SK2905 – Superconductivity and other quantum liquids, 7.5 credits

Course analysis - autumn 2021

Basic information

The course was given in period 2, autumn 2021, and had 8 active students. Course responsible was Magnus Andersson. The course consisted of two parts:

INL1 (3.0 credits): Hand-in assignments
TEN1 (4.5 credits): Oral examination

Intended learning outcomes

After finished course the student should be able to:

- apply basic theory and concepts of superconductivity
- analyze and evaluate superconducting applications
- apply basic concepts for other quantum fluids

Pedagogic development

During the pandemic, the TEN1 part of the course was examined through an oral exam. The format for the oral exam was improved for this year's course and turned out to work quite well. In the future, I will continue to exam the TEN1 part of the course in this way.

Quantitative data

7 out of 8 active students have passed the course (the remaining student took a break from his studies in mid-November)

Course assessment

The students were asked to answer a short questionnaire after the course. 3 students out of 7 answered the questionnaire.

General conclusions

All 3 students rated the course as "Very good" or "Good". From the comments given in the questionnaire, it is clear that the students were pleased with the course. Since the course consists of several parts to do for students, they wanted to have clearer grading criteria for the INL1 part and a better spread of the deadlines for the last assignments in the course.

Course material

The course material was highly appreciated by the students.

Examination

The examination methods have been under development and has turned out to work well this year. This motivates me to continue with this year's format for oral exams in the course. During the course, students have handed in problems that have either been solved individually or in group. During the oral exams, I have randomly chosen one proof from the course book and one problem from each of the four modules in the course and asked the student a few questions around the proof or the problem. In this way, it has been relatively easy to determine if the student has the required knowledge or not. Most of the work is then done during the course and the oral examination is a test that the students' knowledge corresponds to what he/she has presented during the course.

Summary for next year's course

There are two minor things that need to be improved for the next year's course.

- Clearer information about the grading criteria for the INL1 assignments.
- The course material on quantum liquids and solids still needs to be improved.