



Introduction to Telecommunications Technologies



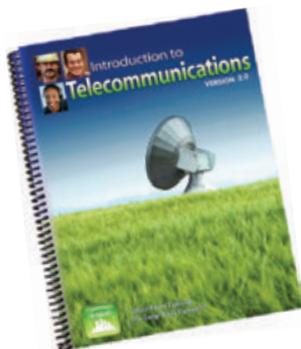
This introductory course teaches all aspects of connectivity methods in today's world. Students learn the history, theory, and transmission mediums of communications, as well as Smart technologies found in homes and businesses. This course provides students with the fundamental background and skill sets required to pursue any technology based job.

During this 40 hour course students apply their knowledge by using C-Tech's Interactive Telecommunications Board. This training aid provides students with the hands-on experience required to assemble, test, and troubleshoot audio, video, infrared, wired, and wireless connectivity systems.

Student engagement is key to retention; thus, our programs place each student in real-world scenarios as they work in collaborative project based groups.

As with all C-Tech programs, students who successfully complete this course will receive an Industry Recognized Certification better preparing them to enter the workforce. Additionally, students will also receive Continuing Education Credits which transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed by one or more leading manufacturers or suppliers for content and applicability.

Student Manual



Interactive Telecommunications Board



DAVE Transmitter and Receiver, known good and bad cables and Student Personal Optical Testers (SPOTs)



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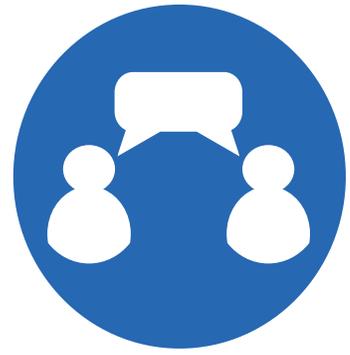
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Aligned to state standards



Completely portable equipment



Project-based and cooperative learning environment



Authentic tools and test devices



Prepares students for the workforce



Completely turnkey

Our Train the Trainer Model provides instructors with the technical skills needed to become an effective teacher of our programs.

- No previous knowledge of telecommunications technology is required
- Instructors earn their own certification as well as ongoing Professional Development credits

Additionally, students will also receive Continuing Education Credits that transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed and approved by leading manufacturers for relevant content and applicability.

The image shows a certificate from C-TECH (Telecommunications Technologies) that certifies an individual as having achieved certification in Telecommunications Technologies for the Introduction to Telecommunications Curriculum. Two callout boxes highlight accreditation details: CEDIA CEU Provider (12 CEUs, Course # 650) and Bicsi Continuing Education Credit Provider (30 CEUs, Event ID: 1017).



Introduction to Network Cabling Copper-Based Systems



Introduction to Network Cabling Copper-Based Systems provides students with the skills and knowledge for immediate employment as entry-level connectivity technicians. Rapidly growing industries provide the connectivity for our Communications, Entertainment and Security Systems, as well as Industrial and Smart Home automated systems. Graduates are versed in the science behind these systems and can install, test, and troubleshoot day one on the job. They are also instructed in job site protocols and safety, including tool, ladder and injury protection.

This course is based on current industry standards as well as best practices and was created with guidance from the industry. Our educational professionals have developed a true CTE program that is cross-curricular and career-based.

During this 40-hour course, participants will acquire the following skills:

- Residential and Commercial Topologies based on the NEC and Standards
- The National Electric Code and its applications to connected systems
- The ability to use a wide variety of meters, validation testers and network qualifiers
- Network troubleshooting, including Wi-Fi and wired networks
- Types and applications of both passive and active PoE systems
- Safety applications including PPE, ladders, fall prevention, tool usage and lockouts



**Student
Manual**

ACT Unit with DAVE Testers



**The Copper
Systems Trainer**



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Benefits of Copper 4.0 Program



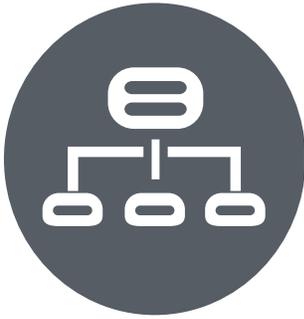
Commercial and residential cabling standards



Emphasizes critical thinking and problem solving



Written at a 7th Grade reading level



Introduction to networking (wired and wireless)



Completely turnkey



Aligned to state standards

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- Instructors earn their own certification as well as ongoing professional development credits



Additionally, students will also receive continuing education credits that transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed and approved by leading manufacturers for relevant content and applicability.



