FEJ3210 Analysis of Electrical Machines 9.0 credits

Elmaskinsanalys

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

Establishment

Course syllabus for FEJ3210 valid from Spring 2012

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After the course, the student should be able to demonstrate an extended knowledge of:

-motor applications, pumps, fans, electrical vehicles,

-non-sinusoidal m.m.f. waves, supply voltage harmonics and windings,

· induction machines, derivation of the equivalent circuits parameters,

·influence of magnetic saturation,

·influence of temperature dependence

·models for transient analysis of electrical machines,

·influence of converter control on electrical machines.

Course contents

Magnetic circuits and materials, AC windings, extended models of electrical machines, asymmetric supply voltage and load, dq analysis for transient modelling of electrical machines, space vector analysis.

Disposition

16 hours lecture, 12 hours tutorial, 12 hours project assignment, 40 hours individualized project

Course literature

Sadarangani, C., Electrical Machines – Design and Analysis of Induction and Permanent Magnet Motors, KTH 2006, chapters 1-6.

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.

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

A full-time week is dedicated to the individualized project preferably linked to the student's own research.

Other requirements for final grade

- One written examination
- Project assignment

· Individualized project

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.