FIBER OPTIC TRAINING

COURSE CATALOG

Light Brigade®

Contents

Not Sure Where to Start?

Take our quiz to find the best training course option for you!

The Leader in Fiber Optic Skills Training

Since 1987, Light Brigade has trained more than 85,000 students in courses ranging from basic fiber optic theory and practices to comprehensive design and installation courses. We are not just theory based. Our hands-on labs reflect real-world tasks, providing the practical training needed to improve operational efficiencies by reducing costly errors.

We offer several methods for training and can tailor any program to suit your needs.

Training Solutions

- **Instructor-led Classroom Training**
  Our low 7:1 student-to-instructor ratio allows the personal attention needed to attain the required skills and concepts. Many of our courses include hands-on skills labs where students learn by completing practical exercises that reflect real-world situations: preparing cable, splicing, terminating, using testing and troubleshooting equipment to verify their work, and more.

- **Online and Recorded Training**
  Light Brigade offers convenient asynchronous (or self-paced) online and recorded training for everyone working with fiber, keeping your employees on-site where you need them most. Educational content covers everything from introductory to advanced topics with several courses building a foundation for certification.

- **Virtual Classroom**
  We have developed interactive online versions of the classroom portions of our courses that allow students to be trained remotely in real time with a live Light Brigade instructor. Scheduled throughout the year, our remote classes are a convenient option in today's dynamic travel environment.

- **Training at Your Location**
  Each of our customer's fiber applications and challenges are unique, so we are happy to schedule training when and where it works for your team. Customize any course to match the precise needs of your group.

Our Instructors

Our full-time and contract instructors are a diverse team with a passion for fiber technology. This diversity allows us to ensure the right trainers are leading the right courses where their industry knowledge and practical real-world expertise can be leveraged best. We work with our industry-veteran instructors and subject matter experts to tailor programs for technicians, installers, engineers, designers, and other support staff from a variety of industries and verticals.

Relevant Technology-based Courses

Course materials are updated frequently to remain current with emerging technologies, products, and best practices. Class materials always reference the latest applicable standards and codes.

Certified Fiber Optic Expert

NEW!

Earn a Light Brigade CFOE Shield

Our Light Brigade Certified Fiber Optic Expert (CFOE) professional designation represents the successful completion of three progressive tiers of fiber optic theory and skills training. This digital credential shield is your sign to the industry that you have been trained to the highest level by the Leader in Fiber Optic Skills Training.

Earners must complete the introductory level Fiber Foundations online course as well as a minimum of one course from each of three levels (foundational, intermediate, and advanced) to earn the credential. The learner can choose any course from the Light Brigade offerings to earn their credential. There are learning tracks for technicians and professionals to guide them on a course progression path, or they can choose their own unique path.

Upon completion of each course level, the learner will earn a digital credential through Credly. Once the learner has successfully completed all three course levels and any associated industry organization certifications, the learner will earn the benchmark Light Brigade Certified Fiber Optic Expert (CFOE) designation and receive a digital credential shield recognizing the completion.

How Do I Become a Light Brigade CFOE?

Step 1:

Take a Foundational course

Step 2:

Take an Intermediate course (or two workshops)

Step 3:

Take an Advanced course

Want to learn more? Visit us at lightbrigade.com.

Certified Fiber Optic Expert

Foundational

Aimed at professionals of all levels, foundational level courses establish and build upon the basics for thorough comprehension. These courses are tailored to establish knowledge for those new to fiber while also broadening knowledge for those more seasoned, while making both feel like the course is suited for their level. Foundational level courses are indicated with yellow designations.

Qualifying Foundational Level Courses

- Fiber Optics 1-2-3 Four-day
- Broadband Fiber Optic Technician Level 1
- OSP for Installers and Technicians
- ABF for Installers and Technicians
- Fiber Optics for Oil & Gas
- Fiber Optics for Mining
- Fiber Optics for Wireless
- Fiber Optics for Enterprise Networks
- Fiber Optics in Data Centers
- Fiber Optics for Utilities Level 1

Intermediate

Intermediate level courses review the skills learned in foundational courses and expand to provide a deeper understanding of concepts and how they are applied beyond the basics. These courses are aimed at professionals with a base level understanding and experience that are ready to go to the next level. Intermediate level courses are indicated with orange designations.

Qualifying Intermediate Level Courses

- Advanced Outside Plant Technician
- Broadband Fiber Optic Technician Level 2
- Certified Fiber to the Home Professional
- Fiber Optics for Utilities Level 2
- Any two of the following workshops:
  - Air Blown Fiber Workshop
  - Splicing Deep Dive Workshop
  - OTDR and Testing Deep Dive Workshop
  - Emergency Restoration Workshop
  - Fiber Characterization Workshop

Advanced

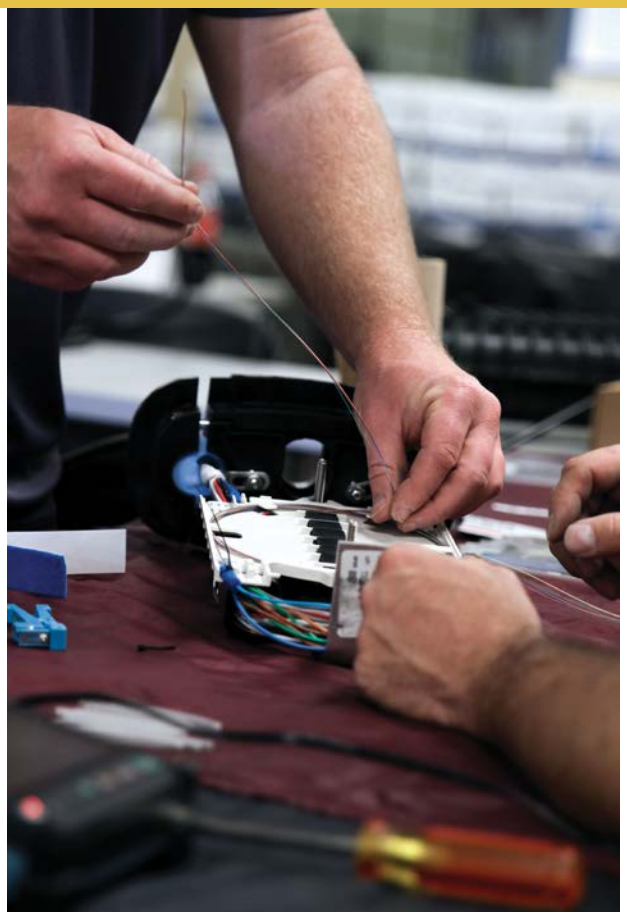
Light Brigade Advanced level courses explore the bits and bytes that make high-performance fiber networks operate. These next level courses are critically designed for engineers, designers, and technologists working in the design and operation of fiber optic networks to provide an unparalleled knowledge base and level of expertise. Advanced level courses are indicated with red designations.

