



UNIVERSITY OF
CENTRAL FLORIDA

OSE 4951 - SENIOR DESIGN I

Section: 0011

Optics and Photonics

Course Information

Term: Fall 2024

Class Meeting Days: R

Class Meeting Time: 15:00 - 15:50

Class Meeting Location: HEC 0110

Modality: P

Credit Hours: 3.00

Combined Section Information

This syllabus applies to sections OSE OSE 4951 0011, OSE 4953 0001.

OSE4951_CMB-24Fall 00241

Instructor Information

Aravinda Kar

Title: Professor

Office Location: CREOL 284

Office Hours:

By appointment

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Course Description

OSE 4951 OPTIC 3(3,0)Senior Design I: PR: OSE 3200, OSE 3053, OSE 4410, EEL 3307C, and C (2.0 GPA) or higher in OSE 3052. Department Consent. PR/CR: OSE 4520 and OSE 4470 Development of the technical, communication, and team skills for successful design of optical and photonic systems. Preparation of project proposals for Senior Design II. Fall, Spring

Student Learning Outcomes

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

- Identify specific goals of the designed system, including specifications and realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints,
- Collect information on available components and standards related to design needs,
- Develop appropriate models and using computer tools for system analysis,
- Perform testing and failure analysis,
- Prepare written proposals and deliver technical information through oral presentations, reports and logbooks,
- Work in a team environment,

- Recognize and address ethical issues related to design and engineering,

- Develop a customer relationship and mentality.

Course Materials and Resources

DESIGN FOR ELECTRICAL AND COMPUTER ENGINEERS, McGrawHill (Ch. 3)

Recommended Course Materials

Title: 2. SENIOR DESIGN FOR ELECTRICAL AND COMPUTER ENGINEERINGS STUDENTS, Pearson Custom Publishing (3 chapters)

Course Assessment and Grading Procedure

The final grade will be primarily based on the final project documentation and the prototyping and testing of critical project elements. However, the overall course grade may be modified by attendance and by performance in other elements that are turned in for grading, including the initial project idea, initial project documentation, several draft reports, and quizzes given on the course material. These elements are treated as content in which the students must demonstrate mastery of the material. No grades are assigned, only indications of completion are recorded. If a student fails to demonstrate competency on an assignment, the assignment must be repeated until mastered. All required elements of the course must be mastered to receive a passing final grade. All course elements are evaluated by the course instructor. All team members are usually awarded the same grade, however under certain circumstances team members may receive different grades. In cases where group members do not adequately contribute to the project, members may be dropped from the group and those students will receive an F grade for the course.

[EEL 4914 & EEL 4915L Grading Rubric](#) will also be followed for the assessment of final grades.

Assignment Schedule

| Due Date | Assignment Name | Assignment Type | Points |
|----------|---|-----------------|--------|
| | Design Constraints | Discussion | 0 |
| | Feedback on Website establish | Quiz | 0 |
| | Final Grade (Based on performance in OSE4951 & EEL4914) | Assignment | 100 |
| | Final Report Guidelines for SD1 and SD2 | Discussion | 0 |
| 8/23 | Academic Activity Verification | Assignment | 0 |

Grading Scale

| Letter Grade | Percentage |
|--------------|---------------|
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | 59% and below |

Policies for Course Grade

Makeup Work Policy

Make-ups for assignments are only allowed for special or genuine extenuating circumstances. Per university policy, students must be allowed to turn in make-up work for university-sponsored events, religious observances, or legal obligations such as jury duty. For all other circumstances, the instructor has the final authority to decide whether a make-up is allowed.

Missed/Late Assignments

Missed/Late assignments will lead to letter grade deductions. Details are described in [EEL 4914 & EEL 4915L Grading Rubric](#).

Attendance

Attendance in classes, bootcamp, and group meetings are all required. A missed attendance with a valid reason can be given an override.

Course Accessibility

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with [Student Accessibility Services \(SAS\)](#) (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs

faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

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:

- a. 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 the 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.
- b. Any student who knowingly helps another violate academic behavior standards is also in violation of the standards.
- c. 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 written 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.
- d. 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.

Reporting an Incident or Issue

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

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 diversity and inclusion, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – OIE – [Office of Institutional Equity](#) & 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.

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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 related arrangements.

Campus Safety

At UCF 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.

Class Schedule

| Week | Topic |
|-------------|---|
| 1 | Introduction |
| 2 | Engineering Design Process |
| 3 | Goals, Objectives, Specifications and Requirements |
| 4 | Realistic Design Constraints |
| 5 | Standards Based Design Practices |
| 6 | History of Engineering Education |
| 7 | Engineering Profession |
| 8 | Engineering Management |
| 9 | Engineering Research and Development |
| 10 | Intellectual Property Protection |
| 11 | Engineering Economics |
| 12 | Engineering Ethics |
| 13 | Engineering Documentation and Technical Presentations |
| 14 | |
| 15 | |
| 16 | |
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