

SK2758 – Solid state physics, 7.5 credits

Course analysis - Spring 2021, period 4

Course analysis performed by

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Course design

The course consists of lectures, tutorials and laboratory work (with two labs – one on X-ray diffraction and the other on band-structure calculations). The course is examined through four quizzes in Canvas (TEN3), a normal written exam (TEN2) and a separate examination with written lab reports (LAB1). Due to corona restrictions, lectures and exercises were given on Zoom and the X-ray laboratory work was replaced by a home lab with pre-recorded data. Pre-recorded lectures from last year were available in the course room on Canvas. The written exam in the course (TEN2) was transformed into a non-surveilled home exam that tried to mimic the ordinary exam.

Student workload

The course has 7.5 hp (200 h) during period 4 and the majority of the students have spent that amount of time on average.

Study results

The course had 43 registered students among which 38 were active in some way during the course this year. The results on the different parts were as follows:

Ladok code	LAB1	TEN2	TEN3	Full course
Passed	35	19	33	17
Percentage	92 %	50 %	87 %	45 %

Associated to the course, there was also 8 re-registered students who took the written exam. Half of them passed the exam and one student obtained grade FX.

The grades on TEN2 were distributed as follows among the students participating in the examination (all courses SK2758, SK2750 and IM2601):

A: 4 students

B: 3 students

C: 10 students

D: 2 students

E: 4 students

FX: 2 students

F: 12 students

Learning environment and results from student questionnaire

In general students are satisfied with the course and the way it was given this year. In particular, the pre-recorded lecture material was appreciated as a back-up if students were not able to participate on lectures. The training quizzes to prepare for TEN3 were considered to be good for learning, but it was also perceived that the actual questions on TEN3 were somewhat more difficult than in the training quizzes. Another issue that could have been clearer from the beginning is that it is still possible to pass the course if a student misses the first quiz, since any student will be granted a re-examination on TEN3 if they pass the final TEN2 examination.

The requirement of zero errors on the quizzes in order to pass them was considered to be too hard. However, they are supposed to test basic knowledge and skills in the course which all students should be able to handle. This issue was reconsidered this year by introducing a group hand-in exercise that could give bonus points on the quiz examination in TEN3. However, that didn't work out so well, since many students did not form study groups and were not active on the group hand-in problems. Another solution has to be found for next year.

The second large development for this year's course was to continue the work to find a good way for non-proctored exams in the course. This year, the TEN2 exam was reduced to 4 hours (instead of 5 hours) and the procedures for the digital examination were simplified. However, students who have been used to exams proctored via Zoom, still found it somewhat hard to read all the instructions, which were new to them.

Prioritized course development

This is the second year the course is given in digital format and it has in general worked quite well. The pre-recorded lectures have been appreciated and should be kept available also after the pandemic. A better way to handle the pass requirement on the quizzes has to be designed, since the development done for this year did not fully solve the problem.