Qualifying Advanced Level Courses

- FTTX Outside Plant Design
- Fiber Optics for Utilities Level 3
- Broadband Fiber Optic Technician Level 3
- Certified Fiber Characterization Engineer
- Certified Optical Network Associate
- Certified Optical Network Engineer

Fiber Optics 1-2-3

Foundational



This instructor-led course provides a fundamental understanding of fiber optics and the practical hands-on skills training required to install and maintain fiber optic networks. Perfect for those new to fiber or those looking to enhance their current skill set. The first two days of training are dedicated to classroom theory and lecture, which allows students to gain knowledge of fiber technology and network components. The following two days are dedicated to hands-on skills training to learn and apply proper cable preparation, termination, splicing, and testing skills.

Audience: Field technicians, installers, IT support staff, engineers, field supervisors, OSP staff, maintenance techs, or technical sales staff

Prerequisite: Fiber Foundations is recommended, but not required.

Credentialing

ETA® International Fiber Optics Installer (FOI)

Valid for four years.
Four-day attendees only.

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Sumitomo Fusion Splicing Fundamentals Digital Badge

Available to four-day attendees only.

Continuing Education Credits (CECs)

30 BICSI CECs (four-day)
15 BICSI CECs (two-day)

Click or scan for detailed course information and upcoming training locations.

"They excelled in making fiber optics easy. You can't improve on perfection."

— Gabriel Hartman

Fiber Optics 1-2-3 Remote Classroom

Foundational

Light Brigade offers a virtual option that brings the theory-only component of our Fiber Optics 1-2-3 classroom learning directly to you, making it easier than ever to get the knowledge you need. This instructor-led course gives attendees a fundamental understanding of fiber technology, network components, and equipment that is perfect for those new to fiber or those looking to enhance their current knowledge base.

Audience: Field technicians, installers, IT support staff, engineers, field supervisors, OSP staff, maintenance techs, or technical sales staff

Prerequisites: Fiber Foundations is recommended, but not required.

We've transformed the Fiber Optics 1-2-3 course's two days of classroom learning into four half-day online sessions with a live Light Brigade instructor. Remote students get the same in-depth knowledge and insights as attendees of our in-person course — including interacting with the instructor and participating in interactive exercises — all from the comfort of their own home or office.

Two days of hands-on skills training can be added later to develop cable preparation, termination, splicing, and testing skills and to qualify for ETA certification and the Light Brigade Fiber Optics 1-2-3 Four Day digital badge.

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

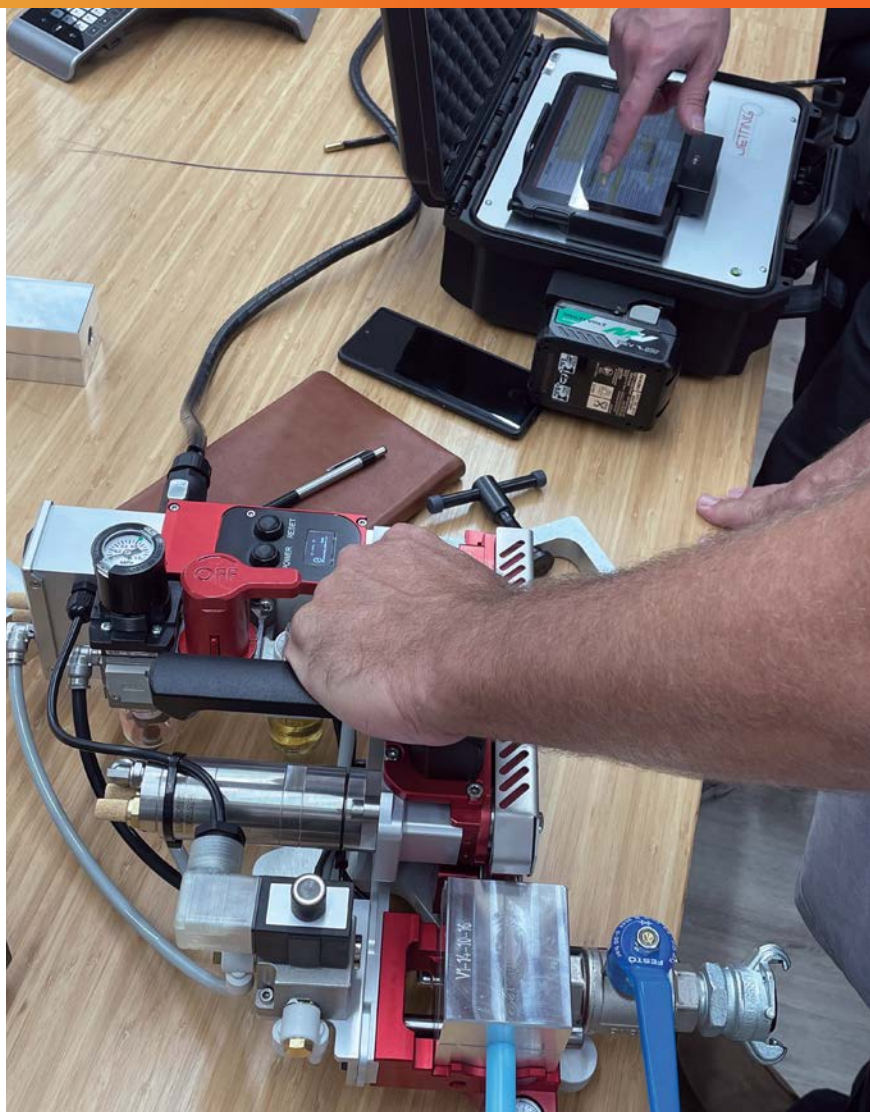
Continuing Education Credits (CECs)

15 BICSI CECs

Click or scan for detailed course information and upcoming training locations.

