

EET 212 - ELEMENTS OF PHOTONICS

Course Description

Elements of Photonics builds upon and applies principles presented in Fundamentals of Light and Lasers. The course includes modules on operational characteristics of lasers, specific laser types, optical detectors and human vision, principles of optical fiber communications, photonics devices for imaging, storage and display, and laser welding and surface treatment. Group 2 course.

Credit Hours

4

Contact Hours

5

Lecture Hours

3

Lab Hours

2

Required Prerequisites

EET 161

General Education Outcomes supported by this course

Quantitative Reasoning

Course Learning Outcomes

Knowledge:

- Understand and identify the correct terminology used when describing the operation and application of specific laser types.

Application:

- Be able to identify, select, and evaluate the appropriate laser to use for a desired manufacturing, medical, research, or engineering process. Students will gain hands-on experience with photonics equipment required to complete laboratory exercises and align critical photonics components.

Integration:

- Calculate required laser characteristics and properties of laser light, and be able to present these quantities to justify proposed uses of various lasers.

Human Dimension:

- Develop proper terminology required to interact with other professionals established in photonics (light and Laser) related fields.

Caring - Civic Learning:

- Understand the interdependence of lasers in daily activities, and the importance of lasers in art, commerce, manufacturing, entertainment, material processing, and medical treatments.

Learning How to Learn:

- Gain the prerequisite knowledge to continue learning photonics-related material to meet the needs of emerging job markets in technical fields utilizing photonics and lasers.