



Center for Educational Leadership

Certified Fiber Optic Technician

Prepared by:
Jerry Johnson



2022-2023

Prepared For:
Curtis Landen

Center for Educational Leadership

443-916-6836

145 West Ostend Street,
Suite 600-9015
Baltimore, MD 21230

Table Of Content

01	About Us
02	Fiber Optic Association (FOA)
04	Certification
07	Industry Outlook
08	Employment Outlook
09	Workforce Employment Plan
10	Leadership Team



About Us

Our vision is to bring into underserved communities' resources and assets that will build a stable social infrastructure.

The Center for Educational Leadership (CEL) solely owned and operated minority corporation with more than twenty years of experience in workforce development, career planning and technology training. The Office of Statewide Broadband (OSB) awarded CEL two contracts to develop broadband Internet in the underserved and low-income south Baltimore communities. The first phase of the pilot project will provide broadband “fiber-to-the-home” for more than 150 residents of “Westport-Mt. Winans-Lakeland communities through the Maryland’s GAP Network Program.



Certification Organization

Fiber Optic Association (FOA)

Fiber Optic Certifications

Understanding FOA Certification

FOA certifications are based on knowledge, skills, and abilities (KSA's) which are expected of a technician working in fiber optics and premises cabling. Here is a brief description of each of the FOA primary certifications. These certifications are designed for techs without prior fiber optic experience who want to learn how to use fiber optics.

Fiber Optics Technician (CFOT)

Basic fiber optic course for all techs and all applications. Through this training, you will be able to learn the knowledge and skills necessary to become a competent fiber optic technician. This includes fiber optic cable preparation, splicing, termination, and testing.

FOA certification applicants take an exam after they pass a formal application and meet all the requirements.

Fiber Optic Network Design (CFOS/D)

The Design course is available online free at Fiber U with options for obtaining a certificate of completion or, for those with applicable experience, FOA CFOS/D certification.

Premises Cabling (CPCT)

Premises cabling for LANs, DAS, security, building management systems, etc. covering copper, fiber and wireless

Certification

CLASSROOM INSTRUCTION

Our employee certifications are based on reference materials for the knowledge requirements and are provided in Fiber Optic Association textbooks, and free FOA guides, online at Fiber U. Fiber Optic Association (FOA), certified technicians must demonstrate their knowledge, skills and abilities in training courses and/or show experience in applying this technology in their field work.



FIELD TRAINING

Being certified in fiber optics identifies you as a fiber optics installer. It shows you can demonstrate practical knowledge of fiber optic theory, standards, codes, theory and widely accepted practices in the industry. The certification involves a lot of field training in fiber optic installation skills.



Certification Fiber Optics Technician (CFOT)

Knowledge

A certified fiber optic technician should have knowledge of the scope of fiber optic applications, components and processes to be able to successfully work in any aspect of fiber optic technology.

Understand fiber optic jargon.

Communications systems.

Specifications of optical fiber.

Fiber optic cable and their uses.

Cable termination and splicing

Skills

These are generalized descriptions of the skills appropriate for a certified fiber optic technician. Fiber optic technicians may be called upon to work in many diverse applications where fiber optics is used. There are hundreds of applications, thousands of types of cables, dozens of types of connectors and termination processes, several splicing types and processes.

Abilities

Reading and Math at approximately a 10th grade level

Good eyesight with color rendition

Good hand-eye coordination

Be able to use hand and power tools

Analytical skills

Follow directions

Patience

Work in adverse conditions

Benefits of Certification



Being recognized as the best

Like any certification program, the benefits to the members who pass the certification tests are based on the recognition of achieving a level of competence in the fiber optics field. For the end user looking for competent fiber optic personnel, it is the knowledge that this person has demonstrated and ability in the field and, perhaps even has documented experience.



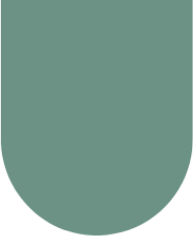
The opportunity for mastery

Each certification exam is reviewed on a yearly basis (at minimum) by a group of subject matter experts, educators, representatives of several national associations, and FOA staff members to ensure that the material contained in the exams is up to date and in compliance with current industry standards. Candidates who receive their certification can be confident that the knowledge they have demonstrated reflects the best industry has to offer.



