

ELEG 4503 - ELECTRIC POWER DISTRIBUTION SYSTEMS

Fall Semester, 1995

Catalog Data: ELEG 4503 Electric Power Distribution Systems. 3 credit hours. Design considerations of electric power distribution systems, including distribution substations, primary and secondary circuits. Distribution transformers and capacitor applications, voltage regulation, and distribution system protection. Prerequisite: ELEG 3303.

Textbook: T. Gonen, Electric Power Distribution System Engineering, McGraw Hill, 1985.

References: R. D. Schultz and R. A. Smith, Introduction to Electric Power Engineering, Harper & Row, 1985.

Coordinator: Juan Carlos Balda, Associate Professor of Electrical Engineering

Goals: To acquaint the student with power distribution systems and to introduce design concepts in distribution system engineering.

Prerequisites by Topic:

1. Steady state sinusoidal circuit analysis, including three-phase circuits.
2. Single-phase and three-phase transformer characteristics.

Topics:

1. Application of distribution transformers (5 classes *)
2. Distribution substations (3 classes)
3. Design consideration of primary systems (3 classes)
4. Design consideration of secondary systems (2 classes)
5. Application of capacitors to distribution systems (5 classes)
6. Voltage regulation (4 classes)
7. Distribution system protection (5 classes)
8. Exams (2 classes)

Computer Usage:

None.

Laboratory Projects:

Students are required to perform four experiments dealing with the use of lab equipment, transformer connections and power factor correction.

ABET category content as estimated by faculty who prepared this course description:

Engineering Design: 3 credits

* Two 80-minute classes per week.

Prepared by: _____ Date: _____