FEI3350 Magnetic Hysteresis 8.0 credits

Magnetisk hysteresis

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

Course syllabus for FEI3350 valid from Spring 2013

Grading scale

Education cycle

Third cycle

Specific prerequisites

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

Language of instruction

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

Intended learning outcomes

The aim of the course is to render comprehensive knowledge about current magnetic hysteresis models. Another goal is to the accomplish knowledge to select, apply and assess the appropriate hysteresis model in different applications of magnetic materials.

Course contents

- The Preisach model
- The Jiles-Atherton model
- The Bertotti model
- The Bergqvist model
- Implementation and use of a selected model
- Assesmemt of the used model

Disposition

Self studies, Seminars, software exercises, project work , presentations of project, homework problems, written report

The written report should comprise a background and introduction of the topic of the course.

The different hysteresis models should be described and explained. In the report also an example of a computer implementation and application of a selected model should be given.

Course literature

G. Bertotti: Hysterisis in Magnetism

I. Mayergoyz: Mathematical models of hysteresis

Examination

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.

Other requirements for final grade

- Oral presentation at a seminar at KTH or at a conference/symposium outside KTH
- Approved project 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.