**Education**

Most jobs require a minimum of a two-year associate degree in laser and photonics technology. Central Carolina Community College in Sanford established the first and only laser program in North Carolina in 1987. While there are about 20 similar programs scattered around the US, the CCCC program is the only one in the southeastern region.

The laser program is housed in a 22,000 square foot state-of-the-art facility in Lillington, NC. The facility includes five laser laboratories, a darkroom, two electronic labs, a general science lab, numerous classrooms, computer labs, and a learning resource center.

Equipment was purchased with the help of a grant from Tektronix, Inc. In 1993, CP&L and the North Carolina Telephone Association established the program as the Laser, Electro-Optics and Electronics Center of Excellence.

Credit earned at Central Carolina credits are accepted by UNC-Charlotte, which offers a photonics-related four-year program through their College of Engineering "Technologies".

**Financial aid**

Grants, scholarships, loans and work-study programs are available for college and private school students. For most of this aid, students should submit a Free Application for Federal Student Aid (FAFSA) which is available from high school guidance counselors and higher education financial aid offices.

Some environments keep technicians at a bench troubleshooting or operating in the same environment daily. In other positions, technicians work in various departments, labs, production sites and offices within a company. Laser and photonics technicians generally work as part of a team, sometimes with scientists and engineers, sometimes with a production or supervisory group. Persons who are successful in laser and photonics careers usually have a genuine interest in how things work. They have a tendency to "tinker" or take things apart and have an interest in technology. They have a willingness to do applied mathematics, love to solve problems, and are strongly motivated to learn new things.

Starting wages have climbed dramatically in the past five years with the average starting salaries in North Carolina of persons with a two-year associate degree being $32,400. Generally, field technicians have a higher salary than do bench technicians.

Since the inception of the program, approximately 85% of the photonics graduates find employment in their field of study within six months of graduation. The rate of placement has been as high as 100% in recent years.

**Jobs in this field**

<table>
<thead>
<tr>
<th>Entry level positions in laser and photonics fields</th>
<th>Field service technician</th>
<th>Research technician</th>
<th>Manufacturing technician</th>
<th>Technical sales person</th>
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</thead>
<tbody>
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<td>Engineer/Technician</td>
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<td>The average starting salary for associate degree graduates in 1999 was $32,400.</td>
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<tr>
<td>With work experience, other positions in the field include: Supervisor, Field service engineer, Chief operating officer, Applications engineer, Applications engineer, Product manager.</td>
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**Skills needed**

In high school classes that best prepare students for laser and photonics careers are algebra, trigonometry, physical science, physics, electronics, and principles of technology.

**Activity**

Look through the newspaper and find individuals that are in the news and/or want-ads that are Technology related. Follow the following questions:

- Do they work in product development or testing?
- Do they repair equipment?
- Do they do research?
- Are they in Sales & Marketing?
- Do they involve Laser & Photonics Technology?

**Profile**

**Lillington, NC**

Will Holder's first year at Central Carolina Community College was marked by one major event: receiving a degree in Laser Photonics. Will says, "I would never have known the field existed before transferring to receive a four-year degree in Photonics. After graduating, I was offered a job at the University at the career center, the two-year technical degrees were training better than usual. The Laser & Photonics courses were being taught in his hometown of Lillington, and the local photonics manufacturer was looking to hire engineers. He received his job offer the same day he graduated and accepted it on the spot. Holder currently works for North Carolina Space Station (NCSS) in partnership with North Carolina State University as a Laser Technician. His job mainly involves working behind a computer, but he is also involved in teaching others how to use the Laser. Holder currently works for North Carolina Space Station as a Tech Team Leader, working with telecommunication services such as AT&T, BellSouth, and AT&T. He installs access nodes for both T1 and T1 lines. Holder previously worked for Interpath, where he installed access node equipment for T1 lines. Holder holds a Bachelor's degree in Laser & Photonics Technology from Central Carolina Community College and a Master's degree in Laser Photonics from the University of Florida. Holder currently works for a company in his hometown of Lillington, NC, which manufactures laser equipment. Holder's goals are to work in the Northern Triangle Park area, but jobs are available throughout North Carolina and nationally.

**What you wear**

Typical attire for most technicians is a polo type shirt and tie. Some companies provide uniforms for employees. Some environments may be casual for those with very few requirements. Field service technicians may wear a polo shirt with a company logo. Some companies require special shoes to prevent static electricity from damaging sensitive electronics. In research environments, lab coats may be required.

**Future job opportunities**

A recent North Carolina study indicated annual personnel requirements in the laser and photonics field of at least 120 new technicians per year. In particular, the role that North Carolina plays in the fiber optics industry is substantial. In 1992, Tektronix, Inc. and Solartron set up a joint venture in the field of laser and photonics technology in Raleigh. Now, Tektronix is planning to increase its workforce in the laser and photonics field. Analysis of available laser and photonics careers is projected in this field for the 21st Century. All of the laser technology, telecommunications is the largest current market. Jobs are plentiful in the Research Triangle Park area, but jobs are available throughout North Carolina and nationally.

**Want to know more?**

Central Carolina Community College

www.carrington.edu

The professional society, SPIE provides additional information on photonics-related careers. The website provides information on careers in photonics. For more information, visit their website at www.spie.org/web/courses/technology/nn/--/p/k12resources.html

National core curriculum standard for Photonics Technicians developed by the industry is available at www.askengineeringorg.

Another educational partnership sponsored by:

"An Education That Works"

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