ABF for Installers and Technicians

Foundational/Intermediate



This four-day, foundational/intermediate level, instructor-led course focuses on air blown fiber (ABF) construction, installation, and maintenance practices.

Aimed at anyone working with air blown fiber, the course starts with a review of fiber basics before getting into the details of microduct pathways and installation, tooling and consumables, different types of air blown cable and units, setting up blowing machines, pre-blow tests, blowing of cable, and troubleshooting. The course explores not only point-to-point blowing, but special conditions blowing such as maintenance loops, overblowing, tandem, onward, and center blowing techniques.

Various interactive exercises will be incorporated into the two-day theory part of the course to prepare students for the more in-depth hands-on skills portion of the course that will follow on days three and four.

While the primary focus of the content is presented with the OSP in mind, the same principles equally apply to indoor applications such as MDU, hospitality, and commercial buildings and campuses

Audience: Installers, OSP technicians, field supervisors, project managers, and designers

Prerequisite: Fiber Foundations and either Fiber Optics 1-2-3 or OSP for Installers and Technicians is recommended, but not required.

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

Air Blown Fiber Workshop

Intermediate

This two-day course workshop focuses on installation, maintenance, and machine operation for those interested in learning the basics of air blown fiber (ABF) technology or that have recently purchased blowing equipment and want to learn how and why to use it. The primary focus of the content is aimed at OSP/FTTx installations; however, the basic principles can be applied equally to indoor applications and campus installations.

The course is a mix of classroom theory and hands-on skills exercises that relate to the learned theory. Subjects covered include an overview of air blown fiber technology consisting of terminology, components and equipment, best practices, setup, teardown, safety, communication, and various blowing techniques. In the hands-on skills exercises, attendees will gain practical experience with calculating fill ratios, duct and microduct joining, proper lubrication methods, duct cleaning and preparation tests, as well as machine setup and blowing microcables and fiber units.

This course will be taught by a field application engineer and is best suited to be delivered at a Light Brigade Academy or your facility.

Audience: Anyone in need of learning the basics of air-blown fiber technology.

Prerequisite: Any Light Brigade foundational level course such as Fiber Optics 1-2-3, Broadband Fiber Optic Technician Level 1, Fiber Optics for Utilities Level 1, or equivalent field experience.

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

Industrial & Harsh Environments

Foundational

Fiber Optics for Oil/Gas

This four-day instructor-led course teaches how to properly install and maintain fiber optic systems in petrochemical environments. Attendees will learn to splice, connectorize, test, and troubleshoot optical fiber networks to increase efficiency and reliability as well as reduce costs and downtime.

Audience: Those who design, install, test, or maintain fiber networks in petrochemical applications such as offshore drilling, pipelines, refineries, and processing plants

Prerequisite: Fiber Foundations is recommended, but not required.

Credentialing

ETA® International Fiber Optics Installer (FOI)
Valid for four years.

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

Fiber Optics for Mining Applications

This three-day instructor-led course teaches proper installation and maintenance of fiber optics systems in harsh underground and surface mine environments. Attendees will learn to splice, connectorize, test, and troubleshoot mining-based optical fiber networks to increase efficiency and reliability.

Audience: Anyone who designs, installs, tests, or maintains optical fiber networks in harsh or hazardous environments

Prerequisite: Fiber Foundations is recommended, but not required.

Credentialing

ETA® International Fiber Optics Installer (FOI)
Valid for four years.

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

Fiber Optics for Wireless

Foundational

This four-day instructor-led course provides the foundation needed to understand fiber optic applications and challenges in FTTA and small cell network applications. This course examines how fiber works and the fundamentals of different fibers, cables, connectors, and other hardware used in fiber optic communication networks. After learning the basics and nuances of fiber within wireless networks, attendees will build skills and best practices in hands-on labs for cable preparation, OTDR operation, and optical loss testing.

Audience: Installers, design engineers, project managers, field engineers, or anyone who is managing or installing fiber for a FTTA/cell site

Prerequisite: Fiber Foundations is recommended, but not required.

Credentialing

ETA® International Fiber to Any Antenna (FTAA)

Valid for four years.

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

"The instructor showed ample knowledge not only in the field of fiber optics but in all industries that may use it."

—James Stephens, Schlumberger

Fiber Optics for Utilities

Foundational | Intermediate | Advanced

Level 1 Technician

This three-day instructor-led course teaches basic fiber optic theory and the products used in fiber networks, focusing on the proper installation and maintenance of aerial and underground utility fiber optic systems. Hands-on skills training includes splicing, termination, testing, and troubleshooting to increase efficiency, reliability, and deployment speed in the field.

Audience: Installers and technicians in the utility telecom industry

Prerequisite: Fiber Foundations is recommended, but not required.

Level 2 Designer

This one-day course examines fiber optic design parameters, cable management alternatives, route planning, optical testing requirements, test results interpretation, and cable system design.

Audience: Those involved in the design, administration, operation, and supervision of utility-based fiber optic networks

Prerequisite: Any Light Brigade foundational course like Fiber Optics 1-2-3, online training, or equivalent field experience

Level 3 Adv. Designer

This one-day course focuses on DWDM systems and transmission impairments such as PMD and CD that limit the bandwidth and operating rates of fiber optic transmission systems. It covers xWDM theory and applications with a special emphasis on fiber dispersion limits and system design considerations.

