

CALIFORNIA STATE UNIVERSITY, CHICO
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Course Outline: EECE 483 Power Systems operation (4 units, Fall)

Instructor: Dr. Adel A. Ghandakly OCNL 308

Catalog Data: POWER SYSTEMS OPERATION. 4 hours. Prerequisite: EECE 311. Power system structure, components and single line diagrams, per unit calculations, transmission line modeling, network matrices and Y-bus, load flow, economic power dispatch, basic relays and system protection schemes.

Prerequisite Topics: Network analysis, Matrix algebra, Electromagnetics, Transformers, Synchronous machines

Textbook: "Power system Analysis", Hadi Saadat, 3rd edition, McGraw-Hill, 2010.

Objective: This course is designed to teach seniors in EECE how modern large power systems are represented, analyzed and economically operated.

Topics:

1. Power systems single line diagrams and per unit calculations.
2. Transmission Line Modeling and operation
3. Network matrices including Y-bus and Z-bus.
4. The load flow program.
5. Large system loss formula.
6. Real and reactive power dispatch.
7. Power system equipment protection.