Introduction to Network Cabling Fiber Optic-Based Systems



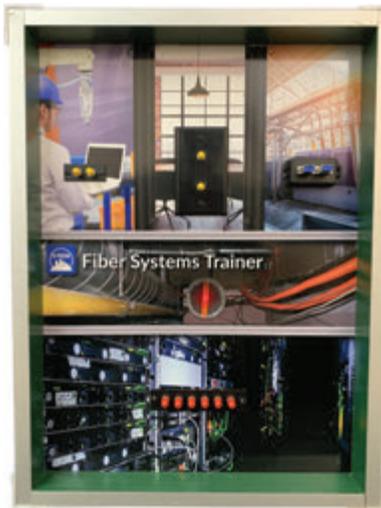
Introduction to Network Cabling Fiber Optic - Based Systems provides students with the theoretical and hands-on knowledge of Fiber Optics. Students learn the basics of cable termination, testing, and troubleshooting while using high-tech analysis equipment.

During this 30 hour course, students learn the science of light and optics. Our hands-on activities give students the experience needed to become entry-level technicians in the Fiber Optics Industry.

Students learn the theory behind fiber optic transmission systems throughout this course and are placed in real-world scenarios emphasizing critical thinking, problem-solving, and proper cable construction. Each activity utilizes project-based learning and collabora-

tive team-building through the Fiber Systems Trainer (FST). Other topics in this course are cabling standards, industry best practices, cable routing and placement, and optical loss budgeting.

As with all C-Tech programs, students who successfully complete this course will receive an Industry Recognized Certification, better preparing them to enter the workforce. Additionally, students will also earn Continuing Education Credits which transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed by leading industry manufacturers for content and applicability.



Fiber Systems Trainer



Full-Color Manuals



Continuous Support



Instructor Workstation



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In-demand cabling skills



Commercial and residential cabling standards



Cross curricular skill sets



Authentic tools and test devices



Project based hands-on learning



Prepare students for the workforce

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Advanced Systems Integration: Grounding & Bonding

Copper Systems



Grounding & Bonding provides additional skill sets that give students a complete understanding of external and internal connectivity of data, voice and video systems. Students are trained to properly interpret the National Electric Code, as well as the responsibilities of the technician to correctly ground and bond a connectivity system.

In this 10 hour course, students are taught to connect a building's grounding infrastructure, ensuring both life safety and maximum system performance. By the end of this course, students will have the knowledge to correctly install primary and secondary protection devices on telecommunications lines and understand all responsibilities of electrical and telecommunications technicians.

As with all the C-Tech programs, students who successfully complete this course will receive an Industry Recognized Certification better preparing them to enter the workforce. Additionally, students will also receive Continuing Education Credits which transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed by one or more leading manufacturers or suppliers for content and applicability.

Grounding Interconnection Trainer

Instructor Manual



Student Workstation



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Commercial and residential cabling standards



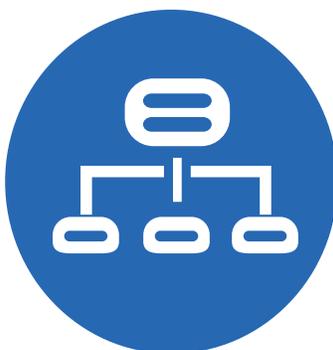
Safety techniques and procedures



Written at a 7th Grade reading level



Aligns with National Electric Code



Teaches how to connect copper lines to a network



Additional career opportunities

Our Train the Trainer Model provides instructors with the technical skills needed to become an effective teacher of our programs.

