

Nothwestern Michigan College Traverse City, Michigan

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 established 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 35 LASER-TEC colleges throughout 2020.

Northwestern Michigan

College (NMC) offers an Associate of Applied Science degree in engineering technology with an electronics specialization, which includes studies on lasers and optics technology. The degree program focuses, in part, on the applied aspects of science and engineering technology to provide students with practice in the technology spectrum, including product improvement, manufacturing, robotics, unmanned systems, and marine technology. The degree offers a core set of engineering technology skills with a specialization in one of several technical concentrations.

Graduates of the degree program have the skills to:

- Solve engineering technology problems using project-based learning.
- Apply the fundamentals of electricity and electronics.
- Follow safe electrical work practices.
- Construct circuits from schematics and diagrams using proper wiring and soldering techniques.
- Perform electrical measurements using multimeters, oscilloscopes, and other test equipment.
- Program microcontroller-based systems.
- Use a systems-level approach to



Tara Hufford, a Northwestern Michigan College student, troubleshoots a wheeled robot that she programmed in Python language.

analyze electronics and electrical devices.

- Bench test and integrate devices to meet system requirements.
- Perform design modifications, circuit improvements, and component protection as designs are developed into working prototypes.
- Understand control circuits, electrical schematics, and line diagrams.
- Develop interfaces to programmable logic controllers (PLCs).
- Understand the elements of a laser and laser systems.
- Understand the operation of a helium-neon gas laser, laser physics, optical cavities, and properties of laser light.
- Follow safety procedures concerning lasers and related equipment.
- Understand operational characteristics of lasers, specific laser types, optical detectors, and human vision.
- Understand principles of optical fiber communications, photonic devices for imaging, storage and display, and laser welding and surface treatment.

- Communicate effectively, conduct tests and measurements, and function effectively as a member of a technical team.

How to recruit from this college

The NMC Engineering Technology program graduates highly skilled technicians with diverse skill sets. Our students are interested in working throughout the Great Lakes Region and the U.S. "Lunch and learns," both in person and

virtual, are great opportunities to promote your company and interact with our students. Companies will typically showcase their industries, highlight the skill sets that they are seeking, and answer career-related questions. Afterward, a company representative can meet with the students one-on-one to discuss specifics.

Career opportunities can be promoted on the program's LinkedIn job board, on social media accounts, and in class. The college also hosts virtual and in-person career fairs. NMC has a robust internship program that can assist your company in identifying potential candidates for internship opportunities.

Contact information

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Program website

www.nmc.edu/tech