

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Electronic Systems Technology Program
Revision Date: August 22, 2022
[Syllabus Statements](#)

I. CATALOG DESCRIPTION

Course Number: ELEC2048
Course Title: Commercial Installation and Wiring Standards
Prerequisite(s): None
Catalog Description: This course will explain current standards for BICSI standards for Level 1 Installers.
Credit Hours: 4.5
Class Hours: 60
Lab Hours: 23
Total Contact Hours: 83

II. COURSE OBJECTIVES: *Course will:*

- A. Present the technical knowledge of wiring types and standards.
- B. Explain and assess current installation and wiring standards.
- C. Discuss and demonstrate how to install and terminate wiring/fiber optics and connectors.
- D. Provide the opportunity for students to practice cable installation and terminations.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Demonstrate a working knowledge of wiring installation and termination.
 - 2. Explain various codes as they pertain to wiring installation and termination.
 - 3. Explain and demonstrate how to install and terminate various cable types.
 - 4. Explain and demonstrate how to pull cables/fiber optics.
- B. General Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

- A. General Knowledge and Planning
 - 1. Copper cable
 - 2. Types of fiber
 - 3. Verify and comply with site safety plan
 - 4. Perform labeling according to a labeling scheme
- B. Pathways and Spaces
 - 1. Build closets, telecom rooms, entrance facilities, equipment rooms, and data centers
 - 2. Installing grounding infrastructure
 - 3. Installing cable support systems
 - 4. Prepare station location – wall
 - 5. Prepare station location – floor
 - 6. Prepare station location – Power Pole/Modular Furniture
 - 7. Install fire stop
 - 8. Install sleeves
 - 9. Install cable trays, ladder racks and continuous cable support systems

10. Install non-continuous cable supports
 11. Install cable supports when cable is under the floor
 12. Install cut-in rings (cavity box)
 13. Install inner duct for fiber
- C. Pull Cable and Fiber
1. Install pull (draw) string or rope in conduit
 2. Pull horizontal station cable (conduit)
 3. Pull horizontal station cable open ceiling
 4. Pull backbone – riser from top down
 5. Pull backbone – riser from bottom up
 6. Pull backbone – horizontal backbone
 7. Pull fiber
- D. Cable termination
1. Pre-termination procedures
 2. IDC termination
 3. Coaxial termination
 4. Fiber optic termination
- E. Cable testing
1. Copper lines
 2. Fiber optic lines
- F. Integration/Convergence
1. Physical network topologies
 2. Wireless systems
- G. Codes and Standards
1. Adherence to local, state, and federal codes and industry standards
 - a. NEC
 - b. NFPA
 - c. ADA
 - d. OSHA
 - e. TIA
 - f. ANSI
 - g. IEEE
 - h. BICSI

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): BICSI, *Information Technology Systems Installation Methods Manual* [ITSIMM] (Refer to CID and/or instructor for current edition)
- B. Other Resources: Instructor handouts

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. Classroom discussion
 2. Demonstrations
 3. Lab work

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 1. Exams and quizzes
 2. Homework
 3. Lab evaluation

4. Observation

VIII. SPECIFIC COURSE REQUIREMENTS

- A. A minimum grade of D is required.
- B. Credit by Examination: Credit for the course CANNOT be earned through Credit by Examination.