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- Instructors earn their own certification as well as ongoing Professional Development credits

Additionally, students will also receive Continuing Education Credits that transform an entry-level job into a full career pathway. Each Industry Recognized Certification program has been reviewed and approved by leading manufacturers for relevant content and applicability.





Wireless Systems: Coverage and Capacity



Applied Systems Integration: Wireless Systems: Coverage and Capacity is a 15-hour investigation into wireless systems communications. This hands-on interactive course provides additional skill sets that will give your students a complete understanding of wireless systems, equipment connectivity and radio frequency transmission and reception principles. Students are placed in the role of a technician and trained to install, test, and troubleshoot faults within RF wireless systems. A large portion of this course is dedicated to Digital Antenna Systems (DAS) which are commonly installed in large venues such as Airports, Stadiums, and corporate office buildings to provide the necessary cellular/data coverage and capacity. Anytime a cellular/wireless device is used it communicates by way Radio Frequency back through a series of antennas and distribution devices back to a carrier.

With thousands of wireless systems being installed weekly, and the rolling-out of 5G networks, there is a high demand for graduates with these skills. The growing Internet of Things is adding to the need for workers as Connectivity between devices grows.

Federal Communications Commission Standards, Digital Antenna Systems Configurations, best practices for antenna placement, Drilling/Mounting equipment on different building materials, and how to conduct a site survey are all covered. At the end of this course students will have the knowledge to install, configure, test, and troubleshoot all aspects of wireless systems.



Student Manual



Student Workstation



Wireless Activity Trainer



Student Activity Panel



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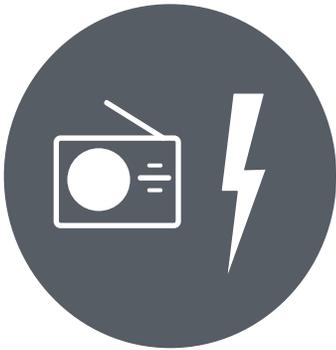
Tool Usage and Safety



The role of Federal Communications Commission (FCC) Standards



Wireless and Distributed Antenna Systems



Principles of Energy and Radio Frequency



Signal distribution Configuration



Signal distribution, configuration installation, testing and troubleshooting

Online Training and Support

- No previous knowledge radio frequency technology required
- Skills based activities enhance employment opportunities
- Enhance your existing career offerings



Instructor Transmitter



Student Receiver

Instructor and student wireless interactivities.





Connecting to Business



Approach any job interview with confidence! Connecting to Business is an overview of techniques for job placement and retention. This program provides information that is specific to the Telecommunications Industry and is designed utilizing our extensive experience working with Industry leaders. This course is ideal for students who have completed any of C-Tech's programs and are looking for career opportunities. The course consists of two different guidebooks for students and teachers, as well as job developers.

as develop an effective resume, trace typical job progression, and identify where potential employers are located. Students also learn time management techniques, customer service skills, and tools to sharpen their professional writing skills.

Connecting to Business Job Developers Guide is designed to assist individuals in charge of placing students into careers. It includes information on effective training programs, job search protocols, and techniques on how to approach local employers. This guide highlights the market and defines the in-demand skill sets employers require.

Connecting to Business Telecommunications Employability Guide helps students set career goals, both immediate and long-term, as well



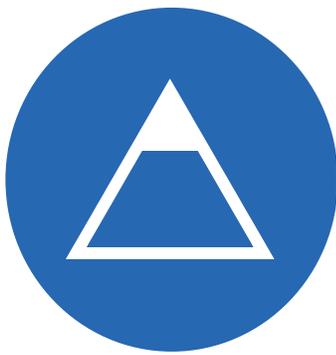
Job Developer's Guide

Student Manual



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Capstone programs for all C-Tech programs



Increases job placement results



Written at a 7th grade reading level



Teaches time management and goal setting



Interview and resume techniques



Builds confidence

