



Stockholm, 2022-11-23

Course analysis SF2940, HT22, P1

Course analysis carried out by:

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Course analysis based on:

- Midterm survey created by kursnaemnd
- LEQ course survey after regular exam.
- Course meeting under the course with student representatives representatives.
- Final course meeting with student representatives, and CINEK PA.
- Regular meetings with with teaching assistants.
- Results of regular exam.

All registered students were invited in week 2 of the course to actively take part in the kursnamnd. Three students chose to do so.

Course design:

- Lectures on campus (2-3 double hours a week).
- Exercises were offered in six groups, all took place on campus (2 sessions a week).
- Weekly office hours on zoom, additional office hours before the exam (and the re-exam).
- The course was organized by topics in `Modules' in Canvas.
- Examination concept: Optional mid-term assessment in the form of time limited (1.5h) assignment administered in Canvas without zoom proctoring. Midterm gave up to 15% bonus for final grade. Written exam (4h) on campus, re-exam scheduled to be on campus.

Course results after regular exam:

- A: 14.5%
- B: 7%
- C: 6.5%
- D: 10%
- E: 14%
- Fx: 14.5%
- F: 33.5%

Number of registered and re-registered students: 281. Students writing the regular exam: 200. Student's performance is slightly lower than in the preceding year.

Summary of student's opinions:

-Average response to LEQ statements does not indicate significant problems with the course.
-Students emphasized the following: They work with interesting issues. The course is *very relevant* for their studies. The course was challenging with a considerable workload for most students. The assessment was considered fair and honest. The bonussystem with time-limited assignment was highly appreciated. Students acknowledge the work of the teaching assistants and find the exercise sessions mostly helpful. Students appreciate that the course literature is available for free via KTH's library. Students appreciate the hard work done by

teaching assistants. Clearly structures Canvas page. Lectures were consider 'very good', 'informative', 'the best part of the course', 'enthusiastic teacher'.

However, due to the wide range of student's from AK3 and AK4, some students consider the course too difficult while others find the course is not to have the correct challenging mathematical level. This is also reflected in the reported workload of the students.

Summary of course meetings:

In addition to the above the following was pointed out by student representatives: The form of teaching and learning activities was considered to be very helpful. The student representatives further noticed that with this course they reach a new level in their mathematical education. However, some students have troubles understanding this step, they are used that every detail is explained in lectures at a slow pace.

For further course development the student representatives suggest to focus on the exercise sessions. Proposed ideas include to maybe reduce the number of exercises solved in on sessions, create a more interactive learning environment, and give students some time to solve exercise sessions before presenting solutions, etc. Reduce 'recap of theory'. In sum, find better ways for student activated learning. Key is finding ways that students come prepared to the exercise sessions (at least look at the problems that are going to be discussed). Whether it is really helpful (not to be confused with convenient!) to publish solutions to additional recommended exercises in the textbook can be discussed.

Students representatives were in favor of a second time-limited assignment. This can cause workload problems for students and well as teachers, yet could be considered in the future if in turn the final examination time is reduced from four to three hours.

Some students in AK3 reported that the exercise classes were very challenging for them, even if they prepared well. One can try to include more worked examples in the lectures. Some students in AK4 stated that the course should 'deepen more into theory'.

Online office hours via zoom appear to be effective and helpful, increase frequency towards to end of the course.

Examiners assessment and recommendations:

I consider the course SF2940 to be an important course for students in CINEK-TMAI AK3 and students in TTMAM AK1. In addition the course is read by students in CTFYS, as well students from data and machin. Since this year AK3 students in technical mathematics are (optionally) reading this course. The level and competencies of the students is thus very 'wide' as indicated above. Some students indeed succeed very well ('Math problems are fun') while others are struggling considerably ('Decrease difficulty', 'stressful course').

This year we had again about 281 registered students similar to HT21. For these reasons the examiner will contact SRs and PAs at the department with a request to initiate a dialogue on this course and our probability education in a broad sense.