FEG3316 Advanced Power Systems Laboratory Experience, Graduate Course 6.0 credits

Avancerade elsystem, laborationskurs

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

Establishment

Course syllabus for FEG3316 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

The course is intended for Ph.D. students in electric power systems, but can also be suitable for students from other fields of electrical engineering.

Language of instruction

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

Intended learning outcomes

Upon completion of the course the student should be able to

- Understand and describe advanced concepts of power system monitoring, operation, control and/or protection.
- Implement and deploy solutions studied in the course.
- Solve practical challenges in solution implementations.
- Be aware of practical limitations of the presented solutions.

Course contents

The course is concerned with the application of advanced technologies, analysis methods, and tools with the objective of efficient system operation, control and protection of electric power systems.

The course is oriented towards smart grid concepts such as the application of modern telecommunication systems, synchrophasor technology, and other technologies for smart operation, smart control and smart protection in the presence of renewable energy sources.

In particular, practical implementations in the laboratory are analyzed and compared to the theoretical background. The course makes use of real-time and real-time hardware-in-the-loop simulation for testing and validation of the implementation of new analysis methods, hardware and software prototypes developed during the course.

Examination

- EXA1 - Examination, 6.0 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.

The project should be implemented in the laboratory environment and is presented in a technical report.

Other requirements for final grade

Approved laboratory work and approved technical report.

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.