Audience: Design engineers, or project managers

Prerequisite: Knowledge of fiber optic theory, plus field experience or formal training such as Fiber Optics for Utilities Level 2 Designer

Click or scan for detailed course information and upcoming training locations.

Credentialing

UTC Fiber Optic Professional

Valid for three years.

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

"The instructors were great at presenting the material. They showed us better ways to terminate."

—Travis Buenning, AEP

NEW!

Broadband Fiber Optic Technician
Level 1

Foundational

Our Broadband Fiber Optic Technician (BFOT) curriculum consists of three progressive levels of FTTH-focused broadband technician training courses, each building upon the previous level. This comprehensive learning track is aimed at field technicians, installers, designers, and engineers who are new to fiber or new to broadband FTTH. Attendees will learn not only the hands-on skills needed to complete an installation, but also the theoretical background behind those skills.

Each level offers ETA certification as well as digital credentialing through Credly. After completing all three BFOT levels and gaining their respective ETA credentials, the learner will earn the benchmark Light Brigade Certified Broadband Fiber Optic Technician (CBFOT®) designation.

Broadband Fiber Optic Technician Level 1

This foundational level instructor-led course is comprised of a two-day introduction to broadband FTTH theory and fiber followed by two days of hands-on skills training to apply that theory to practical tasks. Completing the prerequisite Fiber Foundations online short course will prepare learners to enter this class with a basic understanding of fiber optic principles.

Areas of focus are FTTH and PON methodologies, topologies, optical distribution networks, cable management and installation practices, testing and maintenance, optical cable types, connectorization, splicing methods, and safety best practices.

Click or scan for detailed course information and upcoming locations.

Credentialing

COMING SOON

ETA® International Broadband Installer (BFI)
Valid for four years.

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Sumitomo Fusion Splicing Fundamentals Digital Badge

Broadband Fiber Optic Technician
Level 2

Intermediate

This intermediate level course is comprised of four days of blended advanced broadband theory topics and practical hands-on skills to apply the theoretical principles into real-world field practices. It is aimed at those that have completed BFOT Level 1 and are ready to build upon that knowledge to gain a deeper and expanded mastery of FTTH broadband theory and skills.

Areas of focus are standards and codes, advanced topologies and methodologies, active and passive devices, ODN and FTTB installation, testing and troubleshooting, as well as expanding upon the fiber theory areas covered in BFOT Level 1.

Learners that complete this course will earn digital credentialing through Credly and will be eligible to sit for the ETA Broadband Technician (BFT) credential exam.

COMING SOON

Credentialing

ETA® International
Broadband Technician (BFT)
Valid for four years.

Light Brigade
Digital Badge
Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming locations.

"[The instructor]'s engagement and vast knowledge of fiber optic systems is unmatched and even taught someone with 10+ years experience multiple different things."

—Greg Abbott, Gibson Technical Services

Broadband Fiber Optic Technician
Level 3

Advanced

This advanced level instructor-led course is heavily focused on field-simulated hands-on skills. After a brief theory portion that explains the main areas of focus, learners will begin a three-day hands-on project that simulates a real-world installation from receiving the work order to completing a scaled installation to preparing documentation for a closeout package. There is heavy emphasis on repetitive practice in each area of focus to instill the confidence to lead nearly any installation project.

COMING SOON

This capstone course offers two track options for completion: Emergency Restoration and Air Blown Fiber. Each is its own four-day course, but they can be combined into a single five-day offering.

Learners that complete either track will earn Credly digital badges for Light Brigade course completion and Sumitomo Advanced Fusion Splicing Skills, as well as be eligible to sit for the ETA Broadband Fiber Technician Level 2 (BFT-2) certification exam.

Emergency Restoration Track

The emergency restoration track includes theory topics consisting of advanced outside plant, splicing, testing, and troubleshooting. Following the theory, learners will receive a project work order where they will spend one day splicing and routing high fiber count single fiber and ribbon fiber cables. The second day will consist of advanced testing and troubleshooting of the installed network using an optical time-domain reflectometer (OTDR) and light source/power meter set. On the third day, learners will perform emergency restorations of damaged cable and splice breaks, including retesting and preparing performance documentation for the project closeout.

Air Blown Fiber Track

The air blown fiber (ABF) track includes theory topics consisting of advanced outside plant, splicing, testing, and air blown fiber basics. Following the theory, learners will receive a project work order where they will spend one day preparing ABF duct and blowing cable to splice chambers. The second day will consist of splicing and routing high fiber count single fiber cables. On the third day, learners will perform advanced testing and troubleshooting of the installed network using an optical time-domain reflectometer (OTDR) and light source/power meter set and then prepare performance documentation for the project closeout.

Credentialing

ETA® International Broadband Technician 2 (BFT-A)
Valid for four years.

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Sumitomo Fusion Splicing Expert
Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming locations.

Advanced OSP Technician

Intermediate

This four-day instructor-led course features one day of classroom theory that delivers a quick refresher on fiber terminology and technology before diving into FTTx, emergency restoration, fiber characterization, and how the latest industry trends may impact field practices. This is followed by three days of hands-on skills training, where attendees build and troubleshoot a passive optical network from patch panel to patch panel through various splice closures with multiple drops.

Audience: Fiber optic technicians, team leaders, installers, outside plant maintenance staff, or staff engineers

Prerequisite: Any Light Brigade foundational course such as Fiber Optics 1-2-3 or equivalent field experience

Credentialing

ETA® International Fiber Optics Technician—Outside Plant (FOT-OSP)
Valid for four years.

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Continuing Education Credits (CECs)
26 BICSI CECs

Click or scan for detailed course information and upcoming training locations.

"I have now attended three classes taught by Light Brigade instructors and have enjoyed all of them. I have come out with more knowledge than going in. I look forward to more classes in the future."

