

Installer Technician

OVERVIEW

Installer Technician focuses on maintaining reliability in the installed drop system. The DC electronic theory provides the foundation for understanding decibels, signal leakage detection and troubleshooting techniques. A basic mathematics review helps the student with equations and formulas relating to basic electronic theory and signal level. Also covered are topics on the features, components, care, maintenance and use of signal level meters and signal leakage detectors, providing essential information for troubleshooting customer premises problems. The course concludes with the basic characteristics and functions of line extender amplifiers. The recommended prerequisite for this course is Jones/NCTI's Installer course.

Delivery Options:

📖 Learning takes place using a textbook. Lesson and final exams are taken online.

Completion Time:

Varies based on the student's self-study pace, however, the maximum time allowed is six months from enrollment.

BENEFITS

Upon completion students will:

- » correctly troubleshoot and maintain the installed drop system
- » utilize mathematical equations and formulas related to installed cable systems
- » identify, locate and repair common problems from premises to the tap
- » use this course to help prepare for SCTE's Broadband Premises Specialist and Broadband Distribution Specialist certifications, as well as the BPS Video endorsement
- » earn four hours of college credit
- » receive an industry-recognized Jones/NCTI™ certificate of graduation
- » gain 12 BICSI continuing education credits for RCDD, RCDD/LAN, RCDD/OSP, Residential Installer, Installer Level 2 and Technician

Ideal for:

Technical personnel, including:

- » installers
- » maintenance technicians

COURSE OBJECTIVES

Upon completing this course, students will be able to:

1. understand and apply basic DC electronic theory, perform Ohm's law calculations and discuss relevant broadband cable applications
2. perform basic cable math calculations
3. explain dB and dBmV fundamentals and broadband cable applications and perform gain and loss calculations
4. operate and maintain installer-type signal level meters and signal leakage detection equipment
5. identify, locate and repair common problems from the customer premises equipment to the tap in both single dwellings and MDUs

(Continued)

ENHANCEMENT

- » Now including information on digital technologies

RELATED COURSES

Students completing this course should then enroll in:

- » Service Technician
- » Return Path Operations
- » System Technician
- » Fiber Installation and Activation
- » Fiber Testing and Maintenance
- » Advanced Technician
- » Effective Supervision

TRAINING FEATURES

- » Knowledge-based, broadband and job-specific content
- » Highly illustrated and easy to read course materials
- » Curriculum advising
- » 24/7 lesson feedback and progress monitoring at www.jonesncti.com
- » online testing

Visit www.jonesncti.com/coursepolicy.htm for important information on computer hardware/software requirements and student-to-student transfer and extension limitations



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COURSE OBJECTIVES *(Continued)*

6. understand the theory of operation of line extender amplifiers and explain the functions of amplifier passives and actives
7. identify the role of national and international organizations in establishing and implementing telecommunications standards

COURSE OUTLINE

- 1. Maintaining Drop System Reliability**
Delivering quality service and troubleshooting the drop
- 2. Exploring Electrons and Electricity**
Establishing electron characteristics, identifying element categories, understanding electron current flow, electric current, electrical force and using units of electrical measurement
- 3. Understanding Magnetism and Electromagnetism**
Looking at the history and theory of magnetism and electromagnetism and exploring magnetic and electromagnetic applications
- 4. Using Positive and Negative Numbers**
Reviewing positive and negative numbers
- 5. Using Common and Decimal Fractions**
Understanding common and decimal fractions
- 6. Using Equations and Powers of Numbers**
Using equations and powers of numbers
- 7. Understanding Electrical Circuits**
Understanding circuit essentials, differentiating current flow conditions, defining current types and understanding circuit graphics
- 8. Understanding Resistance**
Understanding, changing and controlling resistance
- 9. Using Ohm's Law for Power and Energy**
Describing basic electrical characteristics, working with Ohm's law, solving power equations and solving an energy equation
- 10. DC Series Circuits**
Circuit requirements, characteristics and calculations
- 11. Understanding Decibels**
Reviewing the history of decibels, making comparisons between two values, explaining the concept of bels and decibels and understanding power and voltage ratios
- 12. Using dB and dBmV**
Working with dBmV and performing signal level calculations
- 13. Testing Signal Levels**
Understanding broadband signals, identifying SLM features and components, maintaining SLMs, testing and troubleshooting
- 14. Detecting Signal Leakage**
Reviewing signal leakage basics, selecting and operating signal leakage detection equipment and eliminating signal leakage
- 15. Troubleshooting Basic TV Problems**
Examining AC input voltage problems, correcting a hot chassis condition, verifying proper RF input levels, fixing impedance mismatch, recognizing incorrect function settings, isolating picture quality problems and fixing stereo TV problems
- 16. Troubleshooting Drop Grounding, Traps and Taps**
Recognizing and correcting grounding system, trap and tap problems
- 17. Troubleshooting Hum Modulation and Flashing Pictures**
Recognizing and correcting hum and flashing problems
- 18. Troubleshooting Drop Ingress**
Recognizing ingress, identifying possible causes of drop-related ingress and isolating the cause of ingress
- 19. Troubleshooting Beats and Snowy Pictures**
Troubleshooting active beats and troubleshooting snowy pictures
- 20. Troubleshooting Picture Impairments in an MDU**
Troubleshooting picture impairments inside the MDU, at the lock box, between the wall plate and the lock box and at the hot tap
- 21. Line Extender Amplifier Operation**
Examining the amplifier housing, line extender AC/DC powering systems, RF passives and controls, the amplifier module and classifying line extender specifications
- 22. Analyzing Analog TV Pictures**
Recognizing basic picture distortions, understanding basic sound distortions and dealing with other sound and picture problems
- 23. Telecommunications Standards and Electronics**
Identifying telecommunications standards, understanding electronic communication and outlining communication system parameters



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