EG2100 Power System Analysis 6.0 credits

Analys av elkraftsystem

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for EG2100 valid from Spring 2019

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

• SF1624 Algegra and geometry (or equivalent)

• SF1625 Calculus in one variable (or equivalent)

• SF1626 Calculus in several variables (or equivalent)

• SF1519 Numerical methods and basic programming or SF1546 Numerical methods, basic course or EL1150 Introductory Matlab course (or equivalent)

• EJ1200 Electric power systems (or equivalent)

• English B/English 6 (or equivalent)

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

In this course students are prepared to become power system analysts, with the fundamental knowledge that they can use in the future for furthering their ability in designing and planning electrical power networks, and to characterize the most basic practices used in power system operations.

After completing the course, the students should be able to:

• Using first principles derive the basic concepts and methods used for power system analysis.

• To construct mathematical models for computing the steady state performance, and basic unbalanced performance of power systems.

• To derive, describe and compare different models of the most common equipment used in power network models.

• Using different methods, to compute, analyze, and reflect on the performance of a power system under steady state under symmetrical as well as unsymmetrical conditions.

Course contents

Fundamental Principles for Power System Analysis AC circuits, methods for Analysis and Design of Power Networks in Steady State under symmetrical as well as unsymmetrical conditions.

Examination

• TENB - Exam, 6.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

The examination consists of two parts, namely,

Part 1. Home exam (assignments)

Part 2. Written examination given in period 2

The final grade is based on the sum of the scores from these two parts.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.