—Michael Bass, Opelika Power Services

Splicing Deep Dive Workshop

Intermediate

This immersive instructor-led workshop focuses on the setup, operation, maintenance, and reporting aspects of fusion splicing. In this predominantly hands-on course, students will learn the proper usage of various types of fusion splicing equipment and best practices for preparing and splicing single fiber, ribbon fiber, and fusion splice connectors. Students will develop expertise through immersive hands-on practice exercises that go beyond typical exposure and manufacturer-hosted training. Other areas covered during the course include cable preparation, proper routing of splice trays, and documenting results.

This course will have a maximum ratio of eight (8) students per instructor. Although the class is fully equipped, students are encouraged to bring their own fusion splicing equipment to class.

Audience: Installers, ISP/OSP technicians, maintenance techs, field supervisors, or senior technicians

Prerequisite: Any Light Brigade foundational level course such as Fiber Optics 1-2-3, Broadband Fiber Optic Technician Level 1, Fiber Optics for Utilities Level 1, or equivalent field experience

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Sumitomo Advanced Fusion Splice Skills

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

OTDR Testing Deep Dive Workshop

Intermediate

This two-day instructor-led course focuses on field testing and troubleshooting fiber optic spans/links and explains the various types of equipment and tools needed for acceptance testing, documenting performance, and finding problems in a fiber physical plant. The emphasis is on understanding proper OTDR settings, overall testing, and evaluating results.

Audience: Installers, OSP technicians, maintenance techs, field supervisors, or senior technicians

Prerequisite: Any Light Brigade foundational level course such as Fiber Optics 1-2-3, Broadband Fiber Optic Technician Level 1, Fiber Optics for Utilities Level 1, or equivalent field experience

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Continuing Education Credits (CECs)

16 BICSI CECs

Click or scan for detailed course information and upcoming training locations.

Did you know – OTDR Testing Deep Dive and Emergency Restoration are often offered back-to-back in the same week?

"This course was very helpful in learning about the OTDR test equipment. Recommend to anyone using this equipment."

—Tom McLaughlin, Anoka County Highway Department

Emergency Restoration Workshop

Intermediate

This two-day instructor-led course focuses on fault location, troubleshooting, and test equipment with a heavy emphasis on hands-on skills training that simulates actual field restorations for both retrievable and non-retrievable slack scenarios. Attendees will gain the knowledge and skills necessary to help their organizations to better deal with outages.

Audience: Fiber optic technicians, engineers, or managers who work in the OSP environment

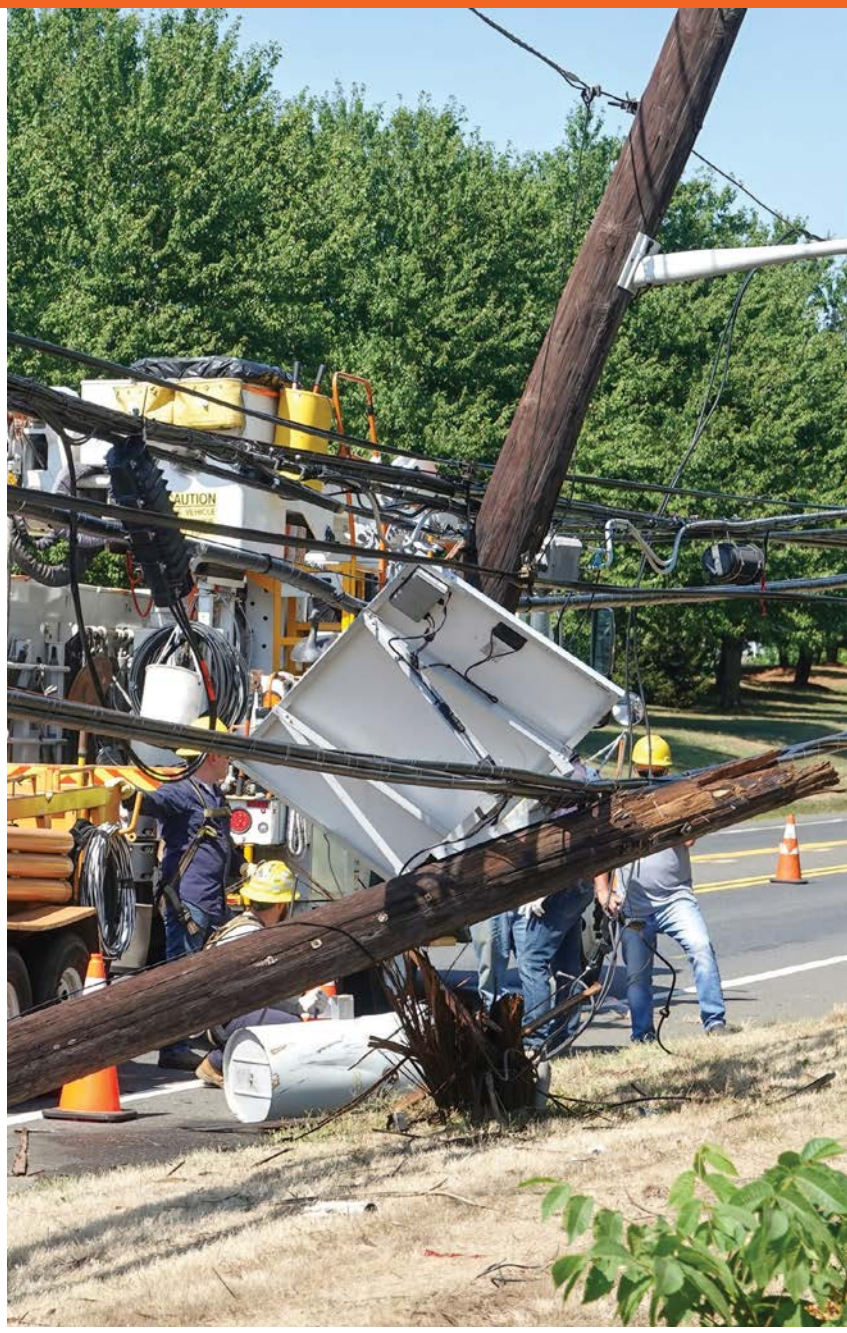
Prerequisite: Any Light Brigade foundational level course such as Fiber Optics 1-2-3, Broadband Fiber Optic Technician Level 1, Fiber Optics for Utilities Level 1, or equivalent field experience

Credentialing

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.



