

ECSE/PHYS 4630, Spring 2008
Lasers and Optical Systems
TF, 10:00 am – 12:00pm
JEC 4107

Professor: Z. Rena Huang

Phone: 518-276-6086

Email: zrhuan@ecse.rpi.edu

Office: CII 6207

Office hours: Tuesday, Friday 1-2pm, or by appointment

Homepage: <http://www.ecse.rpi.edu/~huang/>

TA:

Textbook:

Optics, Miles Klein, Thomas E. Furtak, Wiley & Sons, Inc., 2nd ed. 1985

Class handout

Course prerequisites:

PHYS-2620 Fundamentals of Optics (recommend)

Course Objective:

This course introduces the fundamental concepts of geometric and wave optics that are build upon Huyen's principle, Maxwell's equation, and classical theory of wave and matter interaction. The class covers the topics of transmission and reflection of optical waves at dielectric interface, propagation attenuation, optical waveguide, complex refractive index, tow beam and multiple beam interference, far field and near field diffraction, fundamentals of Fourier optics, Gaussian beam property and polarization. This class is designed for senior undergraduate students in electrical engineering and physics, or first year graduate students who have interests in further develop their understanding or carry on research in photonics, optical engineering or optoelectronics.

Grade Composition and Tentative Test Dates:

Quiz 1: 25%

Quiz 2: 25%

Homework: 10%

Laboratory: 5%

Final exam: 35%