

Syllabus:
Power Lineman Training

Subject Code: 171402
Course Number: LT1000
CIP Code: 46.0301
SOC Code: 49-9051

C-TEC of Licking County
150 Price Road
Newark, Ohio 43055

Instructors:

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Class Meeting Times:

- March 26-November 15, 2018, Monday-Thursday 9:00 am- 4:30 pm

Class Location:

- Classroom 2002G and outside lab

Program Hours:

- 900 Hours

Course Prerequisites:

- Copy of High School Diploma or GED
- Valid Ohio driver's license
- WorkKeys pretesting
- Selection via Power Lineman Pre-assessment/application (this pre-assessment/application process is mandatory and consists of the following:
 - Installing a cross arm while 12 inches off the ground
 - Carrying a 50 lb weight a distance of 50 feet and back without stopping
 - Climbing a ladder, then belt off and lift a 20lb bag on a rope up one side of the ladder and down the other side
 - Making a connection with a compression tool at the end of the cross arm
 - Climbing 4 feet and more up a pole with climbers and a belt

Required and Recommended Texts and Resources:**Maintenance Basics***

Introduction to T & D System

Distribution

Basic Electricity

Climbing Wooden Poles

Safety in T & D Maintenance

Using Tools

Rigging 1

Rigging 2

Electrical Safety

Hydraulic Derricks

System Protection & Monitoring

Bucket Truck Rescue

Overhead Distribution De-Energized*

Overhead Distribution System

Service Installation

Pole Framing & Guying

Safety in Overhead Line maintenance

Multimeter Operation

Using Line Test Equipment

Safe Bucket Tr. Operation

Working on Distribution Poles

Distribution Line Safety

Care & Testing of Tools & Equipment

Pole Top Equipment – Cutouts & Reclosers

Pole Top Equipment – Transformers

Transformer connections

Overhead Distribution Energized*

Distribution Line Install & Rem

Distribution Line Repl

Distribution Line Repair Gloves

Transformer Troubleshooting

Troubleshooting Overhead Lines

Overhead Troubleshooting 1

Overhead Troubleshooting 2

Underground Distribution*

Underground Res. Dist. Systems

Safety in Underground Line maintenance

Underground Cable Installation

Pad-Mount Transformer & Switch Gear

Cable Splicing

Cable Terminations

URD Troubleshooting

*T&D Power Skills <http://tdpowerskills.com>

Websites for Gathering Information and Research:

www.osha.gov

<http://tdpowerskills.com>

<http://incident-prevention.com/>

<http://www.stormsoldiersmovie.com/>

<http://www.line-man.com/forums/>

Course Description:

The Power Lineman Training Program is divided into three modules. Each module consists of 300 hours of training, resulting in a program total of 900 hours. The three modules: provide an overview of the energy delivery system, qualify individuals to climb power line poles, teach the assembly of materials, tools, equipment, train in bucket truck rescue, pole top rescue, installation of cross arms, basic electricity, and bucket and digger truck operation. Students successfully completing the Power Lineman Training Program will be prepared to obtain their Class D Lineman certificate, Class A CDL license, 10-hour OSHA card, CPR/First Aid card, Construction and Skilled Trade (CAST) certificate, and an entr-level position as a power lineman.

The program may include a 297-hour supervised externship in a power-lineman type setting. The externship is allowed to demonstrate mastery of their knowledge and skills.

Course Objectives/Outcomes/Sequence:

The course objectives include:

- Preparing students for post-program success, both in the work force and in their educational pursuits.
- Preparing students to process information using higher order thinking skills and to engage in sound decision-making.
- Providing a rich learning environment utilizing research-based methods of instruction, state-of-the-art technology, and current resources and materials.
- Maintaining high expectations for all students regardless of educational needs and providing support necessary for achievement.
- Providing a challenging, worthwhile curriculum based on current industry/academic expectations. Specifically and upon successful completion of the program/course for Network Technician Server 2012 the students will be able to demonstrate proficiency with:
 - **Phase I**
 - System Overview
 - Safety Policy and Personal Responsibility
 - Job Requirements and Expectations
 - Guides and Reference Sources
 - Personal Protective Equipment
 - Selection of Body Belt and Climbers
 - Sharpen Gaffs
 - Stretching and Flexibility
 - Butt Test A Wood Pole

