



EG2110 Power System Stability and Control 7.5 credits

Stabilitet och styrning av elkraftsystem

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

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

Establishment

The official course syllabus is valid from the autumn semester 2022 in accordance with Head of School decision: J-2021-1827. Decision date: 14/10/2021

Grading scale

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

Education cycle

Second cycle

Main field of study

Electrical Engineering

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 to describe power system dynamics
2. based on the derived mathematical models, apply different basic methods to
 - a) study and analyse power system instabilities
 - b) improve power system stability based on basic control algorithms,
 - c) describe and analyse effect of integration of renewable energy on power system dynamics and stability
3. numerically carry out the second intended learning outcomes by using Matlab, and present and discuss obtained numerical results.

Course contents

This course covers power system stability and control. In the course, different mathematical models are presented to describe power system dynamics and to analyse power system instabilities. Furthermore, different control algorithms are presented and implemented to improve power system stability.

Specific prerequisites

- Knowledge in analysis of electric power system, 6 higher education credits, equivalent to completed course EG2100.
- Knowledge in automatic control, 6 higher education credits, equivalent completed course EL1000/EL1110.
- Knowledge in numerical methods and basic programming, 9 higher education credits, equivalent completed course SF1519.

Examination

- PROJ - Project, 7.5 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.

Transitional regulations

Students who have not completed the course with earlier examination part should carry out the re-examination.

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.