Increase a Technician's Market Value

Certifications also increase their market value. Technicians who underwent training programs for certifications earn more than those who didn't.



Fiber Optic Technician - Basic Fiber Optic Certification Curriculum

Fiber Optic Knowledge

Fiber Optic Communications Systems

How communications systems use light to transfer information

OSP Systems: Internet, Telco, CATV, Utility, Municipal

Components and their functions in a datalink

Sources: LED, Laser (FP, DFB, VCSEL)

Detectors (photodiode, APD; Si, Ge, InGaAs)

What determines how well a datalink transmits data.

Optical Fiber

Types of optical fiber

SI MM, GI MM, SM

Basic specifications that affect transmission

Attenuation, dispersion

Choosing the appropriate fiber for the system.

Fiber Optic Cable

Types of cables and their applications

Tight buffer (simplex, zipcord, distribution, breakout)

Loose tube (loose tube, ribbon)

Specialty (OPGW, underwater, air blown, flat sawn-groove)

Relevant specifications for applications

Water blocking, pulling strength, armoring, etc.

Choosing the proper cable for application.

FIBER OPTICS INDUSTRY OUTLOOK 2023-2029

Growing Industry

The fiber optics market is projected to grow from USD 4.9 billion in 2022 and to reach USD 8.2 billion by 2027; it is expected to grow 10.9% from 2022 to 2027.

Digital Transformation

Increasing online commerce for retail goods & services, digitalization of hospital records, e-government initiatives, and rapidly rising platforms for media and entertainment content are notably augmenting the market growth.

Online Learning

The need for digital education, reflects a strong requirement for uninterrupted broadband connectivity.

Work-from-Home

Most offices have adopted a work-from-home strategy that has fueled up the growth rate for broadband services.

Broadband Connections

In terms of revenue, the fiber optics segment dominated the market and accounted for the largest revenue share of 34.9% in 2021. This high share is attributable to the capacity of fiber optics to carry superior quality network signals from the operator's equipment directly to an enterprise, business, or household.

Reliable Internet

The trend of online learning is speedily gaining momentum as schools, colleges, and universities promptly adopt digital education, thus requiring a reliable Internet Connection.

Futureproof

Fiber networks have been called "futureproof", continuously improving technologies to increase bandwidth according to business needs.



FIBER OPTICS TECHNICIAN OUTLOOK 2023-2029

Technicians/Installers

Fiber optics technicians work with the optical fibers and cables used in transmitting communications data. Depending on the area of employment, technicians splice fibers, fuse fibers together, and install fiber cables beneath the ground and in buildings. These technicians work for telecommunications and cable companies, and other businesses involved in telecommunications. The U.S. Department of Labor reports that approximately 122,700 telecommunications line installers and repairers, including fiber optics technicians, are employed in the United States.

Work Environment

The work of fiber installers and repairers can be physically demanding. Line installers must be comfortable working at great heights and in confined spaces.

Earnings

Telecommunications line installers and repairers, including fiber optics technicians, had median annual earnings of \$58,280 in May 2018, according to the U.S. Department of Labor. Ten percent earned less than \$30,950, and 10 percent earned \$92,440 or more per year.

Job Outlook

Overall employment of line installers and repairers is projected to grow six percent from 2021 to 2031, about as fast as the average for all occupations.

About 23,500 openings for line installers and repairers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.



Westport Internet Pilot Project

Workforce Development Plan

Certified Fiber Optic Technician



EXECUTIVE SUMMARY

On-The-Job-Training (OJT): Our program combines classroom and online study at Fiber U with OJT to help employees develop into FOA-certified fiber optics technicians in approximately six months. Upon completion of this program, the trainee will be prepared to take the certification exam for the FOA CFOT (Certified Fiber Optic Technician) and/or CPCT (Certified Premises Cabling Technician), the most widely recognized fiber optic and premises cabling certifications in the industry.



Our Leadership Team



Jerry Johnson
CEO, CTR. for Educ.

Leadership

Director, community based organization leading in economic development programs



Jaime Paniagua
CEO, Paniagua Enterprises

CEO, communications company for more than 30 years. Specializing in broadband.



Sidney Downs
SynergisticIT Solutions

CEO, electrical engineering consultant providing broadband IT solutions for 30 years.