

# Des Moines Area Community College

## Course Information – EFFECTIVE Aug. 2007

Acronym/Number TEL 222

Historical Ref. [TELE 422](#)

Title Telecommunications Outside Plant

Credit breakout 4                      0                      8                      0                      0  
(credit                      lecture                      lab                      practicum                      work experience)

PREREQUISITE(S): TEL 210

COREQUISITE(S): TEL 220

### COURSE DESCRIPTION:

Provides hands on training in the telecommunications outside plant field. Topics covered include; basic installation and repair troubleshooting, fiber and copper cable repair and troubleshooting, outside plant cable splicing and design, ladder safety, working aloft and pole climbing.

### COURSE COMPETENCIES:

*During this course, the student will be expected to:*

1. Isolate and repair cable damage for fiber and copper cable plants using approved test sets and procedures.
  - 1.1 Use sheath fault finding test equipment.
  - 1.2 Demonstrate use of a locate wand and A-Frame.
  - 1.3 Demonstrate proper OTDR and MTDR test set use and cable fault isolation.
2. Demonstrate and perform safety procedures for outside plant work.
  - 2.1 Describe and use all outside plant related safety equipment.
  - 2.2 Demonstrate proper ladder safety and harness safety.
  - 2.3 Complete exercises without aid of reference for working aloft safety and equipment.
3. Recite cable color codes and cable make-up for fiber and copper cables.
  - 3.1 Recite the fiber and copper color code without aid of reference.
  - 3.2 Demonstrate knowledge of cable color code by demonstrations of correct OSP splicing.
  - 3.3 With aid of reference, be able to recite and explain the makeup of modern telecommunications cabling.
4. Demonstrate proper OSP splicing techniques.
  - 4.1 Perform aerial drop splices and BSW splices using approved test gear and equipment.
  - 4.2 Perform 3M, MS2 and Skotchlok brand splicing.
  - 4.3 Perform, operate and troubleshoot the OTDR interface for taking OSP cable measurements.
5. Perform Pole Climbing operations within the communication zone.

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- 5.1 Perform pole exercises with aid of instructor assistance.
- 5.2 Perform pole exercises involving attachment and connection of communication services.
- 5.3 Describe and explain proper safety and work procedures for working aloft.
  
6. Describe pole climbing methods.
  - 6.1 Describe use of “gaffs and hooks”.
  - 6.2 Describe use of body harness.
  - 6.2 Describe use of body belt.
  
7. Describe common OSP equipment.
  - 7.1 Describe OSP type test sets.
  - 7.2 Describe OSP vehicles and earth moving equipment.
  - 7.3 Discuss typical OSP careers and the type of equipment used in each
  
8. Research an OSP company.
  - 8.1 Discuss company business methods.
  - 8.2 Describe company OSP equipment and its use.
  - 8.3 Compare and contrast different OSP companies.
  
9. Discuss cable history.
  - 9.1 Describe early copper cable.
  - 9.2 Describe early copper splice techniques.
  - 9.3 Discuss current and emerging processes for cable repair.
  
10. Describe and use aerial pole equipment.
  - 10.1 Describe and use aerial attachments.
  - 10.2 Utilize pole attachments for messenger wire.
  - 10.3 Describe lashing wire.
  
11. Discuss buried OSP applications.
  - 11.1 Discuss “hand-holes” and cable vaults.
  - 11.2 Describe “man-holes”.
  - 11.3 Discuss proper safety and work in confined spaces.
  - 11.4 Demonstrate proper use of pedestals.
  
12. Describe procedure for using “Iowa One-Call”.
  - 12.1 Discuss purpose of “one-call”.
  - 12.2 Demonstrate procedure for a typical “locate request”.
  - 12.3 Perform typical cable locate using “one-call” guidelines on a simulated customer cable.

**COMPETENCIES REVIEWED AND APPROVED BY: Jay Nickelson**

**DATE: January 2007**

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**FACULTY:**

- 1. Jay Nickelson**
- 2. Galen Briggs**
- 3.**
- 4.**
- 5.**
- 6.**

Effective date: August, 2007

Submitted by: J. Nickelson

Campus: A B C U N W OC

extension: 2455

Revision(s): 11/2002; 8/03; 1/07