

## Common Course Numbering System

Your current Institution is CCCS

### Searching Current Courses For Spring 2015

Course: EIC 140

Title: Underground Power Systems

Long Title: Underground Power Systems

Course Description: Learn safety practices and related safety manual regulations, terminology, tool usage, fault finding, cable locating, equipment operation, switching procedures, installation of terminal devices, cable pulling, splicing, material identification, transformer and apparatus applications.

Min Credit: 7

Max Credit:

Course Notes: Entered new course 6/6/07 s@  
Changed from ELW to EIC 7/31/07 s@; revised 4/15/08 s@

Origin Notes: TSJC

### STANDARD COMPETENCIES:

- I.
  - A. Install & maintain underground Systems and Apparatus.
  - B. Install, terminate, test, identify and switch primary cable.
  - C. Distinguish between primary and secondary cables, systems & apparatus.
  - D. Install and maintain secondary, service and street light systems.
  - E. Explain design specifications and job print requirements.
  - F. Demonstrate knowledge of underground cable locating and repairing.
  - G. Identify safety precautions in excavating, constructing, testing and switching of underground installations

### TOPICAL OUTLINE:

- I. Underground Safety Procedures
  - A. Soil condition testing
  - B. Excavation procedures
  - C. Installation of work site protection
  - D. Entering enclosed spaces
  - E. Use of personal protective equipment
- II. Proper Excavating, Installations and Back Filling

- A. Trencher, backhoe and boom truck operation
- B. Proper back filling procedures
- C. Underground designs and systems
- D. Securing material & equipment for transport

III. Installation of Primary Cable

- A. Cable design
- B. Care of cable
- C. Installation of cable
  - 1. Pulling Procedures
  - 2. Elbows
  - 3. Splices
  - 4. Terminations & Risers

IV. Installation of Secondary Cable

- A. Design
- B. Connections & Compressions
- C. Troubleshooting and locating secondary cable
  - 1. Locating, using instruments, etc.
  - 2. Fault finding
  - 3. Street light feeds & specifications

V. Underground Installations & Enclosures

- A. Vaults & subsurface equipment
- B. Switching cabinets
- C. System design and project requirements
- D. Use of associated electrical apparatus

VI. Padmount & Submersible Transformers

- A. Types of single & three phase transformers
- B. Installations
- C. Connections
- D. Service and customer requirements

VII. Meter Connections, Secondary Pedestals and Junction Boxes

- A. Purpose
- B. Installation
- C. Service connections

VIII. Switching on Underground Circuits

- A. Safety equipment
- B. Testing

- C. Isolating
- D. Grounding
- E. Coding of conductors
- F. System Mapping

**IX. Circuit & Employee Protection**

- A. Overcurrent with fuses
- B. Overvoltage with lightning arrestors
- C. Overcurrent with electronic reclosers
- D. Non reclosing to assist construction personnel

**Course Offered At:**

**Trinidad State Junior College TSJC**

RELEASE: 8.5.3

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