

ECE 493/693

Optoelectronics and Photonics

Fall 2021

15:30 – 16:45 Tuesday, Thursday

Instructor – Lin Zhu

Office – 201 Riggs

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Office Hours – by appointment

Exam Time – TBD

Required Materials –

- *Text book: Optoelectronics and Photonics by S. O. Kasap, Second Edition*
- *Access to Laptop or Desktop Computer*
- *Lecture notes*

Optional: Fundamentals of Photonics, second Ed., Saleh and Teich, Wiley, 2007

Quantum Electronics, third Ed., by A. Yariv, Wiley, 1989

Photonics, sixth Ed., Yariv and Yeh, Oxford, 2007

Grading Policy – Your final grade for this course will be determined by the following:

Undergrad Student

Presentation **≈ 30 %**

Home Work **≈ 40 %**

Mid-term Examination **≈ 30 %**

A = 90 – 100, B = 80 – 89, C = 70 – 79, D = 60 – 69, F = 0 – 59

Graduate Student

Presentation **≈ 30 %**

Home Work **≈ 40 %**

Mid-term Examination **≈ 30 %**

A = 90 – 100, B = 80 – 89, C = 70 – 79, F = 0 – 69

The final presentation for the graduate student requires a few research journal papers as references.

At the completion of the course, students should be able to understand basic concepts related to optoelectronics and photonics.

Prerequisites – Electromagnetics/ Physics **Co Requisites** – None

Topics Covered

Electromagnetic Fields and Waves (3 weeks); Guided waves in Dielectric Waveguides (3 weeks);

Semiconductor physics for optoelectronic applications (3 weeks);

LEDs, Laser Oscillation and Some Specific Laser Systems (4 weeks);

Detection of Optical Radiation (2 weeks);

Academic Integrity and Manners – University regulations

Attendance Policy – Attendance is mandatory. You will be responsible for all material covered in class and assigned in the textbook. If I do not arrive within 15 minutes of the scheduled start of class, you may leave after checking my office. *Punctuality is expected* and may be tested for.