"I liked that you learn the theory then do the hands-on practical work. It helps cement the knowledge in your brain."

—Ben Peyton, Chatham Electric

Certified FTTH Professional

Intermediate

Our Certified Fiber to the Home Professional (CFHP) course is available as either a self-guided online study course or as in-person training. It is designed for those involved in deploying and maintaining FTTH and FTTB networks. Students will gain a broad base of knowledge and familiarity with FTTH architectures, network design, deployment technology, and operational skills.

Audience: Network designers, network planners, supervisors, and project managers

Prerequisite: Fiber Foundations is recommended, but not required.

CFHP Online Training

This interactive online course features 16 modules that offer a broad base of knowledge around FTTH architecture, network design, deployment technology, and operational skills. These topics include:

- Bandwidth and economic issues
- Evolution of FTTH networks
- Basic fiber optic theory
- FTTH architectures and topologies
- Network components
- Fiber and cable management
- Termination options
- Network design
- Loss budgeting
- Test equipment and procedures

Ideal for remote and international students looking for the comprehensive material found in our CFHP instructor-led course, without the added expense of travel.

CFHP Instructor-led Training

This two-day instructor-led course focuses on the fundamentals of FTTH architectures, network design, deployment technology, and operational skills. It covers everything from FTTx systems to components, including discussion around the business issues involved with planning FTTx deployments.

Credentialing

FiberBroadband ASSOCIATION

Fiber Broadband Association Certified Fiber to the Home Professional

Valid for three years.

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

"An invaluable addition to our knowledge base especially with future planning."

—Brian Perch, Cable & Wireless Barbados, Ltd.

FTTx OSP Design

Advanced

This three-day instructor-led course begins with fundamental fiber and network component information relating to FTTH network design considerations. The course then covers best practices for product selection and ideal placement for point-to-point, distributed, and centralized split network options.

This course is also offered as a remote instructor-led course five consecutive half-day sessions.

Audience: Outside plant and network engineers

Prerequisite: Knowledge of fiber theory and basic network engineering concepts

Click or scan for detailed course information and upcoming training locations.

Credentialing

Fiber Broadband Association FTTx OSP Design

Valid for three years.

Light Brigade Digital Badge

Complete this course and receive a Credly digital badge.

Continuing Education Credits (CECs)

22 BICSI CECs

"Well done! I will definitely be sending additional design engineers to future sessions."

—Matthew S., Crossroads Communications Solutions

Fiber Characterization

Intermediate

Fiber Characterization Workshop

This two-day instructor-led course focuses on the principles behind building and maintaining high-speed optical networks where key parameters such as polarization mode dispersion and chromatic dispersion must be calculated to evaluate system capabilities and potential upgrades to higher bit rates.

Audience: Those involved with equipment or systems where fiber characterization is needed to ensure proper operation of 10Gb/s or higher data rates

Prerequisite: Previous experience with fiber optics and knowledge of OTDR testing

Credentialing

Light Brigade Digital Badge
Complete this course and receive a Credly digital badge.

Click or scan for detailed course information and upcoming training locations.

Advanced

OTT Certified Fiber Characterization Engineer (CFCE)

This five-day instructor-led course focuses on mastering the tests required to verify that an infrastructure can support high data rate (10+ Gb/s) applications, Raman amplification, and extended wavelength ranges for CWDM and DWDM systems, as well as those typically required to prove that the fiber will operate properly when dark fiber contracts are signed.

Audience: OSP and network engineers, senior technicians, or designers

Prerequisite: Previous experience with fiber optics and knowledge of OTDR testing

Credentialing

OTT Certified Fiber Characterization Engineer

OTT Licensed and Delivered by
Fiber Insight

Click or scan for detailed course information and upcoming training locations.

Advanced

OTT Certified Optical Network Associate (CONA)

This five-day instructor-led course examines how to design, plan, and implement cost-effective, high-speed networks from single channel systems to multiple channel options using CWDM and DWDM. Attendees will work together on interactive design projects to establish requirements for proper system performance and determine how the network can be affected by the properties of the physical infrastructure.

Audience: Outside plant and network engineers

Prerequisite: Knowledge of fiber theory and basic network engineering concepts

Credentialing

OTT Certified Optical Network Associate

OTT Licensed and Delivered by **Fiber Insight**

Click or scan for detailed course information and upcoming training locations.

OTT Certified Optical Network Engineer (CONE)

Learn to meet the fast-evolving challenges of increasing capacity, reach, and flexibility, controlling latency, migrating to open/interoperable systems, and providing quality of service while keeping costs under control and reducing power consumption. Learn how the combination of coherent transmission and digital signal processing has transformed optical communications at the higher data rates of 100 to 800 Gb/s and about the changes necessary for DWDM systems to operate efficiently at data rates of 400 Gb/s and above.

Understand how a mix of optical and electronic technologies is used to overcome limitations, and the role of SDN and its implications for facilitating open line systems, ROADMs, and white box solutions. Appreciate the fundamental limitations that apply and the trade-offs and compromises necessary to make strategic decisions about the long-term plans for your network.

Audience: Anyone deploying advanced communication networks of 100 Gb/s and above. Typical roles include network designers, planners, network engineers and managers, and strategic network managers.

Prerequisite: OTT Certified Optical Network Associate (CONA) certification.

Credentialing

OTT Certified Optical Network Engineer

IEEE credits available for additional fee.

OTT Licensed and Delivered by **Fiber Insight**

Click or scan for detailed course information and upcoming training locations.

