# EE430 Power system analysis

**Catalog Data**

Power system analysis 2  (3-0-3) - 3 credits

some aspects of power flow, symmetrical faults, symmetrical components & sequence networks, Unsymmetrical faults, economic operation power systems, state estimation of power systems, power system stability

Pre-requisites: EE337

**Textbook**


**Reference**


**Course Objectives**

1. Ability to analyze power system static and dynamic models.
2. Introducing special load flow methods.
3. Introducing the analysis of symmetrical and unsymmetrical faults.
4. Introducing economic operation and state estimation of power systems.

**Pre-Requisites by Topic**

1. Electric circuits
2. Machines
3. Linear Algebra

**Topics**

1. DC and decoupled load flow 3 Hours
2. Symmetric faults 6 Hours
3. Symmetrical components and sequence networks 6 Hours
4. Unsymmetrical faults 9 Hours
5. Economic operation of power systems 6 Hours
6. State estimation of power systems 6 Hours
7. Power system stability Hours

**Computer Usage**

Matlab Simulation

**Estimated Content**

Engineering Science 2.0 Credits

Engineering Design 1.0 Credits

**Prepared by**

Dr. A. M Hamdan

**Date**

15.9.2008
### Mapping of course (EE430) objectives to program outcomes

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>Delivery Methods</th>
<th>Assessment Methods</th>
<th>(a)</th>
<th>(b)</th>
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<tbody>
<tr>
<td>1. Ability to analyze power system static and dynamic models.</td>
<td>Lectures, tutorials.</td>
<td>Homework, quizzes, Exams.</td>
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**ABET a–k Engineering and Technology program outcomes**

(a) An ability to apply knowledge of mathematics, science, and engineering
(b) An ability to design and conduct experiments, to analyze and interpret data
(c) An ability to design a system, component, or process to meet desired needs
(d) An ability to function on multi-disciplinary teams
(e) An ability to identify, formulate, and solve engineering problems
(f) An understanding of professional and ethical responsibility
(g) An ability to communicate effectively
(h) The broad education necessary to understand the impact of engineering solutions in a global and societal context
(i) A recognition of the need for, and an ability to engage in life-long learning
(j) A knowledge of contemporary issues
(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice