

Indian Hills Community College (IHCC) Ottumwa, Iowa

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 founded 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 will run profiles of the 36 LASER-TEC colleges throughout 2020.

For more than 31 years, IHCC has offered an associate-level degree in applied science in laser and optics technology. More than 700 technicians have graduated from IHCC and are working in the laser/photonics industry throughout the U.S. and internationally. Companies that have hired graduates include Lawrence Livermore National Laboratory, Raytheon, Mazak, Northrop Grumman, IDEX, Lumenis, DRS Daylight Solutions, Rudolph Technologies, and Medtronic.

Program

Laser and Optics Technology Associate in Applied Science (AAS)
A 21-month program with an electronics core covered in the first nine months.

During the core, students learn electronic circuit analysis and troubleshooting, and take their general education courses. Over the next 12 months, they learn about the basic properties of light, geometrical optics, optical devices, physical optics, photonics troubleshooting, and more. Graduates work as technicians in industrial, medical, and military production companies. In addition, graduates go to work in research and development, national labs, field service, and system installation/repair. New employment opportunities emerge daily.

Skills include learning how to:

- Troubleshoot integrated photonic/electronic systems using microscopes, oscilloscopes, pulse generators, power meters, beam analyzers, spectrometers, or energy measurement devices.
- Tune Nd:YAG, HeNe, and CO₂ lasers for maximum power and optimal beam quality.
- Align optical systems.
- Recognize and implement the components, equipment, and hardware used in lasers and optics.
- Recognize, evaluate, and execute laser safety protocol per ANSI and OSHA standards.
- Properly clean, handle, maintain, and package precision optics.
- Recognize and employ equipment used for laser beam measurement, manipulation, and analysis.
- Write and implement standard operating procedures for photonics experiments.
- Perform preventive or corrective maintenance on lasers and optical systems.
- Write CNC programs for automated laser processing applications such as cutting, welding, and drilling.
- Understand and use knowledge of geometric ray and particle theory of light.
- Research, comprehend, evaluate, and execute specified photonics systems and related equipment.
- Maintain service and operation records for all laser/optical systems.
- Understand and use the wave theory of light.

How to recruit from this college

Each year, during the first two to three weeks of March, "Presentations and Interviews Weeks" is held at IHCC. Companies



Student Joey Lee sets up a Class 1 laser experiment at IHCC.

have an opportunity to present to and interview the entire graduating class. For details, or to set up a presentation time, please contact Michael Shay (below). Arrangements can be made to accommodate your company's visit if the first few weeks of March are inconvenient. A majority of graduates are available every May, with a few available in November.

Contact information

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Program websites

www.laser-tec.org
www.indianhills.edu/academics/tech/laser.php