CREOL OSE4830L course - Imaging and Display Laboratory
College of Optics and Photonics, Fall 2025
University of Central Florida

COURSE SYLLABUS

Instructor:	Dr. Konstantin Vodopyanov	Term:	Fall 2025
Office:	CREOL Room A113	Class Days:	Thursdays
Phone:	407 823 6818	Class Hours:	10:30 - 13:20
E-Mail:	vodopyanov@creol.ucf.edu	Class Location:	Room A210
Website:	https://www.creol.ucf.edu/mir/		
Office Hours:	Arrange by email	TA: Woraprach Kusolthossakul	

I. Welcome!

Welcome to CREOL OSE4830L course - Imaging and Display Laboratory

II. University Course Catalog Description:

The goal of this course is to provide the hands on experience on image acquisition, processing and analysis. The performance of various imaging, spectroscopic, and display systems will be studied and simulated using MatLab image processing toolbox. This course complements the theory course on Imaging and Display OSE4830.

III. Course Overview:

The course consists of a sequence of **seven experiments** preceded by an introductory class on MatLab. In laboratory sessions, students will learn practical aspects of optics experiment. After the first (introductory) class, experimental sessions will be held once every two weeks in 2 hour and 50 minutes sessions. The second week after each Lab session will be dedicated to data processing and report writing. Total there will be seven graded reports.

IV. Course Prerequisites:

OSE4830 Imaging and Display theory course (runs in parallel to our lab course).

V. Course Credits: 1

VI. Reference Textbooks:

- J. W. Goodman, *Introduction to Fourier Optics*, 3rd Edition, Roberts & Co, 2004

- B. Saleh, *Introduction to Subsurface Imaging*, Cambridge University Press, 2011
- D. K. Yang and S. T. Wu, *Fundamentals of Liquid Crystal Devices*, 2nd Edition, Wiley, 2014

These textbooks are optional. The Lab Notes for the course will be placed on *Webcourses* and will be self-sufficient.

VII. Basis for the Final Grade:

Assessment	Percent of Final Grade
Lab Reports (total 7)	100%

Grading scale:

Grading Scale (%)	
94-100	A
90-93	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
0 - 59	F

VIII. Lab Reports

Lab reports should be submitted as *pdf or word* files no later than **7 days after** the Lab work is done. For example, if the Lab Work No. 1 is done on Thursday Sept. 4, a report will be due on Thursday Sept. 11, etc.

Typically, a team of two students will be assigned for each experiment, however **each student should write his/her own report** (the data may be shared, but not the data analysis and report). The grades will be substantially reduced if one student copies report from another.

Late submission will result in a 10% deduction per day.

IX. Grade Dissemination

You can access your scores using UCF *Webcourses*.

X. Course Policies: Grades

Late Work Policy: As a rule, make-up sessions for laboratory work are not offered. In exceptional cases (e.g., illness or other serious circumstances), a student may arrange with the TA to complete the missed experiment during the scheduled time of another lab group.

Grades of "Incomplete":
The university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where *unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester*. Instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

XI. Course Policies: Technology and Media

Email: Please use the email: *vodopyanov@creol.ucf.edu* for all correspondence.

Website: All course information (Lab Notes) will be posted on *Webcourses*. This site will reflect latest changes and contain assignments for the coming lab work.

XII. Course Policies: Student Expectations

Disability Access: The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the professor to request accommodations. Students who need accommodations must be registered with Student Disability Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Attendance Policy: Students must be on time to class. If missed a class (for a good cause), it is the responsibility of the student to arrange with a TA an extra time for doing experiment. One extra session at the end of the semester will be allocated in case students want to redo a certain experiment to get a better grade.

Professionalism Policy: Per university policy and classroom etiquette: mobile phones etc. **must be silenced** during all classroom lectures. Students who habitually disturb the class by talking, arriving late, *etc*., and have been warned may suffer a reduction in their final class grade.

Academic Conduct Policy: ***Academic dishonesty in any form will not be tolerated.*** As in all University courses, The Golden Rule of Conduct will be applied. Violations of these rules will result in a record of the infraction being placed in your file and receiving a zero on the work in question AT A MINIMUM. At the instructor's discretion, you may also receive a failing grade for the course. Confirmation of such incidents can also result in expulsion from the University.

XIII. Important Dates to Remember

Drop/Swap Deadline: Friday, August 22, 2025 11:59 PM

XIV. Schedule, Fall 2025

GROUP 1A

1	21-Aug	Introduction and course logistics. Good practices of optics experiment. Getting acquainted with MatLab Image Processing tools.
3	28-Aug	No class, practice Matlab tools.
2	4-Sept	Lab. Work 1: Optical Image Resolution and Contrast
3	11-Sept	Writing report for Lab 1
4	18-Sept	Lab. Work 2: Fourier Optics and the 4f System
5	25-Sept	Writing report for Lab 2
6	2-Oct	Lab. Work 3: Fourier Transform and Diffraction Properties of Light
7	9-Oct	Writing report for Lab 3
8	16-Oct	Lab. Work 4: Speckle Interferometry
9	23-Oct	Writing report for Lab 4
10	30-Oct	Lab. Work 5: Michelson Interferometer
11	6-Nov	Writing report for Lab 5
12	13-Nov	Lab. Work 6: Spectroscopy and hyperspectral imaging
13	20-Nov	Writing report for Lab 6
13	27-Nov	THANKSGIVING no class
13	4-Dec	Lab. Work 7: Liquid crystal display
13	8-Dec	Writing report for Lab 7
	10-Dec	**Final Grades**

GROUP 1B

1	21-Aug	No class
3	28-Aug	Introduction and course logistics. Good practices of optics experiment. Getting acquainted with MatLab Image Processing tools.
2	4-Sept	No class, practice Matlab tools.
3	11-Sept	Lab. Work 1: Optical Image Resolution and Contrast
4	18-Sept	Writing report for Lab 1
5	25-Sept	Lab. Work 2: Fourier Optics and the 4f System
6	2-Oct	Writing report for Lab 2
7	9-Oct	Lab. Work 3: Fourier Transform and Diffraction Properties of Light
8	16-Oct	Writing report for Lab 3
9	23-Oct	Lab. Work 4: Speckle Interferometry
10	30-Oct	Writing report for Lab 4
11	6-Nov	Lab. Work 5: Michelson Interferometer
12	13-Nov	Writing report for Lab 5
13	20-Nov	Lab. Work 6: Spectroscopy and hyperspectral imaging
13	27-Nov	THANKSGIVING no class
13	1-Dec	Writing report for Lab 6
13	4-Dec	Lab. Work 7: Liquid crystal display
14	8-Dec	Writing report for Lab 7
	10-Dec	**Final Grades**