

EELE 5422 Course Syllabus

The morality of art consists in perfect use of an imperfect medium
Oscar Wilde

Course Title	Laser Application
Course Objectives	The goal of the course is to familiarize each student with the characteristics of light, the propagation of light in various media, the basic theory of the laser, different laser systems, and applications of lasers.
Instructor	Dr. Hala J. El-Khozondar Office: L410
Course Material	Sigman, A. Lasers. California: University science books (1986) Handouts will be available each class PowerPoint lectures
References	M. Beesley (1998). Lasers and their applications. London: Taylor and Francis Ltd. 621.366 bee K. Kuhn (1998). Laser Engineering. London: prentice Hall International Coherent Inc. staff (1980). Lasers : Operation, equipment, application, and design. New York: McGraw-Hill Book company
Topics	Laser principle <ul style="list-style-type: none">▪ Resonant frequency of oscillators▪ Losses▪ Optically Pumped Solid State Lasers▪ Rate equations▪ Two-level system▪ Three-level system▪ Three vs. Four level system Types of Lasers <ul style="list-style-type: none">▪ Gas Lasers▪ Solid Lasers▪ Semi-conductor Lasers▪ Dye Lasers Laser Applications and Student Presentations on What's New!
Intended learning outcomes	<ul style="list-style-type: none">• To design a laser system• To list different types of laser systems• To write a list of laser applications• To give an oral presentation• To write a report• To build and analyze a laser system
Assessment	Midterm Exam (20%) Assignments (10%) Oral Reports (10%) Written Reports (10%) Laboratory Reports (%15) Final Exam (35%)

Homework Policy Homework assignments will be given in a regular basis. Each assignment is to be returned within one week. ***No delay will be accepted except with good excuse.***

Office Hours Open-door policy, by appointment, or as posted.