

## Course evaluation

### ED2245 Project in Fusion Physics

Spring 2011

#### ***Comments from students after completion of the course in spring 2011***

The following is a summary of comments from 9 (of 10 students completing the course) to a simple questionnaire with the following open-ended questions:

- 1) What is your overall impression of the course?
- 2) Did you find some parts/aspects of the course particularly useful/good/interesting?
- 3) Did you find some parts/aspects of the course not useful/bad/uninteresting?
- 4) How did the course meet up to the course goals/ your own expectations?

#### **Overall impression**

- "I am happy I had a chance to take this course here, because it was really a hands-on task, instead of yet another theoretical course."
- "It was quite different from the usual courses, because there were no lectures and only little guidance, with most of the work being done on your own."
- "For me, this course was the first time I came into contact with experimental methods in fusion research. I think it was an important part of my education in fusion physics. The tasks were interesting and the applied work was enjoyable most of the time."
- "I found it very interesting and a good presentation of research works. It was also a good first step to understand the principle and difficulties of fusion. Even if we were sometimes stopped by the software or some problem with the experiment, we managed to go through these problems and find a solution."
- "We had a lot of independence during the project and at the same time, we were able to ask questions to the teacher."
- "As a student of physics, I was able to use the knowledge that I had earned in other lab courses, yet there were enough new problems, so the work did not get boring."
- "[The course gave] a very good impression and good feeling, [it was] well organized and planned, good following by the teacher and the staff of the lab."

**Positive aspects**

- "I liked to work on the real experimental setup as the researchers in KTH. This was quite interesting to see how complicated an experiment can be."
- "It has been a course where more new things were presented and not only new things about interpreting results but also about how to work in a real environment. Now, thanks to this course, we can say that we have been able to carry out an experiment and get useful and coherent results."
- "Discovering and working with EXTRAP T2R was interesting. Final presentations were also useful and enabled us to have an overview of what everyone did for their project."
- "The project is very well dimensioned in terms of amount of work and of computing/experimental part."
- "I liked that my project was hands-on."
- "I also liked that I had the freedom to choose the project"
- "I liked that I had the freedom to choose the project."
- "In my opinion the project in fusion physics was the most important course of my studies at KTH. It was the first real contact with experiment."
- "It was interesting to work with such a large machine and to learn more about diagnostics and their applications."
- "The interesting part is the experiment and all the preparations before and during the experiment."

**Negative aspects**

- "We had some problems to understand how the IDL software and programming language work. At the beginning this has slowed us in our project. The, we managed to solve these problems, but there were new problems with the measurements that we were not able to solve."
- "Sometimes we struggled with understanding IDL, which made us waste time instead of going deeper in the project."
- "I wish we could have talked a bit more about fusion as a potential energy source."
- "Actually, presentations should not take longer than agreed upon, to train ourselves for the future, when it might be impossible to take extra time."
- "I would have preferred another project with more interesting physical results."
- "Some groups had less work to do while others had quite a lot of work to do."

**Course goals**

- "The course was consistent with my expectations, an experimental and research view of fusion physics."
- "At first I thought that everything was going to like a simple report after reading some material and being present in the experiments. Instead it was nice to be part of the experiment."
- "The course reached my expectations because I learned about how to produce plasma, its characteristics and several ways to get them."
- "I think the course did a very good job of introducing the student to experimental methods in fusion research."

<b>Pre-knowledge</b>	<ul style="list-style-type: none"><li>- "The course was related to my field of studies and I could use my previous theoretical knowledge to perform the experiment and the project."</li><li>- "Since I did not come from the Electrophysics master, things were sometimes harder to understand or took more time than for the others."</li></ul>
<b>Course format</b>	<ul style="list-style-type: none"><li>- "I liked that we did not have someone watching over us like a mother-in-law at every step."</li><li>- "I had hoped for a hands-on project like this, but I had not expected it."</li></ul>
<b>Course literature, e t c</b>	<ul style="list-style-type: none"><li>- "Since the first moment we started to read a lot about the topic we had chosen, which gave us a lot of background and we were able to write the theoretical part of the report. The material available in the laboratory made the programming easier. Also the help of the professor and the technicians was complete. If I had to recommend a course at KTH I would definitely recommend this one."</li><li>- "The compendium is well written and gives a good theoretical basis for people (like me) who did not have it."</li></ul>
<b>Examination</b>	<ul style="list-style-type: none"><li>- "The fact that the amount of observed work in the lab seems to be an important contribution to the final grade appears a bit unfair, since some projects clearly required more presence and work in the lab while other had their focus on more complicated data analysis that could be carried out at home. I hope this was taken into account."</li></ul>
<b>Specific comments</b>	<ul style="list-style-type: none"><li>- "When we are working in groups, people always pick the tasks they are good at. Those tasks are skills that they improve immensely because they are motivated, which is good. If you force team-members to do tasks they do not like, they could also improve those skills, but get totally unmotivated. So, optimally you should let team-members choose their favorite tasks, but force them to learn from other team members. This can be done by letting the team write down who did which tasks, and let them present each others tasks as an examination."</li></ul>