PHYS 428 Photonics and Laboratory
4 credits (3 hours lecture and 4 hours lab)

A course providing a theoretical principles and practical training of selected subjects of optics.

Textbook: Introduction to Optics (3rd Edition) by Frank L Pedrotti and Leno M Pedrotti

Course Contents

Lectures:

- Production and measurement of light
- Wave equation
- Superposition of waves
- Interference of light
- Interferometry
- Coherence
- Polarization of light
- Coherence
- Fourier transform
- Diffraction
- Lasers
- Waveguide and fiber optics
- Semiconductor optoelectronics

Experiments:

- Photo Cell
- Photodiode
- Reflection
- Polarization
- Newton's ring
- Fabry-Perot interferometer
- Michelson Interferometer
- Diode laser
- Grating spectrometer
- Lens resolution
- Fiber optics

Method of Evaluation

Reports and assignments	40 %
Quizzes	10 %
Two Midterm Exams	30 %
Final Exam	20 %