

Kursanalys¹

Kursdata

Kursens namn	Design of permanent magnet synchronous machines
Kursnummer	EJ2221
Poäng	7.5 HP 3 credits for oral examination 3 credits for project reports 1.5 credits for presentations and oppositions
När kursen genomfördes	HT08
Kursansvarig och övriga lärare	Juliette Soulard, head teacher, lecturer, project Dmitry Svechkarenko, project, tutorial Mats Leksell and Oskar Wallmark, project Florence Meier, support Emetor, tutorial Stefan Östlund, examiner
Undervisningstimmar, fördelade på F, Ö, R, L	Lectures 12 hours Tutorial 4 hours Project 42 h support + 15 h presentation (2 groups)
Antal registrerade stud.	8+2 (PhD students)
Prestationsgrad efter 1:a examenstillfället, i %	94%
Examinationsgrad efter 1:a examenstillfället, i %	80%

Mål

Ange målen för kursen	The aim of the course is to understand how to make an electromagnetic and thermal design of permanent magnet synchronous machines from any given set of specifications. The knowledge is applied by designing a machine for an industrial application.
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¹ Mallen togs fram av Jan Scheffel, studierektor Alfvénlaboratoriet

Kursens pedagogiska utveckling I

Beskriv de förändringar som gjorts sedan förra kursomgången	<p>The concept of laboratories has been replaced by common tasks to be completed by each student, with more time set for the first 3 tasks. The lecture hours have been increased from 8 to 12 hours, with improved version of overheads. The course is now using Bilda for all the communication of documents between students and teachers (in both directions). The models in the design tool are more advanced and the tool named Emetor is web-based (running under Matlab before). More emphasis has been put on field-weakening (common task now) versus concentrated windings (possible individualized task). With the increased number of students, the presentations have been carried out in 2 separate groups, mixing students each time.</p>
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Kursansvarigs berättelse

Helhetsintryck Positiva synpunkter	<p>Really positive The course went well even with double as many students as last year (max. number +1). The students showed clearly improved skills in communication scientific results after the course.</p>
Negativa synpunkter	<p>Part of teaching team going to conference(s) during the course put extra unwelcome load on rest of the team. The guidance could have been better on some technical aspects of the projects for a few students. The number of projects (5) might have been too high to reach good synergy between projects.</p>
Syn på examinationen	<p>The examination is fitting really well with the course structure. The number of pages of final reports to be read before the examination turned out to be really high a full set of students in the course.</p>
Syn på kurslitteraturen	<p>Students learned to use new sources such as articles and M.Sc reports. However, a compendium could be an improvement, compared with slide handouts.</p>

Teknologernas syn på kursen

Kort sammanfattning av studienämndsmöte eller studentenkäter	<p>Student questionnaire The students were interested by the course, and they all knew what was expected, with a fair level for the examination (100%). They worked more than was expected (77%) and 66% were happy with the feedback they received during the course from the teachers but only 50% from the students. At the same time, 50% did not get so much from opposing on other students report. The lecture material is OK for 66% but 33% give an average mark. 66% of the students would be happy with only 3 "training" presentations , instead of 5.</p>
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Speciellt intressanta kommentarer

The opposition reports should have received feedback as well. An opposition template was asked for.

- " project is the most beautiful part of the course. Intensive work let me learn a lot."
- "The course was excellent and one of the best I've ever attended. Thanks for everything."
- "learnt a lot about synchronous PM motors - improved my report writing and presentation skills"

Var förkunskaperna OK?

YES

Kursens pedagogiska utveckling II**Hur förändringarna inför detta läsår fungerade**

- Bilda was a success to exchange reports, feedbacks and presentations.
- Reduction of load for students (postponed deadlines) at beginning was really good.
- Emetor was no problem to use for the students.
- Lectures were more serene with extra time but handouts are still a bit too little as course material, even with extra literature (articles, MSc theses, data sheets, etc...).
- The computers used to run FEM simulations are getting really old and storage capacity of simulation files should be increased.
- A maximum number of pages of the final report should be strongly recommended, with an earlier submission for student opposition and possibility to submit an improved version before oral examination.
- Create a pool of individualized task descriptions (same coming from year to year), containing a list of subtasks with a minimum number to be run, and extra tasks for more ambitious students
- Definitions of different inductances should be agreed upon within the teaching team and a better reference for the field-weakening task should be found (no p.u. normalization).
- Students should be encouraged to correct their reports, first thing after getting teacher's feedback.
- An opposition form should be proposed with a list of aspects to be looked at.

Förändringar som bör göras inför nästa kursomgång**Övrigt****Kommentarer**

This course is a challenge for the teaching team as well in terms of invested time per student. However, all the involved teachers believed their efforts put in the 2008 course were worth the results produced by the students.

Instruktioner

- 1) Fyll i fälten nedan **inom en månad efter kursens slut**. (Viktigt krav från KTH!)
Skicka sedan till studierektor (som vidarebefordrar till prefekt och programansvarig).
- 2) Försök att **ge så kompletta uppgifter som möjligt**.
Tänk på att kursanalysen blir ett hjälpmedel inte bara för teknologerna, utan även för Dig som lärare.
- 3) Om du behöver flera rader, är det bara att trycka retur; fälten expanderar automatiskt.
- 4) Nomenklatur: F - föreläsningar, Ö - övningar, R - räknestugor, L - laborationer
- 5) Med "prestationsgrad" avses antalet presterade poäng hittills på kursen (inlämningsuppgifter, projektuppgifter, laborationer etc.) dividerat med antalet möjliga poäng för de registrerade studenterna.
- 6) Med "examinationsgrad" avses antalet studenter av de registrerade, som klarat samtliga kurskrav. Kurssekreteraren hjälper gärna till här.
- 7) **Teknologernas syn på kursen** skall framgå genom diskussion med dem (vilken sammanfattas i kursnämndsprotokoll) eller genom sammanställning av utdelade enkäter.

Det är viktigt att kursanalysen tydligt **visar utvecklingen av kursens kvalitet** från ett läsår till nästa.