

King Saud University
College of Engineering
Electrical Engineering Department

Instructor: Dr. Usama Khaled
E-mail: ukhaled@ksu.edu.sa
<http://fac.ksu.edu.sa/ukhaled/home>

Office: 2C-108 / 4 Phone: 467-3797
2nd Semester 1434-1435H (2013-2014)

EE443 Power System Operation and Control

Course Objectives:

- 1- Understanding the fundamentals of operation of power systems.
- 2- Analyzing the conditions for economic operation of the system.
- 3- Understanding the fundamentals of energy management systems and relevant issues.

Course Topics:

- 1- Introduction to power system operation
- 2- Economic operation of the power system: Economic Dispatch, Unit Commitment & OPF.
- 3- Automatic generation control.
- 4- Energy management systems
- 5- Power system security
- 6- State estimation in power systems

Text Book : J.J. Grainger & W.D. Stevenson, "Power System Analysis", Published by McGraw-Hill Inc., New York, 1994.

Course Schedule:

week	Topics
1	Introduction to modern power system operation and control
2	
3	Economic operation principles
4	
5	Generation scheduling formulation and solution techniques
6	
7	Automatic generation control
8	
9	Load flow optimization and control
10	
11	Introduction to contingency analysis
12	
13	Introduction to stability analysis
14	

Grading Policy:

Mid-Term I: Thursday 13/03/2014	22.5 %
Mid-Term II: Thursday 08/05/2014	22.5 %
Tutorial & Home Works	5 %
Lectures attendance & Computer HW	10 %
Final Exam	<u>40 %</u>
Total	100 %

Attendance:

A student absent for more than 25% of lectures will not be allowed to appear in the final exam. This policy will be strictly enforced without any exception.

Class/Tutorial Schedule:

Class is held two times per week in 110 and 50-minutes lecture sessions. There is also a 50-minute weekly tutorial associated with this course.

Teaching assistant:

Eng. Ameen Al-Assar, Office: 0B-92; Phone: 467-6913