Miami Dade College

Course Description

EEV0164 | Low Voltage Technician 3 | 5.00 credits

This course is an overview of audio, video, broadband, media management, telecommunication systems, and residential/commercial building networks.

Course Competencies

Competency 1: The student will be able to assemble and execute the pre-wire phase of installation by:

1. Identifying different cabling topologies used in electronic systems integration, including specs of TIA-570-D standard
2. Pre-wiring, labeling cables, and complying with codes and industry standards when installing an electronic system as specified, in order to facilitate proper performance of audio, video, control and related subsystem devices
3. Utilizing basic EMT and PVC conduit installation methods, including bending.
4. Installing and securing cables using industry recommended practices for bend radius, service loop length, support span, and mounting height

Competency 2: The student will be able to assemble and execute the trim-out phase of installation by:

1. Labeling installed cabling
2. Trimming-out an electronic system by labeling, terminating, and testing cables and properly mounting and installing trim- related devices, in order to support the installation of audio, video, control, and other subsystem devices

Competency 3: The student will be able to design and construct racks and cabinets by:

1. Describing the difference between a rack and a cabinet
2. Installing equipment into a rack or cabinet using proper cable management
3. Installing equipment into a rack or cabinet while providing for proper ventilation, power management, mounting, ergonomics, and safety

Competency 4: The student will be able to mount system components used in electronics integration by:

1. Explaining retrofitting, safety considerations, and assuring that UL standards are not changed and NEC codes are not violated during retrofit
2. Identifying appropriate mounting hardware. Mounting system components such as cameras, flat panel displays, and projectors by installing the proper brackets, housings, and mounting hardware, in order to provide proper performance and safety

Competency 5: The student will be able to connect and configure basic network infrastructure as it relates to electronics integration and automation by:

1. Setting up basic telephone devices such as handsets and intercoms in order to establish basic voice communication
2. Setting up basic data network devices such as switches and routers in order to facilitate basic data communication
3. Installing communications cabling using industry standards and recommended practices in order to create a robust, reliable network infrastructure
4. Performing the required level of cabling test procedures in order to ensure system performance meets or exceeds design specifications and client expectations.
5. Securing the infrastructure by evaluating and fortifying all network cabling locations (patch panels, wiring drops, network interface devices, etc.) in order to ensure client privacy and information security
6. Designing a wired and/or wireless network infrastructure using appropriate communications cabling that

meets the performance requirements of the client in order to ensure long-term operation and reliability

Competency 6: The student will be able to install and configure power devices and equipment by:

1. Explaining basics of electrical distribution
2. Installing power management devices such as surge protection devices, battery backups, and power conditioners in order to ensure the safe and maximized performance of installed systems

Competency 7: The student will be able to install and perform basic configuration of audio sub- systems by:

1. Defining audio terminology
2. Explaining audio signal and interconnects (analog and digital)
3. Setting up audio devices such as sources, amplifiers, and speakers in order to produce a desired listening experience

Competency 8: The student will be able to install and perform basic configuration of video sub- systems by:

1. Defining video terminology
2. Explaining video signal and interconnects
3. Describing the functions of High-Definition Multimedia Interface (HDMI) and how it works
4. Setting up video devices such as sources and displays, in order to produce a desired viewing experience

Competency 9: The student will be able to explain the audio/video fundamentals of various specialty spaces (e.g. cinema room, media room, home office, etc. by:

1. Explaining design considerations and performance goals of specialty spaces
2. Describing the basic layout and configuration of a specialty space
3. Installing speakers at proper locations to conform with common surround sound layouts
4. Describing the relationship between screen size and viewing distance
5. Installing projection system to ensure proper image size and geometry

Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively