

ECSE 4964, Spring 2011
Optoelectronic Technology
NSF Smart Lighting Engineering Research Center
Tuesday, Friday 10:00 am – 11:20 am
JONSSN 4104

Professor: Z. Rena Huang
Phone: 518-276-6086
Email: zrhuang@ecse.rpi.edu
Office: CII 6207
Office hours: Thursday 2-4pm, or by appointment
Homepage: <http://www.ecse.rpi.edu/~huang/>

TA: TBD

Textbook:

Optoelectronics and Principles and Practices, S.O. Kasap, Prentice Hall 2001
Class notes

Course prerequisites:

ECSE 2210 Microelectronics
PHYS 2620 Fundamentals of Optics or equivalent

Course Objective:

This course serves as an introduction course to optical physics and optoelectronic devices. Topics cover including Nature of light; Operating principles, basic designs and applications of optoelectronic devices such as Light Emitting Diodes, Laser Diodes, Photodetectors and Solar Cells; Electro-optic, Acousto-optic and Non-linear optic based optical components such as Optical Modulators, Switches, Couplers; Optical Waveguides and Fibers; and Integrated Optic and Fiber Optic Systems.

Grade Composition:

Quiz 1: 30%
Quiz 2: 30%
Final exam: 30%
Homework: 10%

Suggested Additional Reading

1. Fundamentals of Photonics, 2nd Edition, B.E.A. Saleh and M.C. Teich, John Wiley and Sons (2007), ISBN: 0-471-83965-5
2. Introduction to Solid State Lighting, A. Zukauskas, M. Shur and R. Gaska, John Wiley and sons, Inc.(2002), ISBN: 0-471-21574-0
3. Light Emitting Diodes, 2nd Edition, E. Fred Schubert, Cambridge University Press (2007), ISBN: 978-0-521-86538-8