

Kursanalys FAK3014, FAK3137, FAK3138, AK2030-AK2040

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COURSE DESIGN – Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

Note: In this course analysis answers from all connected course rounds (AK2030, AK2036, AK2040, FAK3137, FAK3138) have been taken in to account due to the high similarity between the courses. The courses share the same or almost the same lectures, seminars and exam and in reviewing the answers we have found no reason to believe that the answers are not valid for the other course rounds, except when it comes to those seminars and lectures not shared. Total number of respondents 117/467.

The 4,5 credits version of the course consists of 4 campus lectures, 7 video lectures to watch at any time, 2 flipped classroom-campus lectures, seminars (1,5 credits) and an exam (3 credits). The 7,5 credits versions on master level also complete a group work "Project part" assignment related to articles in their field (3 credits). The longer version on PhD level also takes an essay part, where relate the course to their field of research (3 credits). The FAK3014 course does not take the lecture on risk or ethics, one seminar less (1 credits) and a shorter exam (2 credits).

Since period 4 2019, which was last offering, the course memo has been expanded and the PhD courses has been added to the general schedule.

THE STUDENTS' WORKLOAD – Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If these is a significant deviation from the expected, what can be the reason?

The average workload corresponds to the expectations, for most of the courses, with more students reporting working less than expected than reporting working more than average. The exception was AK2040 where students reported working, on average, half the expected hours.

Some students commented on that the number of assignments made the workload heavy, while others commented that the assignments helped them stay on track. The comments regarding the video lectures displayed a similar tendency, with some commenting on that they found them annoying because it took them a long time to watch the videos due to rewinding to make sure they understood and pausing to make comments, while others noted this as a strength and praised this possibility to learn thoroughly.

The course analysis meeting did not find the number of hours spent per week to indicate that any particular change had to be made.

THE STUDENTS' RESULTS – How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

Practically all students finish the seminars during the period, and the project part for those who have that. This means that the students' result is best determined by the exam.

Result:

2018 period 1 – 2019 period 4, number of exams 1110. Prefixes AK/FAK/F1N excluded. For fewer than 3 exams, results have been hidden.

	2030	2032	2034	2036	2038	2050	5112	5113	5114	3014	3024	Total
A	11%			13%	13%	12%						12%
B	12%			12%	21%	8%						12%
C	17%			14%	13%	4%						14%
D	12%			15%	11%	32%						14%
E	9%			10%	9%	12%						10%
F	21%			21%	21%	12%		40%		33%	67%	21%
FX	19%			14%	13%	20%						15%
P								60%	100%	67%	33%	2%

n 257 1 1 738 47 25 1 10 5 21 3 1110

2019-10-23 exam, number of exams 444. Prefixes AK/FAK/F1N excluded. For fewer than 3 exams, results have been hidden.

	2030	2036	2038	2040	2050	5113	3014	3137	3138	Total
A	22%	23%		25%	28%					22%
B	16%	19%		22%	20%					18%
C	18%	19%		25%	12%					18%
D	14%	12%		3%	24%					11%
E	7%	6%		3%	4%					5%
F	17%	11%		10%	12%		27%	40%	25%	14%
FX	6%	10%		13%						8%
P							73%	60%	75%	4%
<i>N</i>	144	176	2	72	25	1	15	5	4	444

Notes: in period 1, course F1N512 was renamed to FAK3136, course F1N513 was renamed to FAK3137, course F1N514 was renamed to FAK3138.

Students from the period outperformed the year average, as well as the same period last year. Passing rate for the exam was 78%, compared with year average 64% and last year's period 1 result of 58%. One possible interpretation is that the changes made over the year, such as the addition of more video lectures has improved student learning. Another possibility is that there is no particular explanation, and that the main reason is that the questions chosen for the exam happened to be about areas that many students knew.

Regarding the general increase in grades above passing, one explanation could be that the bonus point system, which can increase students' grade if a passing grade is achieved, has played a part: students may have cheated by getting the answers from their peers or previous students rather than finding the answer on their own. However, given that this cannot explain the general increase in passing rate, this might be less probable.

OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT - What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?

The overall impression of the learning environment is that it is positive. For AK2030 with 42 respondents, and for AK2036 with 67 respondents, all aspects of the learning environment are on the positive side of the scale, with a score of 5-6, which corresponds to between +1 and +2 out of on a scale from -3 to +3. The exception is question 1 and 4 where AK2030 rated it 4,8 and 4,7 respectively: "1. I worked with interesting issues", and "4. The course was challenging in a stimulating way" (equalling just below +1).

AK2040 with 13 respondents were positive for all except question 7 with a score of 3,8 ("7. The intended learning outcomes helped me to understand what I was expected to achieve"), while otherwise scoring between 4,3-5,8. Similarly the PhD level course FAK3014 with 4 respondents scored 3,7 on question 7, while otherwise scoring between 4,3 and 6,5. The PhD course FAK3137 with 4 respondents scored between 4,7-5,5 except, question 17 which was scored to 6,78 ("17. My background knowledge was sufficient to follow the course").

The course analysis meeting agreed that this feedback indicated that the course, in general, provided a good learning environment, according to the students.

ANALYSIS OF THE LEARNING ENVIRONMENT – Can you identify some stronger or weaker areas of the learning environment in the polar diagrams - or in the response to each statement - respectively? Do they have an explanation?

International masters students of AK2030 and AK2036 rated question 16 higher than Swedish master students' year 4-: "16. The assessment on the course was fair and honest". It might be interpreted to indicate that Swedish students found the exam to be less fair, or alternatively that international students were more used to such an exam or such a grading scheme. Another thing to consider is how the statement was interpreted. Some text-comments indicated that people answering 0 did so believing it represented neutral since the exam was then not yet corrected, which could have been better indicated by the option "I don't know", which might have lowered the general average if not necessarily explaining the difference between the student groups.

International exchange students of AK2030 rated the course generally significantly lower than other students, which might be explained by one text comment stating that the commentator had already taken a similar course at the home university, and a

master program responsible confirmed that this was the case for several students. This might have made the course feel less interesting.

“1. I worked with interesting issues” – the course analysis meeting discussed if a further emphasis could be placed on showing the relevance for the student’s field of studies, perhaps by including more examples from different fields of study.

“4. The course was challenging in a stimulating way” – the course analysis meeting discussed the answers from students who rated this aspect of the learning environment was to be interpreted as thinking it was not being challenging or as being challenging in a non-stimulating way. Either way, the bonus point system can be discussed in this context. While providing incentive to stay updated with the course, some students found them burdensome and tough. However, it was discussed in the course analysis meeting, others found them tough but helpful and thus challenging in a good way.

There are several ways in which a course can be challenging (in both a good and bad way): when it comes to understanding the content, when it comes to keeping up, or when it comes to technical aspects, to mention some. With technical aspects I here refer to handling the course webpage, understanding what was to be done etcetera. This type of challenges I presume never to be stimulating, and some feedback indicated that this was a problem. One aspect to work on is thus information and information flow, as well as requirements and page structure. The second type of challenges is at best neutral when it comes to how stimulating they are. An overview of deadlines and the logic behind them could be helpful. Finally, the challenges with regards to understanding the content is surely often stimulating. However, making sure that there is course literature for all aspects of the course could be one thing to improve, and collecting the texts and articles together in a form that is easier to survey might be another way. Additional challenges such as ungraded exercises to do on your own, might be a further improvement.

ANSWERS TO OPEN QUESTIONS - What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?

As might be expected with a course of this size, there are both examples of commenters liking and examples of commentators disliking most parts of the course. Looking at the text comments for all course codes it is clear that the seminars are highly appreciated and might be the most popular aspect of the course, followed by the video lectures. The quizzes and assignments are also mentioned several times.

On the other hand, there were also negative comments about the seminars, video lectures and quizzes – although looking purely quantitatively not anywhere near the positive comments. Particular feedback related to different styles of the seminar teachers, that some students came unprepared to the seminars and that the video lectures were longer than stated. Some found the structure of the course hard to follow. However, there were also positive comments about this, comments that stated that the structure as helpful.

