

LASER-TEC college profile



Gallatin College, Montana State University Bozeman, Montana



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 through 2020.

The state of Montana encompasses one of the densest per capita clusters

of optics and photonics institutions in the U.S. To meet the ever-growing workforce demands of this local cluster — and of the nation overall — Gallatin College offers an Associate of Applied Science (AAS) degree in photonics and laser technology to develop highly trained photonics and electro-optic technicians.

Located in Bozeman, Mont., the college complements the four-year programs at Montana State University and ensures access to workforce development that promotes a vibrant local economy. Since its inception in the autumn of 2016, the photonics and laser technology program's

three cohorts have graduated a total of 24 technicians, and all are working and excelling in the local photonics industry. Companies that have hired graduates from the program include LUMIBIRD, Aurora Innovations, Quantum Composers, FLIR Systems, and Resonon.

Program

Students completing Gallatin College's AAS program in photonics and laser technology will understand the scientific principles of electronics, photonics, and advanced manufacturing. This includes a focus on AC/DC, solid-state, and digital electronics, as well as the fundamentals of light and lasers, laser systems, associated applications, and advanced manufacturing techniques.

The training prepares students to become technicians in photonics and electro-optics who are capable of working on products or devices used in manufacturing, communications, defense, homeland security, the medical industry, information technology, energy, environmental monitoring, lighting, displays, and entertainment.

A large portion of the electronics and photonics curriculum is hands-on. Students spend a majority of their time working in a laboratory environment, applying their theoretical knowledge to master the use of relevant test and measurement equipment to construct and troubleshoot advanced electro-optic systems.

Graduates of the program will have the ability to excel as technicians in the electronics, optics, laser, and photonics support fields.

Specific knowledge and skills of graduates include:

- Overall knowledge in laser systems, electronics, optics, and electro-optics/photonics.

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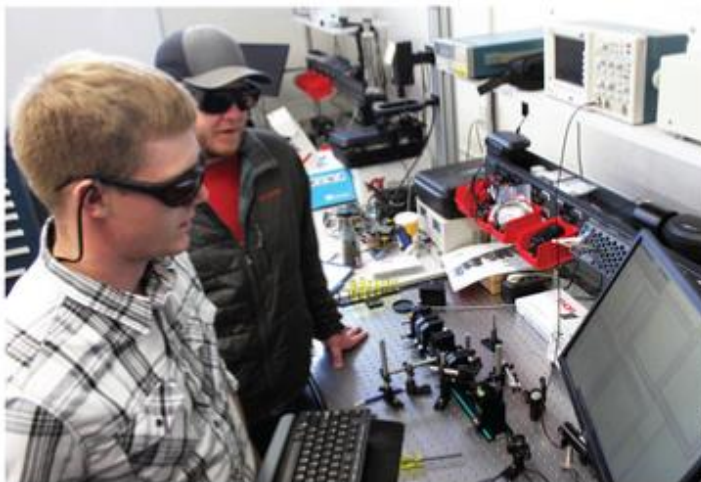
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Students Adam Broden (left) and Alex Weissner team up to construct and characterize a 1064-nm laser using an eLas Americas Nd:YAG educational laser kit. Both students are pursuing applied science degrees in the photonics and laser technology program at Gallatin College.

- Demonstrated knowledge in the fundamentals of light and lasers, including the nature of light, geometric optics, wave optics, optical components, opto-mechanical components, positioning equipment, the physics of lasers and laser operation, fibers and fiber optics, and overall laser safety.
- Demonstrated knowledge in electronics, including AC/DC electronics, electronic components, and circuitry, as well as the ability to maintain and clean the equipment and tools required for the application of optics, lasers, and photonics.
- The ability to analyze, configure, test, measure, and troubleshoot problems that arise in professional optics, lasers, and photonics environments.
- The ability to communicate technical ideas, procedures, and results with professionals in written, oral, or graphic formats.
- Preparation for a variety of careers in design and manufacturing, materials processing, communications, medical applications, semiconductor fabrication, optical systems, electronics, and military applications.

How to recruit from this college

If you are interested in recruiting students from Gallatin College, please reach out to our program director or come to our college to present your company and its employment opportunities to our students. We will make available, free of charge, a private room in which to interview interested students. Please contact us to arrange a recruiting visit. Current students are always seeking internship opportunities, and graduates are available every May.

Contact information

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Websites

www.gallatin.montana.edu/programs/photonics-laser.html
www.montanaphotonics.org



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