



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009

(i.e. 2003-2004)

NEXT REVIEW: 2013-2014

(i.e. 2008-2009)

STATUS: A

(A, I, D)

COURSE TITLE: Network Cabling Technologies

COMMON COURSE NUMBER: CET1630C

CREDIT HOURS: 4

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS: 4

(Voc. Course ONLY)

Lecture: 48

Lab: 16

Clinic: 0

Other: 0

PREREQUISITE(S): None

COREQUISITE(S):

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum):*

This course is designed for students interested in the physical aspects of voice and data network cabling and installation. The course focuses on cabling issues related to data and voice connections and provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, as well as signal transmission. Students will develop skills in cable termination with both jacks and punch blocks, reading network design documentation, pulling and mounting cable, cable management, cable labeling, setting up telecommunications rooms, and patch panel installation and termination, as well as basic cable testing and troubleshooting, and basic cabling calculations. This hands-on, lab-oriented course stresses documentation, design, and installation issues, as well as laboratory safety, on-the-job safety, and working effectively with others.

The Panduit Network Infrastructure Essentials course will provide a good start in a career path leading to becoming a network technician, technical support specialist, maintenance technician, testing engineer, information systems planner, and systems integrator. This course will also assist in getting students ready to enter an electrical engineering degree program.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

1. Cabling and Safety Overview
2. Networking Basics
3. Signals and Wires
4. Copper Media



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5. Fiber-Optic Media
6. Introduction to Cabling Standards
7. Structured Cabling
8. Tools of the Trade
9. Cabling Installation Process
10. Cabling Rough-In
11. Trim Out Phase
12. Finish Phase
13. Cabling for Special Situations
14. Standardization Around the World



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EVALUATION:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

Evaluation instruments will include written and/or skills-based examinations and individual in-class and/or take-home assignments. Evaluation methods may also include group in-class and/or take-home assignments.

**** Complete the following only if course is seeking general education status ****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

| | |
|--|--|
| 1. Read with critical comprehension | |
| 2. Speak and listen effectively | |
| 3. Write clearly and coherently | |
| 4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate) | |
| 5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental) | |
| 6. Apply problem solving techniques to real-world experiences | |
| 7. Apply methods of scientific inquiry | |
| 8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings | |
| 9. Demonstrate an understanding of and appreciation for human diversities and commonalities | |
| 10. Collaborate with others to achieve common goals. | |
| 11. Research, synthesize and produce original work | |
| 12. Practice ethical behavior | |
| 13. Demonstrate self-direction and self motivation | |
| 14. Assume responsibility for and understand the impact of personal behaviors on self and society | |
| 15. Contribute to the welfare of the community | |

** General Education Competencies and Skills endorsed by '05-'06 General Education Task Force*



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UNITS

Unit 1

General Outcome:

1.0 The student shall: be introduced to cabling

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Introduction to Cabling
- 1.2 The Cabling Job Market
- 1.3 Safety Codes and Standards
- 1.4 Safety Around Electricity
- 1.5 Lab and Workplace Safety Practices
- 1.6 Personal Safety Equipment



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Unit 2

General Outcome:

2.0 The student shall: Networking and OSI Overview

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Networking Overview**
- 2.2 Network Topologies**
- 2.3 OSI Model Overview**
- 2.4 Physical Layer Functions**
- 2.5 Data Link Layer and Network Layer Functions**
- 2.6 Other Layer Functions**



Common Course Number: CET1630C

Unit 3

General Outcome:

3.0 The student shall: have an understanding of different signals

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 3.1 Signal Transmission**
- 3.2 Basics of Electrical Signals**
- 3.3 Electronic Characteristics of Cables**
- 3.4 Grounding and Bonding**
- 3.5 Basics of Optical Theory**
- 3.6 Wireless Systems Theory**
- 3.7 Signals on Networks**
- 3.8 High-Bandwidth and Backbone Signals**



Common Course Number: CET1630C

Unit 4

General Outcome:

4.0 The student shall: be introduced to different cable types

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

4.1 Overview

4.2 Twisted-Pair

4.3 Twisted-Pair Cable Fundamentals

4.4 Other Twisted-Pair Configurations

4.5 Coaxial Cable

4.6 Outside Plant Cables



Common Course Number: CET1630C

Unit 5

General Outcome:

5.0 The student shall: have a basic understanding of fiber optics

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

5.1 Fiber-Optics

5.2 Advantages and Disadvantages

5.3 Construction

5.4 Connectors

5.5 Transmission



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Unit 6

General Outcome:

6.0 The student shall: be introduced to cabling standards

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

6.1 Introduction to Cabling Standards

6.2 Standards Organizations

6.3 A Closer Look at Electrical Codes

6.4 Building codes and code enforcement



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Unit 7

General Outcome:

7.0 The student shall: be introduced to telecommunication closets

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

7.1 Structured Cabling Systems

7.2 Demarcation Point

7.3 Telecommunications and Equipment Rooms

7.4 Telecommunications Room Equipment

7.5 CD, BD, FD (MC, IC, and HC)

7.6 Work Area Cabling



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Unit 8

General Outcome:

8.0 The student shall: be shown how to use the tools of the cabling industry

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

8.1 Tools of the Trade

8.2 Diagnostic Tools

8.3 Tool Usage and Material Handling

8.4 Professionalism



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Unit 9

General Outcome:

9.0 The student shall: be introduced to project management

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

9.1 The Installation Process

9.2 Bid Creation

9.3 Contract Development, Negotiations, and Planning

9.4 Project Management

9.5 Communications and Conflict Resolution

9.6 Design Documents



Common Course Number: CET1630C

Unit 10

General Outcome:

10.0 The student shall: understand the rough-in phase of an installation

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

10.1 Rough-In Phase Overview

10.2 Rough-In Support Tools

10.3 Cabling to the Work Area (Horizontal Cabling)

10.4 Vertical Cable Installation (Riser cable)

10.5 Roughing-In Other Cabling Types

10.6 Firestops

10.7 Upgrades and Retrofits



Common Course Number: CET1630C

Unit 11

General Outcome:

11.0 The student shall: understand the trim out phase of an installation

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

11.1 The Trim Out Phase

11.2 Cable Management

11.3 Terminating Copper Media

11.4 Terminating Fiber-Optic

11.5 Patch Panels



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Unit 12

General Outcome:

12.0 The student shall: understand the completion stage of an installation

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

12.1 Cable Testing and certification

12.2 Performance testing (certification)

12.3 Final dressing

12.4 Cabling Project Completion



Common Course Number: CET1630C

Unit 13

General Outcome:

13.0 The student shall: introduced to special cabling situations

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

13.1 Special Situation Cabling

13.2 High Bandwidth cabling

13.3 Power over Ethernet (PoE)

13.4 SCADA

13.5 Industrial Ethernet

13.6 Active cable maintenance



Common Course Number: CET1630C

Unit 14

General Outcome:

1.0 The student shall: understand different country standards

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

14.1 US Codes?

14.2 Canadian Standards

14.3 Japanese Standards

14.4 Australian and New Zealand Standards

14.5 European Standards

14.6 Other Localization Examples

14.7 Localization Research