

UNIVERSITY OF MASSACHUSETTS LOWELL

OPTOELECTRONICS (ECE 16.669)

Fall, 2012

Instructor: Prof. Xuejun Lu

Office: BL413

Email: Xuejun_Lu@uml.edu

Course Website: <http://faculty.uml.edu/xlu/16.669>

Office Hours: MWF 1– 2:00pm

Text: Optoelectronics and Photonic, Principles and Practices by S. O. Kasap, Prentice Hall, 2001.

Course contents:

- Review of quantum mechanics, and solid state electronics
- Optical process in semiconductors
- Pn junction principles and band diagrams.
- Light emitting diode (LED): principle, device structure, and materials.
- Heterojunctions.
- Principle of diode Laser: Heterojunction lasers; Quantum Well Lasers.
- Semiconductor optical amplifiers.
- Photodetectors.
- Photovoltaic devices and solar cells
- Polarization and Electro-optical modulators

Grading Policy:

- One in class Exams: 30%
- Home work: 15%
- Project: 15%
- Final (take home): 40%

Course Policy:

- Cheating will not be tolerated!
- You must attend all exams. Failure to attend will result in a grade of “F”. The only exception is medical emergency.
- Make sure to check the class website for updates!
- No late homework accepted. It is the student’s responsibility to check the homework solutions posted on the class website and understand the solutions.