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### COURSE INFORMATION

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Alternate Title: Analog and Digital Telephony

Description:

10-451-204 ANALOG AND DIGITAL TELEPHONY ...develops the knowledge and understanding of Analog and Digital signals with respect to communications.

Instructional Level: 10

Total Credits: 2

Total Hours: 54

### COURSE HISTORY

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Status: Active

Active Date: 5/23/2021

Last Revision Date: 9/15/2023

Revised By: Kristina Wendricks (15002977)

Last Approval Date: 9/15/2023

Approved By: Kristina Wendricks (15002977)

### COURSE COMPETENCIES

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#### 1. Discuss safety procedures and describe the difference between analog and digital data transmissions.

Status: Active

Assessment Strategies

- 1.1. Discussion
- 1.2. Quiz

Criteria

Learners will be successful when they are able to:

- 1.1. Identify potential hazards on the worksite and how to mitigate them
- 1.2. Use proper PPE for permits cabling
- 1.3. Use pedestrian control devices in work areas
- 1.4. Identify the characteristics of analog communications (continuous waveforms)
- 1.5. Identify the characteristics of digital communications (binary data)

Learning Objectives

- 1.a. Discuss safety procedures and hazards inside of building as it relates to telecommunications.
- 1.b. Discuss the differences between analog and digital communications.

**2. Identify different types of tools that are used and how to properly to handle the tools.**

Status: Active

Assessment Strategies

- 2.1. Discussion
- 2.2. Quiz
- 2.3. Observations

Criteria

Learners will be successful when they are able to:

- 2.1. Use cable entry tools
- 2.2. Use splicing tools
- 2.3. Identify power tools commonly used in the telecommunications Industry

Learning Objectives

- 2.a. Identify hand tools and how to properly use them.
- 2.b. Identify power tools and how to properly use them.

**3. Identify different parts, components, connectors of premise telecommunications installation.**

Status: Active

Assessment Strategies

- 3.1. Discussion
- 3.2. Observations
- 3.3. Quiz

Criteria

Learners will be successful when they are able to:

- 3.1. Identify different types of copper cables and their uses
- 3.2. Identify copper connectors and termination apparatus
- 3.3. Identify different types of fiber optic premise cables and their uses
- 3.4. Identify fiber optic connectors and termination apparatus

Learning Objectives

- 3.a. Identify analog and copper telecommunications infrastructure.
- 3.b. Identify digital and fiber optic telecommunications infrastructure.

**4. Carry out copper premise cabling installations.**

Status: Active

Assessment Strategies

- 4.1. Discussion
- 4.2. Project

Criteria

Learners will be successful when they are able to:

- 4.1. Carry out copper cable pulling and installation
- 4.2. Carry out copper cable connector installation

#### 4.3. Carry out copper cable termination panel installation

##### Learning Objectives

- 4.a. Carry out copper cable premise installations.
- 4.b. Carry out copper cable connector and panel installations.

### 5. Carry out fiber optic premise cabling installations.

Status: Active

##### Assessment Strategies

- 5.1. Discussion
- 5.2. Project

##### Criteria

Learners will be successful when they are able to:

- 5.1. Carry out fiber optic pulling and installation
- 5.2. Carry out fiber optic connector installation
- 5.3. Carry out fiber optic termination panel installation

##### Learning Objectives

- 5.a. Carry out fiber optic premise installations.
- 5.b. Carry out fiber optic connector and panel installations.

### 6. Carry out proper cable management of premise installations.

Status: Active

##### Assessment Strategies

- 6.1. Discussion
- 6.2. Project

##### Criteria

Learners will be successful when they are able to:

- 6.1. Carry out slack management of cables
- 6.2. Carry out labeling of cables at termination points

##### Learning Objectives

- 6.a. Carry out cable management for fiber optic and copper installations.
- 6.b. Carry out cable management at termination panels for fiber optic and copper installations.

### 7. Discuss troubleshooting of premise networks.

Status: Active

##### Assessment Strategies

- 7.1. Discussion
- 7.2. Quiz
- 7.3. Project

##### Criteria

Learners will be successful when they are able to:

- 7.1. Discuss how to determine if there is a service issue or failure in the network

- 7.2. Discuss what test equipment can be used to troubleshoot premise networks
- 7.3. Discuss inside plant / premise common failure points
- 7.4. Discuss component failures
- 7.5. Discuss the impact of improperly installed cables and the affects it can have on the network
- 7.6. Discuss how environmental impacts and pests can affect networks and potential mitigation practices

Learning Objectives

- 7.a. Discuss issues that can cause outages or service disruption in premise networks.
- 7.b. Discuss failure points in a fiber optic network.
- 7.c. Discuss how poor installation practices can increase chances of network failures.