The flipped classrooms were also mentioned, and an issue that some mentioned is the problem of being heard and daring to speak in a lecture room of close to 500 people. Others reported that they felt it did not increase their learning, and that misunderstandings were not addressed and that focus was more on in-depth understanding.

Several comments discussed the exam: that it was too long or too much content, that one should be able to choose between questions in part II, that the multiple choice questions in part I were too hard. Some suggested a written assignment instead, while others thought completing the seminars should be enough to pass the course.

The project part for AK2040 was also mentioned. Since this project part is quite theoretical, students from applied mathematics could not see the relevance for their field of study. Explaining the relevance to students, or changing the content was suggested.

The project part for AK2036/AK2038 was also mentioned in the text comments. Some noted that not all group members contributed equally, others that feedback from other students was rude or unhelpful. Others asked that the submissions be graded by a teacher before the exam.

PRIORITY COURSE DEVELOPMENT - What aspects of the course should primarily be developed? How could these aspects be developed in the short or long term?

Some changes could be/has been implemented right away:

- Add subtitles to video lectures – subtitles are available for most of the video lectures, and simply remains to be added.
- Change speed of video lectures – this was a Canvas bug, and speed change is available.
- Names of files in Canvas – some of this has already been done, some more consistent naming of the rest remains.
- Course memo covers several course codes – for period 1, the content of the course memo was increased to cover all relevant information, including instructions for the seminars, project part etcetera. The idea was that having the content in one document would make it easier for a student to find the information, for instance by searching, rather than having to look at a number of pages. Since the different course codes take almost the same material, one document for all course codes was created, to make sure no changes were missed between the documents. This might, however, made it less clear for the student what to do, and thus defeating the purpose. For future periods, a different strategy will be considered.

- Seminar introduction – Some noted that the start of the seminar felt more like an oral exam. During period 2, we introduced discussion questions at the start of the seminar that the students had prepared before, asking them to relate the seminar concepts to their own field of study. The results, from the teacher perspective, were somewhat mixed and if the idea is kept the questions will have to be improved.

Short term development:

- Course literature – During period 1, the first parts of new additional course literature was released. Finishing this material would help the students.
- PhD course information – information was released shortly before course start. This will be improved in future periods, and previous course memos can be uploaded to the course page so that students can get an understanding. The PhD courses use the central scheduling system since period 1. Since this is not common for PhD students, I believe students were unaware that the schedule was available already in July. Adding such information in the course pages could also help.
- Overview of bonus point technicalities and deadlines – to make sure it works.

Long term development:

- Exam: There is an ongoing discussion about the exam among the teachers, but no immediate changes are planned. Given the grade distribution, it does not appear to be too hard – which of course is not the same as saying it is optimal. While continuous improvements should be done, rather than making immediate big changes, it will probably be more helpful to make the course content clearer in terms of how it is packaged and communicated, see below.
- Bonus point system: the course features a bonus point system. This system is complicated both from an administrative standpoint and from a student standpoint. That might be acceptable if we are certain that it helps with learning. Increasingly, this has been put in to question. While I think that some sort of incentive is helpful, and perhaps even needed to ensure that students pass the course given the number of non-campus lectures, the actual questions and the actual system will probably need to be replaced. This will take time and work, and needs to be done in combination with work regarding how the course content is packaged and presented. Ideally, a student who has seen all lectures, taken all assignments/quizzes, read the literature and been to the seminars should not need much additional study time to pass the exam. For that, I believe there is a long way left to go.
- Real life examples: It would probably be helpful for students to see the relevance of this course if we could provide them with examples of how the concepts were used in their field of study or at least related fields of study. Such a list of examples would best be compiled in close contact with master program responsible persons from the different fields.
- Social science track: the social science course codes (AK2032, AK2038, FAK3136, FAK3138) take almost the same content. Some students reported that there were topics they expected to have been covered in the course that were not. It might be necessary to revise the social science track and increase the difference in content to suit the needs of the students.