0011

Optics and Photonics

Course Information

Term: Fall 2025

Class Meeting Days: M

Class Meeting Time: 06:00PM - 08:50PM

Class Meeting Location: CROL A210

Modality: P

Credit Hours: 1.00

Instructor Information

Name: Steven Silverio

Title: Graduate Teaching Assistant

Office Location: CROL 235

Office Hours

By Appointment

Email: steven.silverio@ucf.edu

Course Description

OSE 4410L OPT- 1(0,3)Optoelectronics Laboratory: CR: OSE 4410. Experiments in the basics of semiconductor optoelectronic devices including photodiodes, light-emitting diodes, laser diodes, CCDs. Applications include solar cells, displays, photodetection, and optical communications. Spring.

This lab course is associated with the theory course (OSE 4410) on the principles, design, and applications of optoelectronic devices. Basic specifications of key optoelectronic devices, including photodiodes, Light Emitting Diodes (LEDs), diode lasers, LED and Liquid Crystal Displays are experimentally studied by the students. The experiments include both DC (static) and AC (dynamic) characteristics of the devices and emphasize both the electrical and optical figures of merit. The advantages and disadvantages of various types of photodetectors and light sources are experimentally and quantitatively studied in the lab.

Student Learning Outcomes

Outcome	Measure	Course
<p>6. Graduates have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.</p> <p>Students will have the ability to characterize/troubleshoot/analyze optoelectronic devices. Students are also expected to successfully setup/characterize a functioning optical/audio transmitter.</p>	<p>6.1 A passing student must be able to conduct directed experimentation, collect data, analyze and interpret results.</p>	<p>OSE4410L Optoelectronics Lab</p>

Required Course Materials and Resources

Lab Notes

Optoelectronics and Photonics: Principles and Practices

Authors: S. O. Kasap

Publisher: Prentice Hall
Publication Date: 2001

Recommended Course Materials

Title: Semiconductor Optoelectronic Devices
Authors: P. Bhattacharya
Publisher: Prentice Hall
Publication Date: 1997
Edition: 2nd

Title: Semiconductor Optoelectronic Devices
Authors: J. Piprek
Publisher: Academic Press
Publication Date: 2003

Title: Fundamentals of Photonics
Authors: B. E. A. Saleh and M. C. Teich
Publisher: Wiley
Publication Date: 2007
Edition: 2nd

Course Assessment and Grading Procedure

The course grade will be out a total of 100 points, broken down as follows:

- **Attendance:** 2 points for full attendance of every lab session (10, excluding two session labs). Late arrival 5-20 minutes will result in a 1 point deduction, greater than 20 minutes will result in a 2 point deduction. Total of 20 points.
- **Lab Report:** A short report must be submitted by each student after the end of select labs. The report should contain an summary of experimental procedure, data tables/figures, data analysis, and answers to in-lab questions. **Experimental data can be shared among group members, but the analysis and submission must be your own work.** Each of the 7 labs will be worth 7 points, for a total of 49 points. A rubric will be made available on Webcourse.

- **Lab Paper:** A 2 page paper must be submitted by each student after the end of select two-part labs. The paper should include an abstract, thesis statement, summary of experimental procedure, data tables/figures, data analysis, conclusions and discussion. Experimental data can be shared among group members, but the analysis and submission must be your own work. Each of the 3 papers will be worth 10 points, for a total of 30 points. One bonus point will be available for each paper for exceptional submission.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Attendance	Assignment	20
	Roll Call Attendance	Assignment	100
8/22/25	Chat GPT - Academic Activity	Assignment	1
9/12/25	Lab Report: LED Part 1	Assignment	7
9/19/25	Lab Paper: LED	Assignment	10
9/26/25	Lab Report: LD Part 1	Assignment	7
10/3/25	Lab Paper: LD	Assignment	10
10/10/25	Lab Report: PC	Assignment	7
10/17/25	Lab Paper: PC/PD	Assignment	10
10/24/25	Lab Report: Solar Cell	Assignment	7
10/31/25	Lab Report: Digital Display	Assignment	7
11/14/25	Lab Report: Audio Transmitter/Receiver	Assignment	7
11/26/25	Lab Report: Optical Transmitter/Receiver	Assignment	7

Grading Scale

Grading Scale

Letter Grade	Percentage	
A	90-100%	Excellent, has a strong understanding of all concepts and is able to apply the concepts in all and novel situations. Has full mastery of the content of the course.
B	80-89%	Good, has a strong understanding of most or all of the concepts and is able to apply them to stated and defined situations.
C	70-79%	Average, has a basic understanding of the major concepts of the course and is able to apply to basic situations.
D	60-69%	Below average, has a basic understanding of only the simple concepts and is able to apply to only a limited number of the most basic situations.
F	0-59%	Demonstrates no understanding of the course content.

