# Program Information

## Lesson:

### *Copper Cabling*

## Training:

## Premises Cabling

## Time frame:

### 60 minutes

# Instruction Section

## Learning Objectives:

## Identify and describe cable installation skills including cable placement, pulling techniques, and preparation for termination and splicing.

## Describe correct cable termination techniques for UTP and coaxial cable using appropriate tools and standards.

## Describe the purpose and use of cable testing equipment.

## Assessment Tools/Methods:

# Participants should be assessed on their participation in group discussions and activities.

## Learner Prior Knowledge:

## Prior to class, participants will need to read:

## Reference Guide: Unshielded Twisted Pair (UTP) Cable (<https://www.thefoa.org/tech/ref/premises/cable.html>)

## Reference Guide: Installing UTP Cabling (<https://www.thefoa.org/tech/ref/premises/install.html>)

## Reference Guide: UTP Termination (<https://www.thefoa.org/tech/ref/premises/term.html>)

## Reference Guide: Testing UTP Cabling (<https://www.thefoa.org/tech/ref/premises/test.html>)

## Reference Guide: Wiremap for UTP Cabling (<https://www.thefoa.org/tech/ref/premises/wiremap.html>)

## Reference Guide: Coax Cables in Premises Cabling Systems (<https://www.thefoa.org/tech/ref/premises/coax.html>)

## Prior to class, the participants will need to watch:

## [Premises Cabling Lecture 5: Installing UTP](http://www.youtube.com/watch?v=xeRWUQ1wb4U&list=PL3F0669372E06AE8B&index=5&feature=plpp_video)

## [Premises Cabling Lecture 6: Terminating UTP](http://www.youtube.com/watch?v=6-R-jZTNRXE&list=PL3F0669372E06AE8B&index=6&feature=plpp_video)

## [Premises Cabling Lecture 7: Testing UTP](http://www.youtube.com/watch?v=FNPfqAdaIyU&list=PL3F0669372E06AE8B&index=7&feature=plpp_video)

## [Premises Cabling Lecture 8: Coax Cable](http://www.youtube.com/watch?v=OQnlN8qwpu4&list=PL3F0669372E06AE8B&index=8&feature=plpp_video)

## Instructional Activities:

# Begin by reviewing the importance of proper cable installation for reliable network and communication systems.

# Remind participants of the significance of safety protocols when working with cables.

# Activity 1: UTP Cable Installation Preparation Discussion:

# Ask participants to share their knowledge about proper cable installation practices from their self-guided learning such as:

# Do not remove all of the cable from the box, carefully pull it.

# Pulling tension must be less than 25 pounds.

# Watch for kinks in the cable.

# Use cable trays or J-hooks.

# Cable should be installed neat.

# Floors must be firestopped.

# Be careful with cable ties, hook and loop fasteners are preferred.

# Mark both ends of cables for identification and mark the box.

# Encourage participants to discuss and exchange tips on how they ensure cable integrity during installation.

# Facilitate a group discussion on the challenges they may face during cable installation and how to overcome them.

# Activity 2: Cable Termination Discussion:

# Encourage discussions on the differences between TIA/EIA-568-A and TIA/EIA-568-B wiring standards for Ethernet cables.

# Facilitate a discussion on best practices for terminating UTP cables according to the chosen standard, using RJ45 connectors and punch-down blocks.

# Invite participants to share their experiences or ask questions about cable termination challenges they've encountered.

# Activity 3: Testing and Verifying UTP Cable Installation:

# Introduce participants to various cable testing equipment, including wiremappers, network verifiers, and certification testers by displaying images of the equipment or showing examples to the group.

# Encourage small group discussions on how to test cabling systems for connectivity, signal strength, and fault detection.

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# Activity 4: Stripping Coaxial Cable Discussion:

# Have participants review how coaxial cable is used in different applications from UTP cable.

# Review the tools and materials needed when stripping and crimping coaxial cable.

# Ask participants to review how coaxial cable strippers are used to remove the outer jacket of the coaxial cable.

# Encourage participants to discuss challenges they may face and share tips on achieving clean and secure terminations.

# Summarize key learnings and takeaways from each activity.

# Invite participants to share any additional insights, questions, or areas they would like to explore further.

# Encourage ongoing discussions and peer support for continued learning beyond the session.

## Resources:

# Whiteboard or display for recording points from discussions

# Reflection Section

Reflect on the skills you discussed during the lesson. How did your understanding improve? What challenges did you encounter and how did you overcome them? How do you plan to apply the skills and knowledge gained from this lesson in your professional or personal projects?

*This lesson is supplemental to the Fiber Optics lesson within FOA's Fiber U curriculum and not part of the FOA required curriculum to obtain the Certified Premises Cabling Technician certification. If interested in becoming an approved school and/or obtaining a certification, please contact FOA at*[*thefoa.org/contact-foa.html*](https://www.thefoa.org/contact-foa.html)*.*

*Note: AI, specifically ChatGPT 3.5, was used to generate timeline for this contextualized lesson plan.*