

# EET 161 - FUNDAMENTALS OF LIGHT & LASERS

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## Course Description

This course introduces the elements of a laser, operation of a helium-neon gas laser, laser physics, optical-cavities, properties of laser light and a survey of laser systems. Safety procedures concerning lasers and related equipment are presented in this course. Group 2 course.

## Credit Hours

4

## Contact Hours

6

## Lecture Hours

2

## Lab Hours

4

## Required Prerequisites

MTH 100 or higher

## General Education Outcomes supported by this course

Quantitative Reasoning

## Course Learning Outcomes

### Knowledge:

- Identify the correct terminology used when describing the interaction of light and matter.

### Application:

- Apply fundamental rules governing the propagation of light through materials.
- Calculate geometric angles and intensities of light as it interacts with the surface of materials.
- Complete laboratory exercises using photonics equipment.

### Integration:

- Present applications of light and used in manufacturing and typical daily activities based on their research.
- Describe the requirements and constraints inherent to the application of light to other disciplines.

### Human Dimension:

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

### Caring - Civic Learning:

- Appreciate the safety aspects of using lasers.

### Learning How to Learn:

- Recognize the needs of emerging job markets and highly technical fields relating to lasers.