EG2240 Power System Planning 6.0 credits

Systemplanering

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-2025-0583.Date of decision: 2025-03-21.

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

Specific prerequisites

Knowledge in Numerical Methods, 6 credits, equivalent to completed course SF1512/SF1545/SF1546/SF1547.

Knowledge in Probability Theory and Statistics, 6 credits, equivalent to completed course SF1917/SF1918/SF1920.

Active participation in a course offering where the final examination is not yet reported in LADOK is considered equivalent to completion of the course.

Being registered for a course counts as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

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 should be able to

- formulate, solve and analyse the results of short- and long-term planning problems for electricity producers and other players in power systems with large part continuously varying electricity generation (for example wind power),
- give a short oral presentation (both individually and in groups) of the solution to a power system planning problem,

in order to learn to formulate, solve and analyse power system planning problems.

Course contents

The course includes basic models for different types of power plants and how these models can be applied in different types of optimisation problems (for example linear programming, stochastic programming and dynamic programming). Theory and examples are presented in lectures. The students may then apply the theory on simplified (but realistic) examples.

Examination

- SEM1 - Seminars, 3.0 credits, grading scale: P, F
- PRO1 - Project assignments, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project assignments, 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.

Pass grade on the modules SEM1 and PRO1 are required for the final grade E. The module PRO2 is optional project assignments. The final grade in the course is the highest grade of PRO1 and PRO2.

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.