

ATCW-1040: BASIC INFORMATION SYSTEMS

Cuyahoga Community College

Viewing: ATCW-1040 : Basic Information Systems

Academic Term:

Spring 2019

Subject Code

ATCW - AIT-Communication Workers

Course Number:

1040

Title:

Basic Information Systems

Catalog Description:

Certification course covering skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of cable systems in conjunction with industry standards will be covered.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

Departmental approval: admission into the CWA apprenticeship program.

Outcomes

Course Outcome(s):

I. Discuss the skills, preparations, tools and equipment required for the information transport industry proficiency certification.

Objective(s):

1. Identify the skills required for industry certification.
2. Define terms related to information transport systems.
3. List the tools used for systems installation and testing.
4. Differentiate between tools for installation and equipment testing.
5. Explain the required proficiency testing process required for industry certification.

Course Outcome(s):

II. Discuss the transmission mediums, fundamentals and safety precautions used in conjunction with industry codes of standards required for structured cable systems installations.

Objective(s):

1. Discuss the code of conduct mandated by the industry to maintain professionalism on the work site.
2. Describe the different transmission mediums used in cabling systems.
3. Identify the transmission fundamentals required to match correct mediums with signal types.
4. List the worker protection safety regulations required for cable systems installations.
5. Identify industry codes and standards related to information transport.

Course Outcome(s):

III. Demonstrate the ability to install cable systems with respect to prescribed industry methods and procedures.

Objective(s):

1. Perform installation site surveys and develop appropriate job plans.
 2. Discuss the prescribed requirements required to properly pull and position wire for installations.
 3. Discuss manufacturers' termination requirements to comply with testing parameters.
 4. Discuss cable testing and troubleshooting requirements for proper installation verification.
 5. Differentiate between retrofit, upgrades and moves, adds and changes (MAC).
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Course Outcome(s):

IV. Discuss the purpose of administrative tasks for cabling infrastructure and identify the respective duties.

Objective(s):

1. List the administrative tasks related to cabling infrastructure.
 2. Define the terms used with respect to structured cabling systems.
 3. State the scope of proper labeling.
 4. Discuss the procedures that are to be followed for recordkeeping.
 5. Differentiate between operational and maintenance benefits.
 6. Explain the procedures to be followed for cable testing recordkeeping.
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Methods of Evaluation:

1. Quizzes
2. Tests
3. Class participation

Course Content Outline:

1. Industry proficiency certification
 - a. Skill
 - i. Wire installation
 - ii. Terminations
 - iii. Sizes and capability
 - iv. Splicing
 - v. Color code
 - b. Terminology
 - i. Color code
 - ii. Tips and rings
 - iii. Punch down
 - iv. Gauge
 - v. Demarcation
 - vi. Hanger
 - vii. Conduit
 - viii. End point
 - ix. Termination block
 - x. Rack
 - c. Tools
 - i. Punch
 - ii. Snips
 - iii. Fish tape
 - iv. Needle nose
 - v. Lineman pliers
 - d. Testing tools
 - i. Time domain reflectometer TDR
 - ii. Optical
 - iii. Toner generator/continuity tester
 - iv. Loop tester
 - v. Multimeter
 - vi. Butt set
 - e. Testing process

- i. Industry standards
 - ii. Compliance testing
 - iii. Continuing education
- 2. Transmission mediums, fundamentals and safety
 - a. Mediums
 - i. Signal content
 - 1. Data
 - 2. Voice
 - 3. Voltage
 - ii. Pathway
 - 1. Twisted pair
 - 2. Coaxial copper
 - 3. Fiber optic
 - 4. Wireless
 - b. Fundamentals
 - i. Medium selection
 - ii. Signal type
 - iii. Customer requests
 - iv. Industry standards
 - v. Environmental
 - c. Safety regulations
 - i. Occupational Safety and Health Administration (OSHA)
 - ii. National Electrical Code (NEC)
 - iii. Local ordinances
 - iv. Customer policies
 - d. Codes and standards
 - e. Code of conduct
 - i. Personal professionalism
 - ii. Union ethics
 - iii. Customer relations
- 3. Installation
 - a. Site survey
 - i. Location identification
 - ii. Customer needs
 - iii. Pathways
 - iv. Penetrations
 - v. Suspensions
 - vi. Medium identification
 - vii. Height requirements
 - viii. Terminations
 - ix. Conduit versus open air
 - x. Usage
 - b. Prescribed requirements
 - i. Specifications
 - ii. Job expectations
 - c. Terminations
 - i. Industry standards
 - ii. Customer needs
 - d. Troubleshooting
 - i. Continuity
 - ii. Voltage
 - iii. Pathways
 - iv. Manufacturer warranty
 - v. Performance
 - e. Retrofit, upgrades and MAC
- 4. Administrative tasks
 - a. Terminology
 - i. As builts
 - ii. Downloads

- iii. Data log
- iv. Bill of material
- v. Customer report
- vi. Daily report
- vii. On the job time recordkeeping
- viii. Structured cabling system
- b. Tasks
 - i. Labeling
 - ii. Bill of material
 - iii. Documentation
 - iv. Reports
 - v. Test data
- c. Labeling scope
 - i. Component identification
 - ii. Pathways
 - iii. Equipment
- d. Recordkeeping procedure
 - i. Manual
 - ii. Computer based
 - iii. Maintenance
 - iv. MAC
- e. Benefits
 - i. Operational
 - 1. MAC
 - 2. As built
 - ii. Maintenance
 - 1. Repairs
 - 2. Tests
 - 3. Damage locator
- f. Cable testing recordkeeping
 - i. Simple
 - ii. Complex
 - iii. End user
 - iv. Compliance
 - v. Maintenance
 - vi. Manufacturer specification

Resources

BICSI. *Telecommunications Cabling Installation IN101*. V 6.1. BICSI Tampa, Florida, 2012.

BICSI. *Information Technology Systems Installation, ITSIMM*. 6th Edition. BICSI Tampa, Florida, 2012.

Independent Electrical Contractors Chesapeake and Western Electrical Contractors Association. *Electrical Pre-Apprenticeship Workforce Development*. 2013 Edition. Cengage Learning Clifton Park, NY, 2013.

Resources Other

www.uniquefirestop.com (<http://www.uniquefirestop.com>)

www.cablinginstall.com

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