



## Skill Set Alignment Fundamentals of Voice and Data Cabling

The following skill set for the Fundamentals of Voice and Data Cabling reflects the competencies that students learn during this course. Employers, Academies, and students may use this document to communicate current knowledge, or to identify skills demonstrated at a work setting. Another valuable use of this information is as a list of proficiencies expected through work experience.

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Name of Business/Employer

\_\_\_\_\_  
Name of Student

\_\_\_\_\_  
Street Address

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Street Address

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City                      State                      Zip

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City                      State                      Zip

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Employment Supervisor's Name and Position

### Structured Premises Cabling

- Entrance facilities, backbone, horizontal, work areas
- Equipment rooms, telecommunications rooms
- Cross-connects—main, intermediate, horizontal

### Standards

- ANSI/TIA/EIA-568-B 569-A, 570-A, 606-A, 607-A
- ANSI/NECA/BICSI-568
- National Electrical Code

### Plans and Specifications

- Blueprints
- Construction specifications

### Media Characteristics

- Twisted-pair (UTP, ScTP)
- Color code
- Categories of cables (3-6)
- Coaxial
- Optical fiber cables (singlemode and multimode)

### Connectors

- UTP, ScTP, coaxial, optical fiber
- Connector pin configurations

- Color codes

### **Transmission Characteristics**

- AC/DC review
- Analog/digital signals
- Copper cable media
- Optical fiber media

### **Grounding, Bonding, and Electrical Protection**

- Basic design
- Installation

### **Safety**

- OSHA
- Common safety practices
- Personal protective equipment
- Hazardous environments

### **Professionalism**

- Customer relations
- Communications skills
- Professional appearance

### **Preparation for Installation**

- Building telecommunications rooms
- Installing grounding infrastructure
- Installing support system infrastructure
- Preparing work area outlet locations

### **Pulling Cable**

- Pulling backbone and horizontal twisted-pair cable
- Pulling optical fiber cable

### **Firestopping**

- Responsibilities
- Systems
- New and existing penetrations

### **Cable Termination**

- Pre-termination functions (forming, dressing, fanning, and labeling cables)
- Copper cable termination (UTP [Krone, BIX, 110, 66])
- Copper crimp termination
- Coaxial cable termination

### **Splicing Cable**

- Copper
- Optical fiber

### **Cable Testing**

- Copper cable testing using entry level testers (VOM and continuity testers)
- Overview of optical fiber testing

### **Cable Troubleshooting**

- Copper cables
- Optical fiber cables

**Retrofits and System Upgrades**

- Overview identifying active circuits
- Overview performing cut-overs
- Removal of abandoned cable

**Miscellaneous Duties**

- Administrative tasks
- Documenting test results
- Documenting as-builts
- Coping with changing technologies

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