

Distribution Line Maintenance (LNWK 2373)



Credit: 3 semester credit hours (1 hour lecture, 6 hours lab)

Prerequisite/Co-requisite: None.

Course Description

A study of the theoretical practice, and practical procedures utilized in distribution line maintenance. Topics include voltage conversion, reconductoring energized circuits, pole change-outs, resagging energized conductors, and lockout-tagout procedures.

Required Textbook and Materials

1. Electrical Essentials for Powerline Workers, Wayne Van Soelen
 - a. ISBN number: 0-7668-1080-1
2. OSHA handouts
3. Handout literature

Course Objectives

1. Determine equipment and materials need from staking sheet information.
2. Perform safe work procedures and hold tailboard discussions.
3. Perform pole change out procedures on energized circuits.
4. Perform voltage conversion procedures.
5. Perform procedures for changing out pole line equipment.
6. Apply and follow all relevant safety rules and procedures.

Course Outline

- | | |
|--|---------------------------------------|
| I. Crossarm Change | D. Vehicle grounds |
| A. Safe procedure and PPE | E. Setting and removing poles |
| B. Cover up | IV. Conductor Re-sag |
| C. Bucket use | A. Safe procedures and PPE |
| D. Grounding | B. Cover up |
| II. Insulator Change/Pin type and dead end | C. Mechanical jumpers |
| A. Safe procedure and PPE | D. Hoists |
| B. Cover up | E. Sleeving conductor |
| C. Bucket use | V. Pole Change – Hand-set pole, de- |
| D. Vehicle grounds | energized line |
| III. Pole Change – Energized line | A. Safe work procedures and PPE |
| A. Approach distances | B. Digging pole hole |
| B. Safe work procedures and PPE | C. Rigging and hoisting pole |
| C. Cover up | D. Transferring and removing old pole |

Approved

Grade Scale

| | |
|----------|---|
| 90 – 100 | A |
| 80 – 89 | B |
| 70 – 79 | C |
| 60 – 69 | D |
| 0 – 59 | F |

Course Evaluation

Final grades will be calculated according to the following criteria:

| <u>Activity</u> | <u>Percentage</u> |
|-----------------|-------------------|
| Daily Grades | 20% |
| Deadend Change | 20% |
| Resag | 20% |
| Pole Change 1 | 20% |
| Pole Change 2 | 20% |
| Total | 100% |

Grade points will be awarded in accordance with the college catalog

1. Assignments are due on the due date assigned. Late assignments will not be accepted.
2. Tests must be taken on the announced date.
Daily grades include participation in classroom labs and skill level evaluations.
A student can only make up a practical test with the instructor’s approval.

Course Requirements

1. Demonstrate proper use, care, inspection, and storage for insulating equipment
2. Demonstrate proper use, care, inspection, and storage for Rubber gloves and sleeves
3. Properly apply cover up when working near or on energized lines
4. Recognize nominal voltages present, and distinguish energized parts.
5. Observe minimum approach distances
6. Safely operate a bucket truck
7. Perform routine maintenance and inspections on bucket truck
8. Perform advanced hotline maintenance

Attendance Policy:

1. Class attendance is important to obtain the educational objectives of this course. Prospective employers may also review your attendance records. Regular attendance and being on time for classes will have a positive effect on your academics and employment opportunities.
2. Two absences will result 1 letter grade drop, three absences drop 2 letter grades.

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3. **Four absences result in an F for the semester.**

Course Policies

1. No food or drinks in class.
2. Daily lab grades cannot be made up.
3. No make ups for Lab tests.
4. Any written test retake has an 80 point maximum grade.
5. LIT is a tobacco free campus- no tobacco products allowed
6. Students must follow safety rules and procedures at all times. Failure to follow safety rules will require action from daily grade reduction to expulsion from LIT.
7. Students must have and wear **all required clothing, including climbing boots at all times**, and have PPE and tools for participation in ***class and Lab***.
8. **Turn off all Cell Phones during class, labs and when on the field.** Unauthorized cell phone use will result in a 0 for the daily grade.
9. Do not bring children to class.
10. Cheating of any kind will not be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result from expulsion from LIT.
11. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
12. Internet Usage
 - a. Classroom computers have access to the internet.
 - b. Student usage of the internet will be monitored.
 - c. Proper usage of the internet will be allowed. Used for classroom research or as directed.
 - d. Any unauthorized use of the internet will not be tolerated.
 - e. Improper usage of the internet, such as profanity, pornography, gambling, etc... will result in disciplinary action not limited to expulsion from LIT.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Course Schedule

| Week | Topic | Reference |
|-------------|---|--------------------|
| 1 | Course introduction and policies <ul style="list-style-type: none"> • Lecture • Lab: Rubber glove inspection, truck inspection and maintenance | Handouts |
| 2/3/4 | Deadend insulator change <ul style="list-style-type: none"> • Lecture • Lab: Change deadend insulator on energized line • Exam, Deadend Change | Handout |
| 5/6 | Inline double deadend installation <ul style="list-style-type: none"> • Lecture • Lab: Cut in double deadend on energized line | Handout |
| 7/8 | Conductor resag <ul style="list-style-type: none"> • Lecture • Lab: Resag energized circuit • Exam, Resag | Handout |
| 9/10/11 | Pole change <ul style="list-style-type: none"> • Lecture • Lab: Job planning, Tailboard discussions, switching • Project: Change out pole in energized circuit • Exam, pole change 1 | Handout, Chapter 6 |
| 12/13 | Pole change <ul style="list-style-type: none"> • Lecture • Lab: Job planning, Tailboard discussions, switching • Project: Change out pole by hand in de-energized circuit • Exam, Pole change 2 | Handout, Chapter 6 |
| 14/15/16 | Final Project <ul style="list-style-type: none"> • Lecture • Project: As assigned | |

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Course Syllabi

Contact Information:

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