



FEI3353 Elektroteknisk konstruktion, doktorandkurs 10,0 hp

Electrotechnical Design, Ph D. Course

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

Fastställande

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Betygsskala

P, F

Utbildningsnivå

Forskarnivå

Särskild behörighet

The participant must a registered PhD student in the program of Electrical Engineering

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

After completing the course, course participants will be able to

- describe the function of some electrical components and function and the properties of the - included magnetic, dielectric and conductor materials,
- describe and explain how electric and magnetic fields affect the operation of electrical equipment,
- use analytical methods, dynamic simulation and the finite element method for the design of electrical equipment.

Kursinnehåll

Basic principles, issues, methods, and tools for the design of electrical systems that includes, electric and magnetic fields, electric and magnetic materials, mechanical and thermal system, and multiphysical systems.

Most of the course is focused on the implementation of design tasks that includes the methodology for problem formulation and presentation of model algorithms, use of finite element software, and dynamic simulation. The design objects can be an electromechanical actuator, magnetic device as a transformer, a loudspeaker and/or a high voltage device as a HV cable, bushing and/or cable termination, where electrical, magnetic, thermal and mechanical aspects has to be accounted for. The design tasks that will be performed are decided by the course examiner.

Examination

- EXA1 - Examination, 10,0 hp, betygsskala: P, 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.

Övriga krav för slutbetyg

- Written examination
- Oral presentation at a seminar at KTH or at a conference/symposium outside KTH
- Approved project report

The project report should comprise background, and introduction of a selected design problem, description of the approach to manage the problem, the carrying out, results, assessment of the result, and a conclusion regarding the obtained results.

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.