SYLLABUS

OSE 4830L - Imaging and Display Laboratory
CREOL, The College of Optics and Photonics
University of Central Florida
Fall 2019

Instructor:	Dr. Aravinda Kar	Term:	Fall 2019
Office:	CREOL Room 284	Class Location:	Room A210
Phone:	(407) 823-6921	Class Days and Hours:	Tuesdays 8:30 AM - 11:20 AM 3:00 PM – 5:50 PM
E-Mail:	akar@creol.ucf.edu	Office Hours:	Tuesdays 1-2 pm
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1) Important Dates to Remember

Academic Activity Confirmation: Monday, August 26, 2019 - Friday, August 30, 2019
Drop/Swap Deadline: Thursday, August 29, 2019

2) 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 lecture course on Imaging and Display OSE4830.

3) 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.

4) Course Prerequisites

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

5) Course Credit hour: 1

6) 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

7) Basis for Final Grade:
The final grade is based on a scale of 0 to 100 points for 7 experiments with corresponding 7 lab reports. Each lab is for 16 points except Lab #4 which is for 20 points.

Grading scale: The letter grades are given at the end of the semester based on the scale in the following table.

Grading Scale		
100 - 90 (A)	<90 – 86 (A-)	
<86 – 82 (B+)	<82 – 78 (B)	<78 – 74 (B-)
<74 – 70 (C+)	<70 – 66 (C)	<66 – 62 (C-)
<62 – 58 (D+)	<58 – 54 (D)	<54 – 50 (D-)
<50 (F)		

8) Lab Reports:
Each student must write a report for each lab and submit the report as a pdf file via the webcourses of this class by 11:59 pm by the due date (see the lab schedule at the end of this document for due dates). 1 point will be deducted per day for late submission of a report. If the report is submitted N days late and the report receives a score of S points out of the total points assigned to the report, the final score for the report will be S-N. A fraction of a day will be counted as 1 day for determining N. A team of students will be assigned for each experiment, however, each student must write his/her own report for which the data can be shared among each team members.

9) Grade Dissemination:
The scores will be posted in UCF's Webcourses.

10) Course Policies - Grades

Late Work Policy: As a rule, there is no make-up lab class. The lab work needs to be done only during allocated hours.

Score/Grade Objection: An objection to a score/grade should be made in writing within one week after the score/grade is posted in UCF's webcourses. Any objection made after this period has elapsed will not be considered – NO EXCEPTIONS.

Incomplete Grade: 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 in the next semester. The instructor is the final authority to decide whether you qualify for an incomplete grade. Incomplete work must be completed by the end of the subsequent semester when the lab class is offered, otherwise the "I" grade will automatically be recorded as an "F" on your transcript.

11) Course Policies - Technology and Media

Email: Please use the email of the instructor for all correspondence.

Website: All information concerning the course will be posted on UCF's Webcourses. This site will reflect latest changes and contain assignments for this lab course.

12) 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 a student misses a class for an emergency, for example, illness or accident, the student must contact the instructor within 24 hours of the emergency to arrange for a make-up class. An official document must be submitted to the instructor about the emergency.

Professionalism Policy: Per university policy and classroom etiquette, mobile phones etc. must be silenced during the class. 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 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.

13) Lab schedule

Date	Lab number	Topic	Point
8/27	0	Introduction and course logistics. Getting acquainted with MatLab Image Processing tools.	
9/3 9/10	1	Optical Image Resolution and Contrast Write and submit report for Lab 1	16
9/17 9/24	2	Fourier Optics and the $4f$ System Write and submit report for Lab 2	16
10/1 10/8	3	Fourier Transform and Diffraction Properties of Light Write and submit report for Lab 3	16
10/15 10/22	4	Michelson Interferometer Teams 1-3 will do Lab 4 Teams 4-6 will do Lab 5 Write and submit report for Lab 4 or 5	20
10/29 11/5	5	Speckle Interferometry Teams 1-3 will do Lab 5 Teams 4-6 will do Lab 4 Write and submit report for Lab 4 or 5	16
11/12 11/19	6	Spectroscopy and hyperspectral imaging Teams 1-3 will do Lab 6 Teams 4-6 will do Lab 7 Write and submit report for Lab 6 or 7	16
11/26 12/3	7	Liquid crystal display Teams 1-3 will do Lab 7 Teams 4-6 will do Lab 6 Write and submit report for Lab 6 or 7	16
12/4	Last day of UCF classes		
12/5-12/11	UCF's final examination period		