EG2100 Power System Analysis 6.0 credits

Analys av elkraftsystem

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

Establishment

This official course syllabus is valid from the autumn semester 2025 in accordance with decision by the director of first and second cycle education: HS-2025-0595.Date of decision: 2025-04-02

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

Knowledge in algebra and geometry, 7.5 higher education credits, equivalent to completed course SF1624/SF1672.

Knowledge in one variable calculus, 7.5 higher education credits, equivalent to completed course SF1625/SF1673.

Knowledge in multivariable analysis, 7.5 higher education credits, equivalent to completed course SF1626/SF1674.

Knowledge in Matlab, 1.5 higher education credits, for example, acquired in a completed course in numerical methods such as SF1519/SF1546.

Knowledge in Electric Power Systems, 6 higher education credits, equivalent completed course EJ1200.

Language of instruction

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

Intended learning outcomes

After passing the course, the student shall be able to

1. create mathematical models, analyse and carry out calculations for an electric power system under symmetrical as well as unsymmetrical conditions in steady state, and for load flow analysis.
2. carry out the above-mentioned calculations numerically in Matlab and present received numerical results in a written report.

Course contents

Fundamental principles for power system analysis, methods for analysis and design of power networks in steady state under symmetrical as well as unsymmetrical conditions.

Examination

- TEN2 - Written exam, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO3 - Project work, 2.0 credits, grading scale: P, 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.

Other requirements for final grade

Final grade is based on the written exam.

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.