- Learn to Climb a Pole
- Basic Knots and Splices
- Use of Hand line
- Identify Pole Line Material
- Conductor Material
- Transformer Material
- Chain Saw Operation
- Specialty Tools
- Insulation Protective Equipment
- Pulling Tools
- Set Up of Ladders
- Barricade Digger-Derrick and Bucket Truck
- Bucket Rescue From Ground
- Firefighting
- CDL Acquisition
- **Phase II**
 - Job Safety Briefings
 - Pole Climbing
 - Identify Circuits
 - Check Voltage and Continuity With Multi-Meter
 - Make Up Outdoor Lights
 - Install Cross Arm
 - Install Cut-Out and Arrester Brackets and Cluster Mount for 3 Phase Transformer Bank
 - Prepare Grounds for Use
 - Adjust Crimping Tools
 - Identify and use Different Types of Cutters
 - Splice Conductor on Ground
 - Splice Overhead Service Cable
 - Operate Truck Mounted Winch and Auxiliary Capstan
 - Install and Operate Capstan Hoist
 - Pole Top Rescue
 - Position and Operate Bucket Truck
 - Bucket Truck Rescue
 - Load and Unload Poles
 - Operate Mechanical or Hydraulic Pole Puller
 - URD Materials and Equipment
 - Select and Install Wire Grip
 - Operate Hydraulic Tools
 - Read KWH Meter
 - Spill Response and Clean-up
- **Phase III**
 - Pole Climbing
 - Basic Electricity
 - Low Voltage Test Equipment
 - High Voltage Detectors

- Install Grounds on Distribution Line
- Pole Top Rescue
- Cover Secondary
- Install Overhead Service
- Install Socket
- Meters
- Install and Tag Direct Burial Cable
- Install Pedestal and Make Service Connections
- Use Secondary Fault Finding Equipment
- Splice URD Service
- Patrol Lines for Damage
- Set Up and Operate Digger-Derrick
- Identify and Install Anchors

Possible Externship

The program may include a 297-hour supervised externship in a power-lineman type setting. The externship is allowed to demonstrate mastery of their knowledge and skills and only after successful completion of 603 hours of current program.

Description

This externship is designed to assist the student with utilizing their skills and tools in a work environment outside the school setting.

Goals

Upon completion of this externship, the student will be able to perform all facets of a Class D power lineman.

Objectives

Satisfactorily utilize all skills learned through the didactic portion of the power lineman program.

Method of Instruction

Working with preceptor who is employed with an organization that employs power lineman and that has a working relationship and contract with C-TEC.

Evaluation Methods

Completion of skills check sheets wherein student is observed successfully completing specified skills at externship site.

FINAL EXTERNSHIP GRADE

Pass/Fail

Grading:

Evaluation of student performance is based upon pupil performance objectives relating to course competencies study. The number of competencies mastered and the degree of mastery is translated into appropriate grades consistent with the C-TEC Board of Education policy on grading guidelines, practices, and procedures.

In the process of evaluation, instructors obtain several grades for each student within the time frame of the program/course. These grades may include, but are not limited to, performance on tests, quizzes, homework, assignments, special research projects, classroom participation, lab competency mastery and/or improvement and the demonstration of positive employability traits.

Journal Summary: A journal summary should begin with an introductory paragraph that introduces the main topic of the article and summarizes its content. Following the introduction, several paragraphs should be written detailing insights, implications, and how the information might be applied in your career. In addition, the reflection should include your thoughts and opinions concerning the content of the article. Summaries should be approximately 1 1/2 to 2 pages in length.

Final grades will be assigned based upon the student's accumulated points. Letter grades will be assigned using the following scale:

Grading Scale

90-100% - A

80-89% - B

70-79% - C

60-69% - D

59% or below – F

(For Power Lineman program, must maintain a 70% or higher GPA to pass.)

Credentialing:

- Class D Power Lineman certificate
- Class A Commercial Driver's License (CDL-A)
- OSHA 10-Hour Card
- Red Cross CPR/First Aid Card
- Construction and Skilled Trades (CAST) certification'
- Pole-Top Rescue certificate

Course Policies:

- **Disruptive Behavior** – Disruptive behavior of any type is NOT permitted and may result in dismissal from the program. Sleeping during class, tardiness to class, excessive talking during class and disrespectful behavior are examples of disruptive behavior.
- **Plagiarism** – Submitting plagiarized work for an academic requirement is considered academic misconduct. Plagiarism is the representation of another's work or ideas as one's own; it includes the unacknowledged word-for-word use and/or paraphrasing of another person's work, and/or inappropriate unacknowledged use of another person's ideas.
- **Diversity** - It is the responsibility of the instructor and the students to foster and maintain a harmonious, non-threatening and non-discriminating environment in the classroom. Therefore, all individuals are to be respected as equal and contributing partners of our society.
- **Attendance:** Must maintain at least **90% rate of attendance**. You are required to attend all classes. However, you may miss up to 2 classes and still pass the course. Any other absences must be approved by the program supervisor.