

OSE 6455 Photonics Laboratory – Fall 2017

Pre-requisites: Graduate Standing, OSE 6349 Quantum Mechanics or PHY 5606 Physics Quantum Mechanics, OSE 6111 Optical Wave Propagation or PHY 5346 Electrodynamics I or OSE 6525 Laser Engineering

Time: 1-5 PM, Fridays
Room: CREOL 265
Instructor: Xiaoming Yu (CREOL 273)
TA: Ning Wang (CREOL 234)
Office Hour: Wednesdays, 4-5 PM, or by appointment

Goals:

1. Relate what you have learnt in classroom to what you can see in the lab of a variety topics related to photonics.
2. Take away the “fear factor” by providing experience of operating various equipment.
3. Establish good practices in experimentation including keeping a lab notebook and keeping the experiment station clean.
4. Learn to write lab reports of journal-manuscript quality/style.

Schedule:

8/25	Introduction and Lecture
9/1	LabView
9/8	Beam Propagation
9/15	Waveguides
9/22	AO
9/29	Lecture
10/6	E-O, LCD, Fiber sensor, LD
10/13	E-O, LCD, Fiber sensor, LD
10/20	E-O, LCD, Fiber sensor, LD
10/27	E-O, LCD, Fiber sensor, LD
11/3	Lecture
11/10	Fiber-Optic Communications
11/17	WDM (Wavelength-Division Multiplexing)
12/1	VPI-Simulation of Systems

Grading Policy:

Attendance	7%
Pre-Lab	9%
Lab Notebook	7%
3 Full Lab Reports	42%
1 Full Lab Report (Practice)	7%
7 Short Lab Reports	28%

A: >95

A-: 90-94

B+: 85-89

B: 80-84

Reference Books:

- Fundamentals of Photonics by B. E. A. Saleh and M. C. Teich, Wiley, 1991
- Optical Electronics in Modern Communications by A. Yariv, Oxford, 5th Edition, 1997