

Kursanalys¹

Kursdata

Kursens namn	Design of permanent magnet synchronous machines
Kursnummer	EJ2221
Poäng	7.5 ECTS credits: 3 for oral examination and submission of final report 3 for submission of 6 status reports 1.5 for 5 presentations, 4 progress oppositions and 1 final opposition
När kursen genomfördes	HT10
Kursansvarig och övriga lärare	Juliette Soulard (Course examiner, lecturer, project) Andreas Krings (Project, Flux-support) Dmitry Svechkarenko (Project, Flux-support) Mats Leksell (Project)
Undervisningstimmar, fördelade på F, Ö, R, L	69 hours: 12 h Lectures 42 h Project support 15 h Project presentations (in 2 groups)
Antal registrerade stud.	12
Prestationsgrad efter 1:a examenstillfället, i %	88.33%
Examinationsgrad efter 1:a examenstillfället, i %	83.33%

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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Kursens pedagogiska utveckling I

Beskriv de förändringar som gjorts sedan förra kursomgången	<ul style="list-style-type: none"> • The OH lectures were improved, changing order of contents slightly. • Each student has a specific set of constraints, with 4 students working on same application (ISG, traction motor car, wind generator). • Andreas was new as project assistant. Dmitry was only planned as reserve but worked nearly as much as Andreas. • All the status reports were checked for plagiarism (sum reports 1-6) so that the student could address recognized problems in the final report after individual feedback. • A written exam was developed as complement instead of an extra task.
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¹ Mallen togs fram av Jan Scheffel, studierektor Alfvénlaboratoriet

Kursansvarigs berättelse

Helhetsintryck	<ul style="list-style-type: none"> • A tough year with record number of students (12). The selection process to select students who could take the course was a nightmare (students do not respect administrative rules). PU and VU did not help. • A few more students with low grades at EJ2200 than usual involved tougher times with all aspects of project and examination.
Positiva synpunkter	<ul style="list-style-type: none"> • All the students worked hard and improved a lot. • Plagiarism check introduced due to worries. 3 students handed in so similar reports for task 3 that they must have used same Matlab code. Special meeting to re-explain the rules for cooperation (not when it is time to write code or report!). Results from Turnitin on sum of status reports could be used to show the problems and correct issues with all students before final report was submitted.
Negativa synpunkter	<ul style="list-style-type: none"> • Communication inside the teaching team and with the students could be improved in order to avoid confusion and misunderstandings (report writing): A few scientific errors were not discovered as soon as they could have been found by teaching team. • A few students had to be warned for too close collaboration, even though they each had a specific set of constraints.
Syn på examinationen	<ul style="list-style-type: none"> • The examination is fitting really well with the course structure and reflects the contents of the course and is at a right level. • The written examination proposed as complement (Fx to E) this year worked well.
Syn på kurslitteraturen	<ul style="list-style-type: none"> • A compendium would be an improvement compared with slide handouts. However, a clearer link to references would be a step forward to begin with, and maybe add lectures notes. • Some students would like the task descriptions to be more detailed to reduce burden on project assistants. However, experience from EJ2200 project talks against it.

Teknologernas syn på kursen

Kort sammanfattning av studienämndsmöte eller studentenkäter	<p>Student questionnaire:</p> <p>Students have a high or really high (91%) interest for this course and are also absolutely encouraged to study actively (75%) due to the course set-up. 91% of students had enough time to study for the course but some had to drop the parallel course. Students appreciate the feedback they get from the teaching team (availability of project assistants was highly ranked), but were confused by different feedbacks depending on different teachers, mostly on report contents.</p>
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Speciellt intressanta kommentarer

- Add "one day in the lab to see how field weakening works."
- "Divide this course into 2 periods"
- "Never actually found out what the actual or a good answer to a particular problem was. [...] better to receive design solutions [...] prepared by teaching team [...] to compare our work to their's."
- "course leader of student should read final report as well, not another teacher."

Var förkunskaperna OK?

Required pre-requisites according to the course Electrical Machines and Drives (EJ2200) are sufficient. Student without comparable pre-requisites had to drop to the course. Students with weak results at EJ2200 were in difficulties.

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

- Lectures went smoothly, even with stress incurred by ICEM during week 2.
- High load for project assistants, and extra tough with the weakest students and the number of different applications.
- Many different project variants did not help problem with "plagiarism". Turnitin check did.
- Written examination was a good way to examine the student who received Fx.

Förändringar som bör göras inför nästa kursomgång

- Improve the communication between teachers, as well as between teachers and students by having head teacher present at Wednesdays' project times (check strange results from previous week).
- Reduce number of projects
- Include plagiarism check earlier then after status report nr 5.
- Improve the course OH by adding lecture notes including references.
- Check course questionnaire as answers do not match questions in a couple of places.
- Move Emetor to a safer place (virtual machine) since server is to be upgraded.
- Adapt task 2 to version 10.4 of Flux and upgrade computers. Think if there is a possibility to facilitate learning of Flux (intro, demo, tutorial,...?)
- Check task description by student and project assistant to see if some of the recurring questions can be dealt with improvements of text.

Övrigt**Kommentarer**

This course is still a challenge for the teaching team due to its unusual set-up.

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.