Orientation and Line Skills Fundamentals (LNWK 1301)

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: None

Course Description

Examination of utility company operations. Topics include company structure, safety and distribution standards handbook, linesman's tools, vocabulary, and work procedures. Discussion of basic electrical systems, including the history of power generation and distribution, with emphasis on generating plants and substations.

Required Textbook and Materials

1. Electrical Essentials For Powerline Workers, Wayne Van Soelen
2. OSHA handouts
3. Handout literature

Course Objectives

Describe financial operations of a typical power company; explain customer relations; identify electrical systems, lineman's tools, and work procedures; illustrate system operation and design; and list safe and proper handling of all equipment.

A. The students will explain customer relations

B. The student will be able to identify electrical systems, lineman's tools and work procedures.

C. The student will describe financial operations of a typical power company

D. The student will demonstrate safe and proper handling of all equipment.

E. The student will learn to demonstrate the proper use of rigging, knots, and splices.

F. The student will be able to follow safe work procedures.

G. The student will illustrate system operation and design.

Course Outline

I. Personal protective equipment
- A. use, care, storage
- B. Inspection

II. Poles
- A. Setting
  - 1. Safety
  - 2. Rake
  - 3. Cant
  - 4. Tamping
  - 5. Setting depth
- B. Pole sizes, length and class
- C. Creosote, CCA hazards

III. Hand tools
- U. Use, care, storage
- B. Inspection

IV. Wire ties and armor rods
- A. Safe work procedures and PPE
- B. Assembly and installing armor rods
- P. Proper ties
- D. Pre-formed ties

V. Conductors
- A. AWG

B. DC resistance
C. Ampacity
D. Types of conductor
E. Handling conductor
F. Connector types

VI. Rigging
A. Rope – types, strength, inspection, and storage
B. Slings
C. Knots
D. Plaiting
E. Rigging procedures

VII. System operation and design
A. Electric power systems
B. Customer relations

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:

Activity	**Percentage**
Rigging Exam	20%
Tool and Material Exam	20%
Equipment operation	10%
Tie Practical	15%
Conductor Exam	20%
Daily Grades	15%
Total	***100%***

Grade points will be awarded in accordance with the college catalog

1. Assignments are due on the due date assigned. Late assignments are not accepted.
2. Tests must be taken on the announced date.

Course Requirements

1. Demonstrate proper use, care, and inspection on common tools and PPE
2. Explain proper pole setting techniques
3. Demonstrate and explain proper knots and rigging
4. Follow all safety rules
5. Properly clip in conductor
6. Identify conductor sizes and corresponding color codes
7. Explain typical power system operations and design

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

Course Policies

1. No food, 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 have and wear **all required clothing, including climbing boots at all times,** and have PPE and tools for participation in ***class, lab and on field.***
7. Students must follow safety rules and procedures at all times. Failure to follow safety rules will require disciplinary action not limited to expulsion from LIT.
8. Turn off all Cell Phones during class, lab 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 office in Student Services, Cecil Beeson Building.

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 • Lecture, PPE, tools	Handouts
2	Pole setting, tools and material • Lecture	Handouts
3/4	Pole setting, tools and material • Lecture	Handouts
5/6/7	Conductors, tools and material • Lecture	Chapter 9
8/9	Wire ties • Lecture	Handouts
10/11/12/13	Rigging • Lecture	Handouts
14/15/16	System operation and design • Lecture	Chapter 1

Contact Information:

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