Online Training

Introductory

Fiber Foundations

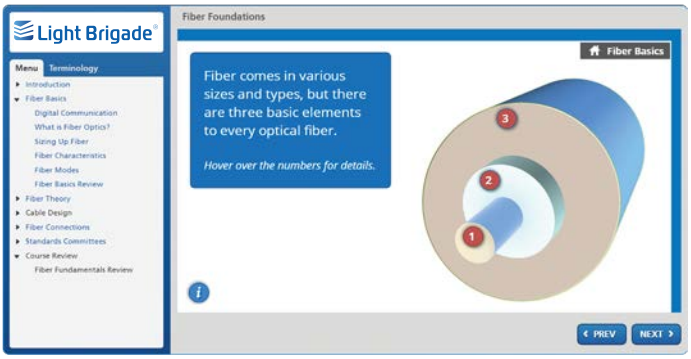
Whether a new employee at an organization that manufactures fiber related products, or a technician moving over from the copper world, this short e-course will introduce technical terminology with accurate, easy-to-understand language.

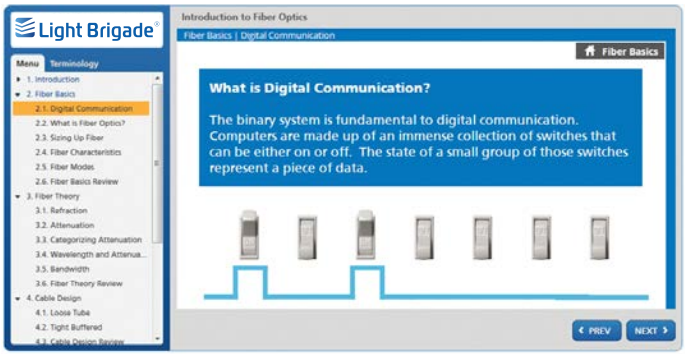
Perfect for those new to the industry, this interactive online course is the ideal first step into fiber optics. This overview of basic theory, terminology, and key products is designed to provide a baseline on which to build more in-depth training.

Each topic in Fiber Foundations is explained through easy-to-understand definitions that are illustrated through helpful examples and animations. Students will gain a basic familiarity with optical fiber and its foundational concepts, then reinforce that knowledge through a short review session.

Fiber Foundations is self-paced, and should take approximately two hours to complete.

Eligible for 1 BICSI CEC.





Click or scan for detailed course and registration information.

Certified Fiber to the Home Professional Online Training Program

Learn more on page 12.

Online Training

Introductory

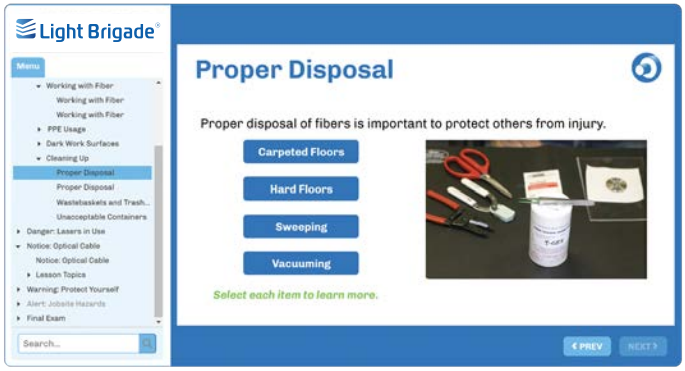
Fiber Optic Safety

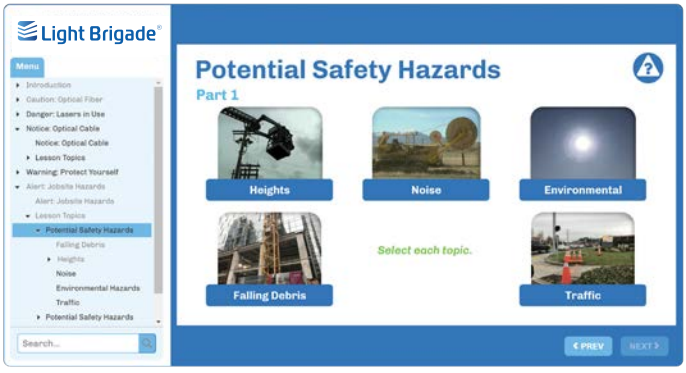
Complete Online Safety Training for the Workforce

When strong health and safety practices become part of the fabric of your organization, everyone wins. Create a positive safety culture by ensuring your employees are trained to follow safety procedures and identify safety concerns unique to fiber optics. Fiber optic professionals can be exposed to a wide variety of hazards — from the glass fibers themselves to chemicals used in cleaners and adhesives, to the sharp tools used to prepare cables for termination. They often encounter heavy equipment and power tools and may be in proximity to high voltage and traffic hazards during cable placement and system restoration.

This course provides recommendations for safe practices when working with optical fibers and cables. It's a solid foundation for ensuring your workforce remains healthy and productive and a great addition to your current safety program. Creating a safety-first culture helps to ensure your workforce is not part of painful statistics involving injuries and costly litigation.

Click or scan for detailed course and registration information.



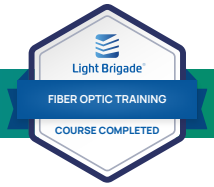


Digital Badging

Learn it. Earn it. Share it.

We understand that communicating your credentials in an ever-expanding online environment can be challenging. That is why we have partnered with Credly to provide Light Brigade accredited learners an easy way to share their fiber optic credentials. A Light Brigade digital badge shows the world you have earned the knowledge and skills from a respected, credible source. Representing your skills as a badge gives you a way to share your abilities online in a way that is simple, trusted, and can be easily verified in real-time.

Look for badge icons on our courses to see what you can earn!



Successful completion of a Light Brigade course generates an invitation to accept a Credly digital badge. Once you accept your digital badge, you can broadcast it to social media, or add it to your email signature, digital resume, or anywhere else that accepts HTML like web pages and blogs. Your digital badge contains verified metadata that describes your qualifications and the process required to earn them.

