COURSE INFORMATION FORM

DISCIPLINE

COURSE TITLE

Electrical Distribution Systems

CR.HR  3  LECT HR.  2  LAB HR.  2  CLIN/INTERN HR.  _______  CLOCK HR.  _______

CATALOG DESCRIPTION

The student will learn how power is generated, transported and distributed. Different methods and types of electrical power transmission and distribution systems, structures and equipment will be emphasized. The student will learn how a power grid is interlocked across multiple utilities.

PREREQUISITES

INTE 113 with a C grade or higher

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Identify symbols used in one-line diagrams.
2. Identify equipment through symbols on maps.
3. Describe the operation of a distribution system.
4. Identify distribution equipment in the field.
5. Describe the power conversion formulas used in distribution systems.
6. Describe the need and use of measuring devices in a power distribution system.
7. Describe power quality issues in a power distribution system.
8. Identify various voltages in the field.
9. Describe the interlocking of a power grid.
10. Describe how electrical power is generated.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

The student will demonstrate:


CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes will be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

Written Tests: 2, 4, 5, 8
Assignments: 1, 3, 6, 7, 9, 10
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction
   A. Generation
   B. Transmission
   C. Substation
   D. Distribution

II. Electrical Energy
   A. Hazards
   B. Safety concerns and procedures
   C. Utilization

III. Generation
   A. Turbine/Generator
   B. Steam
   C. Nuclear
   D. Gas
   E. Co-generation
   F. Alternative sources

IV. Transmission
   A. Line losses
   B. Substations
   C. Switchyards
   D. Hazards and problems

V. Distribution
   A. Basics
   B. System designs
   C. Radial
   D. Loop primary
   E. Overhead
   F. Underground
   G. Management

VI. Distribution
   A. Basics
   B. System designs
   C. Overhead
   D. Underground