ELPL1106  Fundamentals of Electrical Distribution 1

COURSE DESCRIPTION: This course covers setting and aligning poles, stringing single phase and three phase wires, installation of armor rods, hand ties, preform ties and overhead secondaries. 4 Cr (1 lec/pres, 3 lab, 0 other)

COURSE FOCUS: This course covers safety and job skills required by the powerline industry. The REA Specifications book will be used and followed in this class.

PREREQUISITES: ELPL1100 - Pole Climbing and Equipment Operation.
ELPL_____ - Pole Climbing and Equipment Operation 2.

TEXT AND REFERENCES: Manufacture's recommendations and OSHA requirements will be provided in class. The Lineman Cablemans Handbook. REA Spec. Book

COURSE GOALS: The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. All goals will be completed except if time does not allow.

1. describe the procedure for setting pole by hand
   a. safety rules
   b. digging tools
   c. piking method
   d. pole rake
2. demonstrate setting pole by hand
   a. piking method
   b. pole rake
   c. align and rake pole
   d. plumb poles
3. describe specification sheet
4. describe single-phase structures
   b. dielectric strength
   c. pole hardware
5. frame single-phase poles
   a. drill holes using hand auger
6. describe B construction
   a. B1, B1-1, B2, B3, etc
   b. dielectric strength
   c. pole hardware
7. describe string conductor
   a. compute sag
b. tensile strength
8. frame B (V-phase) construction
   a. B1, B2, B3, etc.
9. build single phase line
   a. A1
   b. convert to A7
   c. install ground rods
   d. install pole ground wire
      a. describe dissimilar metals connection
      b. use compression connector.
   e. install down guys
      a. install guy dead ends
      b. install anchors
      c. bond guy strand
10. installing primary and neutral conductor
    a. use stringing sheaves
11. barrel armor rod
12. installing conductor ties
    a. tie single-support aluminum ties
    b. tie double-support aluminum ties
    c. armor rod
    d. perform ties
    e. super ties
13. convert single phase line to B (V-phase) line
    a. frame and double cross arms
    b. installing conductor ties
       a. tie single-support aluminum ties
       b. tie double-support aluminum ties
       c. armor rod
       d. perform ties
       e. super ties
14. install open-wire secondaries
15. install triplex secondaries
16. frame three-phase poles

STUDENT CONTRIBUTIONS: Each student will spend at least 4 hours per week preparing for class. Attendance is critical in this class: Each class worth 15 points, late for class 10 points, call for absence 5 points, do not show up or notify –10 points. Excuse two absences.

COURSE EVALUATION: Your performance in this course will be converted to percent. A (100-94), A- (93-90), B+ (89 -87), B (86-84), B- (83-80), C+ (79 -76), C (75-72), C- (71-67), and F (below 67)
COURSE SCHEDULE: The class meets for 1 lecture hour and 6 lab hours per week.

The information in this course outline is subject to revision.

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