After your class is complete, you will receive an email from Credly

Share your success on social media and add it to your email signature

Click the link in the email to create your Credly account and accept your digital badge(s)

Download your printable Certificate of Completion in PDF format

All of your credentials will be stored in your digital wallet for easy retrieval

Attend other Light Brigade classes to earn an Expert Shield

Certifications & Discounts

Independent Certifications

Many of our courses are eligible for independent certification through third-party industry organizations and groups. These certifications show competency in hands-on skills and technical knowledge.

Third-party Credits

BICSI Continuing Education Credits (CECs) and NCTI Master Technician credits are available for many Light Brigade training courses.

Sumitomo Fusion Splicing Digital Credentials

Light Brigade and Sumitomo Electric Lightwave have collaborated to develop a series of comprehensive fusion splicing digital credential badges. These three structured skills competency assessments ensure that students leave class with a firm understanding of splicer technology.

- **Fusion Splicing Fundamentals** is available through Fiber Optics 1-2-3 and Broadband Fiber Optic Technician Level 1
- **Advanced Fusion Splice Skills** is available through Splicing Deep Dive Workshop
- **Expert Fusion Splicing Skills** is available through Broadband Fiber Optic Technician Level 3

Training Discounts

Light Brigade offers a variety of discounts and special pricing. Look for the green tag icon for courses that are eligible for any of the discounts below:

- 10% discount for four or more attendees from the same organization.
- 10% discount for Low Voltage Nation Gold Members.
- 15% discount for UTC and FBA members.
- 10% discount for previous attendees of our three or four-day courses. Good for four years!

Note: Discounts cannot be combined.
CONA and CFCE courses are only eligible for the 10% discount for four or more attendees. Other discounts do not apply.

Early Bird Pricing

Receive up to $150 off the list price by registering more than 45 days prior to the start of class. Classes booked 90 days or less will be charged the full list price. Book early and save!

Combine Early Bird Pricing with one of our many discounts for additional savings!

Our Training at Your Location

Customized Training

Don't see exactly what you need?

Need training on something more unique or specific to your business?

Our subject matter experts can work with you to develop a course that meets your precise needs and then deliver it at your location. Whether you require small or large changes, we have the experts who can give your team the knowledge and skills needed to get the job done right.

Why Train At Your Location?

- **Convenience**
  Schedule training exactly where and when you need it.
- **Cost Savings**
  Save travel time and expenses by bringing training to your facility.
- **Expertise**
  Learn on your own equipment or use our extensive inventory of equipment and supplies. You decide!
- **Flexibility**
  Courses can be scheduled throughout the year and delivered at different company locations.

Light Brigade®

For training, tools, or equipment:
1 (206) 575-0404 • 1 (800) 451-7128 • lightbrigade.com

Fiber Optic Blowing Machines

TriggAIR Fiber Blowing Machine

For Cable 0.8-3mm / Duct 3mm, 5mm, 7mm, 8mm

This handheld fiber blowing unit is optimized for FTTx installation of blown fiber and 0.8mm to 3mm micro/nano cables from into 3mm, 5mm, 7mm, and 8mm ducts. TriggAIR is battery powered and offers adjustable clamping force.

V0 HD Fiber Blowing Machine

For Cable 0.8-6.5mm / Duct 3-16mm

This electrically-operated fiber blowing unit is optimized for FTTx installation of blown fiber and micro/nano cables from 0.8mm to 6.5mm into 3mm to 16mm ducts. The V0 HD is extremely compact and can be operated directly from its case.

V2 Fiber Blowing Machine

For Cable 2.4-16mm / Duct 7-50mm

This pneumatic blowing machine features a unique joystick controller for optimal speed control during installation and can be configured for 2.4mm to 16mm blown fiber cable and 7mm to 50mm fiber duct. Compact and easy to maintain.

V3-NE Fiber Blowing Machine

For Cable 4-40mm / Duct 10-63mm

This pneumatic blowing machine can install cables from 4mm to 40mm in ducts from 10mm to 63mm. The unique joystick offers forward and reverse direction control, while the agile motors provide powerful pushing force of up to 1800N.

JetLogger Documentation System

For V2 and V3 Fiber Blowing Machines

The JetLogger is a blown fiber documentation system for the installer who needs an efficient and professional electronic documentation of the cable blowing process. The JetLogger can be incorporated with V2 and V3 fiber blowing machines.

Fiber Optic Tooling and Equipment

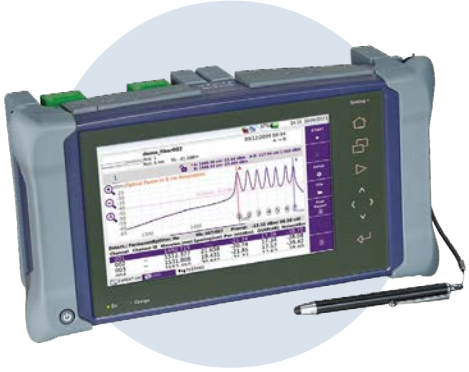
Tools

Tool Kits

Cleaning & Consumables

Splicing & Accessories

Test & Inspection



OTDR & Fiber Characterization

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Top reasons to join the Light Brigade family

1 Expertise

We know fiber optics inside and out. It's all we do.

2 Tools, Equipment & Accessories

We offer comprehensive solutions designed for field use.

Learn More

3 Partnerships

We work with the leading suppliers and industry associations.

AFL · Berk-Tek a LEVITON company · EXFO · fiber optic center · FITEL · FLUKE networks · Fujikura · exatronic · JETTING · JONARD TOOLS · MILLER · SENKO Advanced Components · SUMITOMO ELECTRIC LIGHTWAVE · USCONEC · VIAVI

We offer our attendees lifetime technical support as well as Alumni Benefits!

Save 5% on splicers with 'SPLICER-05' • Save 10% on additional products with 'ATTENDEE10'*

***First course must be completed in full to be eligible for discount.**

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Light Brigade®

Light Brigade
835 Central Ave N.
Suite D-132
Kent, WA 98032

> Amazing instructors who explained everything to the fullest. Best class I have ever done for sure.
>
> **- Robert Keller, City of Fairfax**

(206) 575-0404
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