ELUT 2110 TRANSFORMER BANKING 2

COURSE DESCRIPTION: This course is a continuation of Transformer Banking I. This course will look into single-phase power banks and autotransformers used in the transmission and distribution of small and large blocks of power.
2 Cr (1 lect/pres, 1 lab, 0 other)

COURSE FOCUS: Focus is on locating electrical troubles regarding power outages, low voltage, and high voltage problems.


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. identify transformer components
   a. tertiary winding
   b. three-phase transformer
   c. wye banks
   d. delta banks
   e. open banks

2. explain function of autotransformer
   a. transformer with straight ratio
   b. nameplate data
   c. cooling methods
   d. megohm meter use
   e. a tap changer
   f. transformer with straight ratio
   g. transformer cooling
   h. dielectric loss
   i. nameplate transformer
   j. winding ratio
   k. power factor test
   l. capacitance test
   m. radiator fins
   n. megohm meter
   o. an autotransformer
   p. a tap changer
   q. valve for pressure relief
   r. vacuum filtering
   s. forced air-cooling
3. describe ratio test
   a. fuse protection
   b. lightning protection
4. locate nameplate
5. determine cause of open circuit
   a. hi-voltage cause
   b. low voltage cause
   c. correct values
6. draw schematic of autotransformer
   a. diagram of wye bank
   b. diagram of delta bank
   c. diagrams of open banks
7. troubleshoot low voltage complaint
   a 3-phase power circuit
      a. simulate open circuit
      b. evaluate open circuit
      c. simulate 3-phase trouble
      d. analyze single phasing
      e. repair defective circuit
      f. repair circuit damage
   b. customer hi-voltage complaint
8. interpret codes used in abbreviated cooling
9. interpret nameplate data
10. calculate total power
    a. measure input voltage
    b. measure input current
11. examine transformer working
12. recite rules of transformer safety
13. pass final test

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, worksheets and tests 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 2 lab hours per week.

The information in this course outline is subject to revision

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their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

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