



**CREOL OSE4830L course - Imaging and Display Laboratory**  
**College of Optics and Photonics, Fall 2018**  
**University of Central Florida**

**COURSE SYLLABUS**

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Instructor:	Dr. Konstantin Vodopyanov	Term:	Fall 2018
Office:	CREOL Room A113	Class Days:	Wednesdays
Phone:	407 823 6818	Class Hours:	1:30 - 4:20 pm 4:30 - 7:20 pm
E-Mail:	<a href="mailto:vodopyanov@creol.ucf.edu">vodopyanov@creol.ucf.edu</a>	Class Location:	Room A210
Website:	<a href="http://www.creol.ucf.edu/People/Details.aspx?PeopleID=9927">http://www.creol.ucf.edu/People/Details.aspx?PeopleID=9927</a>		
Office Hours:	Fridays 5-6 pm	TA: Taiki Kawamori	

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**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 will complement the theory course on Imaging and Display OSE4830.

**III. Course Overview:**

The course consists of a sequence of seven interconnecting experiments (preceded by an introductory class on how to use MatLab tools) with a variety of optical systems. In laboratory sessions, students will learn practical aspects of optics experiment. Participation is capped at 12 students, because of equipment and space limitations. After the first class, (21-Aug) experimental sessions will be held once every two weeks (starting 28-Aug) in 2 hour and 50 minutes sessions. The second week after each Lab session will be dedicated to report writing. Total there will be 7 experiments.

#### IV. Course Prerequisites:

OSE4830 Imaging and Display. This lecture course will run in parallel with our course.

#### V. Course Credits:

1

#### VI. Reference Textbooks:

Lab. Notes will be sufficient. They will be distributed few days prior to the start of the corresponding Lab work. However, these books might be useful:

- 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

#### VII. Basis for Final Grade:

Assessment	Percent of Final Grade
Lab Reports	100%
	100%

#### Grading scale:

Grading Scale (%)	
90-100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

#### VIII. Lab Reports

Lab reports should be submitted as *pdf* files no later than 11:59 pm on Sunday of the 2-nd week for each experiment (that is the day preceding the next Lab work). There will be a reduction in the grade of 10% per day for late submissions. A team of two students will be assigned for each experiment, however each student writes his/her own report (data may be shared).

#### IX. Grade Dissemination

You can access your scores using UCF *Webcourse*.

#### X. Course Policies: Grades

**Late Work Policy:** As a rule, there are no make-ups for the laboratory work. The lab work needs to be done only during allocated hours.

#### Grades of "Incomplete":

The current 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 information concerning the course will be posted at *Webcourse*. 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 week (at the end of semester) will be allocated in case students want to redo any experiment if they want to get a better grade.

### **Professionalism Policy:**

Per university policy and classroom etiquette: mobile phones etc. **must be silenced** during all classroom lectures. Those not heeding this rule will be asked to leave the classroom immediately so as to not disrupt the learning environment. 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:            Thursday, Aug 23, 2018

## XIV. Schedule

1	22-Aug	Lab. Work 1: Introduction and course logistics. Good practices of optics experiment. Getting acquainted with MatLab Image Processing tools.
2	29-Aug	<i>Writing report for Lab 1</i>
3	5-Sept	Lab. Work 2: Optical Image Resolution and Contrast

4	12-Sept	<i>Writing report for Lab 2</i>
5	19-Sept	Lab. Work 3: Fourier Optics and the 4f System
5	26-Sept	<i>Writing report for Lab 3</i>
6	3-Oct	Lab. Work 4: Fourier Transform and Diffraction Properties of Light
8	10-Oct	<i>Writing report for Lab 4</i>
9	17-Oct	Lab. Work 5: Michelson Interferometer
10	24-Oct	<i>Writing report for Lab 5</i>
11	31-Oct	Lab. Work 6: Speckle Interferometry
12	7-Nov	<i>Writing report for Lab 6</i>
13	14-Nov	Lab. Work 7: Spectroscopy and hyperspectral imaging
14	21-Nov	<i>Writing report for Lab 7</i>
15	28-Nov	Lab. Work 8: Liquid crystal display
16	3-Dec	<i>Writing report for Lab 8</i>
	7-Dec	Lab 8 Report deadline
	10-Dec	Final Grades