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career

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 astonishing. With Corning, Sicon, Berk-Tek and Sumitomo Electric, just to name a few, North Carolina has become one of the leading laser and photonics manufacturers of fiber optics and cable in the world. One industrialist has called North Carolina the "hotbed" for fiber optics technology.

Above average growth is projected in this field far into the 21st Century. Of all the users of laser technology, telecommunications is the largest market. Jobs are plentiful in the Research Triangle Park area, but jobs are available throughout North Carolina and nationally.

What you wear



Typical dress for most technicians is a polo type shirt and jeans. Some environments may be casual enough for t-shirts, and very few require a tie. Field service technicians may wear a polo shirt with a corporate logo.

Some companies require special shoes to prevent static electricity from damaging sensitive electronics. In research environments, lab coats may be worn.



Want to know more?

Central Carolina Community College at www.centralcarolina.org

The professional society, SPIE provides additional information on their web site www.spie.org/web/courses/tem/p/k12resources.html

National curriculum standard for Photonics Technicians developed by the industry is available at cord.org/photonics/standard.htm

Where/how to get training

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.

"Credits 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, which is available from high school guidance counselors and higher education financial aid offices.



For more information on federal financial aid programs, call (800) 4-FEDAID

focus on jobs in Laser Photonics

Long term projections for industry growth are staggering as fiber optics communications systems extend into telephone local loops, local area networks and cable TV systems. Of all the users of laser technology, telecommunications is the largest market. A large percentage of program graduates work within the telecommunications industry.

As with many engineering technologies, various levels of employment are designated by the employers of technicians. Research institutions often have a multi-step grading system for technicians who can advance according to experience, education and job performance. In private industry, technicians sometimes advance to supervisory or management positions if they show themselves to be highly effective, organized and skilled in supervisory tasks.

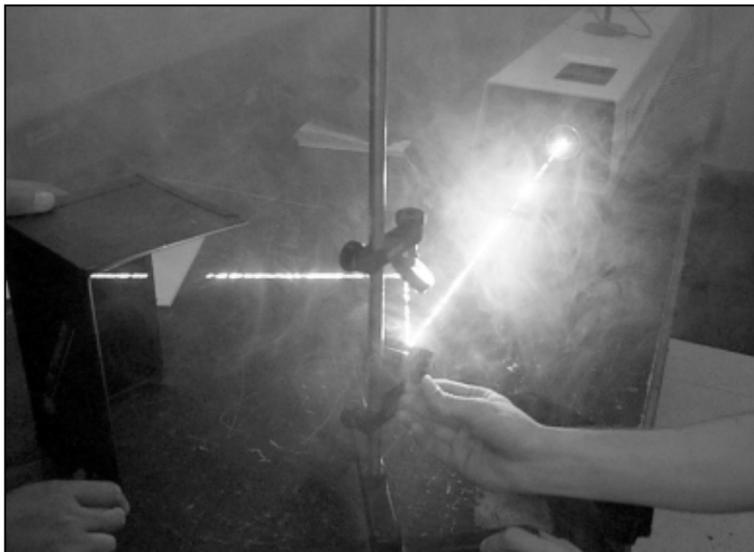
Technicians work in a wide variety of environments, including laboratory clean rooms, construction sites, manufacturing plants, or hospital operating rooms.



Laser and photonics technicians generally work as part of a team, sometimes with scientists and engineers, sometimes with a production team 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 associates 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 laser 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.



Some environments keep technicians at a bench troubleshooting or operating lasers in the same environment daily. In other positions, technicians work in various departments, labs, production sites and offices within a company.

Jobs in this field

Entry level positions in laser and photonics fields include the following:

Engineering technician	Field service technician	Photonics technician
Research technician	Laser technician	Test technician
Manufacturing technician	Technical sales person	Technical sales person

The average starting salary for associate degree graduates in 1999 was \$32,400.

With work experience, other positions in the field include:

Supervisor	Field service engineer
Chief operating officer	Manufacturing engineer
Applications engineer	Product manager

Skills needed

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 Technicians. Answer 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

Will Holder
Lillington, NC



Will Holder's first year at Central Carolina Community College was focused on his receiving a degree in Nursing. This would mean that he would spend two years at Central Carolina before transferring to receive a four-year degree in Nursing. However, after spending one day at North Carolina State University at the career center, the two-year technical degrees were looking better than usual. The Laser & Photonics courses were being taught in his hometown of Lillington, and the basic classes that he had already taken would transfer. He received his associate degree in May of 1997.

Holder currently works for Nortel as a Site Team Leader/Tester, working with telecommunication servers such as AT&T, BellSouth, and Alltel. He installs access nodes that feed T1 Lines. His Associate Degree was in Laser & Photonics Technology. He says, "I like the diversity of the field. I am never in the same place and am always doing something different. I travel all over the United States. I may be in Philadelphia for one week and the next week I may be back in Raleigh."

There is an abundance of programs around the country that offer four-year Engineering degrees. Technicians with the ability to troubleshoot and solve "real world" problems are becoming a rare commodity. In fact, the only place in the southeastern region of the United States that offers an Associate's Degree in Laser and Photonics Technology just happens to be located in Will's hometown. Holder's goals are to eventually move into a home based job and become a supervisor. He is currently based out of Alpharetta, Georgia.

Holder talked about how he started with Nortel. "After graduation, I was working with Applied Technologies, installing controls for large buildings and this had nothing to do with my degree. This was just a 'buffer' to get me through until I broke into my real career. While in school, I worked the weekend shift at Alcatel for six months with hopes of getting on full-time. In the meantime, I met someone from Interpath that referred me to Nortel. I had two telephone interviews and then they flew me to Atlanta and the next week they offered me the job. As it worked out, this was the best thing for my career."

Best Advice

Meet and talk with people everywhere you go - network. You may find the perfect career just by telling people what you do.

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