

LASER TECHNOLOGY ESSENTIALS– CERTIFICATE OF ACHIEVEMENT

This Certificate of Achievement is not eligible as a major for an Associate Degree.

Top Code:

0934.80

Students completing the Laser Technology Essentials certificate will learn the scientific principles of optics, fiber optics, lasers, cameras, and other equipment that creates or detects light, as well as an introduction to electronics principles, devices and circuits. Students will be taught the skills required of competent industry technicians that will supplement other manufacturing and industrial skills that they may already know.

Graduates with prior experience in related fields will be prepared for a variety of demanding careers, such as assembly and test technician, laser-process technologist, sales and marketing specialist, field service technician, and technical education serving a variety of industries relying on optical technology including the areas of aerospace, medicine, remote sensing and environmental monitoring, energy, manufacturing, defense and homeland security, telecommunications, and entertainment.

A Certificate of Achievement will be awarded upon completion of all required courses with a grade of C or better.

Program Outcomes

- Recognize and describe the purposes of different optical components, including lenses, mirrors, prisms, windows, diffraction gratings, lasers, LEDs, detectors, polarizers, optical fibers, and optoelectronics.
- Demonstrate effective application of optical devices to generate, manipulate, and detect light.
- Operate safely high-energy, high-voltage laser systems to comply with ANSI and OSHA standards in industrial laboratory environments.
- Apply the quality assurance (QA) practices required to inspect optical components to ISO10110 drawing standards and military specifications (MIL SPECS)
- Properly use the industrial tools of an optics fabrication shop.
- Perform the technical tasks required to characterize an optical system, such as the measurement of a system's transmitted wavefront or its performance in production of high-resolution images.

Requirements for the Certificate of Achievement

Code	Title	Units
LASR 215	FUNDAMENTALS OF LIGHT AND LASERS	3
LASR 230	OPTICAL DEVICES	3
LASR 245	QUALITY ASSURANCE OF PRECISION OPTICS	3
LASR 260	METROLOGY OF OPTICAL SYSTEMS	3
Total Units		12