



EG2110 Stabilitet och styrning av elkraftsystem 7,5 hp

Power System Stability and Control

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för EG2110 gäller från och med HT13

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Elektroteknik

Särskild behörighet

Three-phase system, load flow calculations, per unit system and basic control theory.

Also documented proficiency in English B or equivalent.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

- explain the various power system instabilities and dynamics in power systems,
- apply and explain different methods for analyzing power system stability,
- create mathematical models for dynamic and stability analysis of power systems,
- explain different power system controls, and their impact on the system stability,
- demonstrate how the transient stability of a power system can be analyzed by using Equal Area Criterion,
- analyze electromechanical modes in power systems,
- design excitation systems to improve transient stability, and power oscillations damping,
- perform frequency control,
- reflect on, evaluate, and critically assess others' scientific results.

Kursinnehåll

This course deals with power system stability and control. The course starts with a review of large power outages in the world. Then, different power system instabilities will be presented and discussed in the course. After that, we will be able to analyze the large power outages in the world presented in the first lecture. Also, different control algorithms for improving power system stability will be presented.

Kursupplägg

The course includes lectures, project work hours, and examination. During the project work hours, the teaching assistants will be available to assist the students with the assignments (home exam).

Kurslitteratur

Course compendia:

M. Ghandhari: "Stability of Power Systems, An introduction"

Examination

- TEN₁ - Tentamen, 7,5 hp, betygsskala: A, B, C, D, E, FX, F

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

The examination consists of two parts, namely

Part A which is a scheduled written exam and Part B which is a project work (home exam).

Part A decides if you pass the course or not. However, Part B gives the student the opportunity to improve her/his grade.

Part B is comprised by individual written report and written opposition, and also oral presentation and opposition.

Övriga krav för slutbetyg

Examination 7,5 hp

Etiskt förhållningsätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.