LASER-TEC college profile

Monroe Community College
Rochester, New York

LASER-TEC is the Center for Laser and Fiber Optics Education, founded in 2013 by the National Science Foundation (NSF) and headquartered at Indian River State College in Florida. It was created to help meet the goals of educating and sourcing domestic talent in the areas of optics and photonics. As a service to students, recent graduates, and prospective employers, Photonics Spectra is running profiles of some of the 36 LASER-TEC colleges throughout 2020.

Rochester-area employers have relied on Monroe Community College (MCC) since 1963 to educate generations of students to become optical technicians. Offering stackable certificate and associate degree programs, it is the only community college to offer an Associate of Applied Science degree in optical systems technology.

More than 700 optics technicians have earned their associate degrees from MCC and are working in the optics and photonics industry throughout the U.S. Companies that have hired graduates from MCC's program include Bausch + Lomb, Coherent, Corning, Eastman Kodak, Excelis, IBM, IDEX, ITT Goulds Pumps, JML Optical, L3 Technologies, the Laboratory for Laser Energetics, Lockheed Martin, Optimax, OptiPro, QED Optics, Rochester Precision Optics, Spectra-Physics, Sydor Optics, Texas Instruments, and Xerox.

Programs

Optical Systems Technology Associate of Applied Science (AAS)

This two-year degree program prepares graduates for work in high-technology fields that apply light and optical principles.

The curriculum combines the study of optics with electronics to prepare students for careers in electro-optics and traditional precision optics fabrication. The course of study gives students the opportunity to operate much of the same precision equipment and state-of-the art optical systems used in industry. Skilled optics technicians work with engineers and scientists to inspect and test optical components and assembly systems using advanced technology tools. Graduates of this program work with scientists and engineers in research and development, design, production, quality control, and test and evaluation of optical components and systems, as well as with sales and service professionals.

Stackable Certificate in Optical Systems Technology

MCC's Optical Systems Technology Certificate program provides a solid optics background with options to focus on manufacturing, testing, or electro-optics/photonics applications. The certificate program is designed to be completed in one year. All certificate courses may be applied to the requirements of the AAS

degree program for students who decide to continue their studies.

Graduates of MCC's Optical Systems Technology program have the skills to:

- Evaluate optical systems using a number of geometrical and wave optics test procedures.
- Take standard measurements and evaluate typical electro-optic configurations.
- Understand and perform basic and advanced optical manufacturing techniques for today's precision optical components.
- Understand and perform basic and advanced metrology techniques for testing optical systems and individual optical components.
- Handle and clean an optical surface according to industry standards.
- Form an achromatic doublet by assembling, aligning, and cementing two optical elements.
- Use interferometers to measure optical components.
- Identify the centration and spacing of optical surfaces in an assembly using an optical centering system.
- Assess the optical performance of an optical system using an optical transfer function measurement system.
- Describe particulate control in a laminar flow clean environment.
- Interpret optical drawings.
- Prepare quality assurance and detailed laboratory reports.
- Inspect an optical surface to identify particles, scratches, and digs down to the micron scale.
- Master basic workplace skills, including technical writing, oral communication, teamwork, and problem solving.

How to recruit from this college

Campus recruiting visits are welcome. Companies interested in recruiting MCC optics students should contact the optics program director listed below. MCC will make available, free of charge, a private room for interviewing interested students. Graduates are available every December and May.

MCC is leading the effort to expand the precision optics manufacturing apprenticeship nationwide. Please contact us if your company is interested in participating in our apprenticeship program. Additionally, please contact us if you would like to hire one of our students as a summer intern.

Contact information

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Program website

www.monroecc.edu/go/ost

MCC students learn how to inspect optical surfaces down to the micron scale.