Policies for Course Grade

Makeup Work Policy

Make-up Lab due to Emergency Reason - If an emergency arises and a student cannot attend a Lab on the scheduled date, the student must notify the instructor no less than 24 hours before the scheduled date and no more than 48 hours after the scheduled date. A make-up lab session will be arranged if official documents regarding the emergency are submitted to the instructor. The instructor will specify a new due date for submitting the report of the make-up lab. The late submission rule of section 4.2 will apply if the student fails to submit the report by the new due date. Any illness will be considered a medical emergency only if a doctor's letter, which confirms the illness, is submitted to the instructor as an official document within the time mentioned in this section. Zero credit will be given for the lab without official documents.

Missed/Late Assignments

Late Submission of Report due to Emergency Reason - If an emergency arises and a student cannot submit assigned work on or before the scheduled due date, the student must notify the instructor no less than 24 hours before the scheduled date and no more than 48 hours after the scheduled date. The instructor will specify a new due date for submitting the report after receiving official documents from the student. The late submission rule of section 4.2 will apply if the student fails to submit the report by the new due date. Any illness will be considered a medical emergency only if a doctor's letter, which confirms the illness, is submitted to the instructor as an official document within the time mentioned in this section. Zero credit will be given for the lab without official documents.

Late Assignment submissions which occur without an emergency reason will be deducted according to the following guidelines:

- 1 point deduction for submission after the deadline, but BEFORE the next lab period, in addition to deductions from regular grading.
- 2 point deduction for submission after the deadline, and AFTER the following lab period, in addition to deductions from regular grading.

Submissions more than 1 week late will receive a grade of 0.

Attendance/Late Arrival/Financial Aid Attendance

Attendance - Attendance is mandatory in all lab classes. In case of absence in a lab for no emergency reason, zero credit will be given for that lab. See **Make Up Policy** for absence due to an emergency reason

Late Arrival - A student showing up 5-20 minutes late will be deducted 1 point from the day's attendance score. A student showing up greater than 20 minutes late will receive no credit for the day's attendance score, but may still complete the lab.

Financial Aid and Attendance - As of Fall 2014, all faculty members are required to document students' academic activity at the beginning of each course. In order to document that you began this course, please complete the following academic activity by the end of the first week of classes, or as soon as possible after adding the course, but

no later than **August 22, 2025**. Failure to do so will result in a delay in the disbursement of your financial aid

Deadlines, Holidays, and Significant Semester Events

First Day of Classes	08/18/2025
Last Day to Drop/Swap Classes	08/22/2025
Labor Day (No Lab)	09/01/2025
Final Exam Week	12/01/2025 - 12/06/2025

Link to Fall 2025 Academic Calendar: <https://calendar.ucf.edu/2025/fall>

Class Schedule

Week	Topic	Date	Assig
0	RC Circuit	08/18	08/22: Ac
1	LED Part 1	08/25	
2	Labor Day (NO LAB)	09/01	sskdavskdl
3	LED Part 2	09/08	09/12: LE
4	LD Part 1	09/15	09/19
5	LD Part 2	09/22	09/26: LI
6	PC/PD Part 1	09/29	10/03
7	PC/PD Part 2	10/06	10/10
8	Solar Cell	10/13	10/17:
9	Digital Display	10/20	10/24: Sc
10	Audio Transmitter/Receiver	10/27	10/31: I
11	Audio Transmitter/Receiver	11/03	
12	Optical Transmitter/Receiver	11/10	11/14: Au
13	Optical Transmitter/Receiver	11/17	
14	Makeup Lab / Extra Credit	11/24	11/26

Lab Safety

- Do not look at any laser beam or even the LED light directly.
- Do not be in the path of any laser beam or even the LED light.
- Wear safety goggles. The goggles should be suitable for the power and wavelength of the light that you will use in your experiment.

Syllabus Disclaimer

The instructor reserves the right to modify this syllabus in any way throughout the semester. All changes will be made effective one week after they are disclosed to the class. The instructor reserves the right to change the exams dates. Students will be given one week notice.

Unauthorized Distribution of Class Notes

Third parties may attempt to connect with you to sell your notes and other course information from this class. Distributing course materials to a third party without the my authorization is a violation of our University's Rules of Conduct. Please be aware that such class materials that may have already been given to such third parties may contain errors, which could affect your performance or grade.

Recommendations for success in this course include coming to class on a routine basis, visiting me during my office hours and making use of the Student Academic Resource Center (SARC), the University Writing Center (UWC), the Math Lab, etc. If a third party should contact you regarding such an offer, I would appreciate your bringing this to my attention. We all play a part in creating a course climate of integrity

In-Class Recording

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach enrolled students about a particular subject.

Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, private conversations between students in the class or between a student and the faculty member, and invited guest speakers is prohibited.

Recordings may not be used as a substitute for class participation and class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct as described in the Golden Rule.

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 assignment, 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" designation 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](mailto:complianceandethics@ucf.edu) & 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 cell 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/faculty 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.