

MAJOR IN ELECTRICAL ENGINEERING, LASERS AND OPTICAL ENGINEERING CONCENTRATION

The Electrical and Computer Engineering (ECE) department is the premier place to prepare for a successful career in lasers and optics – a field that advances the science of light. Lasers hold the potential for generating a limitless form of clean energy, and they are used for everything from improving cancer detection to creating powerful computer chips. Construction will soon be completed on a new world-class laser facility at CSU. That means you will gain skills and knowledge from professors who are driving innovation at one of the most powerful laser facilities in the world.

ECE courses and research span a range of disciplines that include:

- Aerospace
- Biomedical Engineering
- Communications and Signal Processing
- Computer Engineering
- Controls and Robotics
- Electromagnetics and Remote Sensing
- Lasers and Photonics
- Power and Energy Systems

Learning Objectives

Upon successful completion of this program, students will be able to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.