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## Report - AK2036 - 2020-03-11

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Respondents: 1  
Answer Count: 1  
Answer Frequency: 100.00%

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Please note that there is only one respondent to this form: the person that performs the course analysis.

**Course analysis carried out by (name, e-mail):**

Johan Berg, jgberg@kth.se

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**DESCRIPTION OF THE COURSE EVALUATION PROCESS**

**Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.**

The course evaluation has been done using the LEQ.

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**DESCRIPTION OF MEETINGS WITH STUDENTS**

**Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)**

A course evaluation meeting has been arranged, to which student representatives from the student unions and program responsible persons have been invited, as described in the rules decided by the university president.

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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, AK2050) 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 34/154.

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, three seminars (1 credits) and a shorter exam (2 credits).

Since period 1 2020, the questions before the seminars have been changed.

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### THE STUDENTS' WORKLOAD

#### Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there 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. There was a larger spread of answers in AK2036 (7,5 credits), however, only 2/14 worked more than the suggested 20 hours/week.

The meeting discussed if there is a problem that students perceive some assignments, which are optional, as mandatory. These optional assignments appear as "deadlines". However, given that the average student now works roughly the suggested number of hours per week, this is probably not a large problem in actuality, but more a psychological problem. Such a problem might have a different type of solution, for instance the wording of the assignments might play a part.

AK2050 and TMLEM students taking AK2036 complete a specially designed project part of 1,5 credits or 3 credits respectively. One student (out of 5) of AK2050 reported working significantly more than expected. For AK2050 we cannot know whether the respondents completed the first 4,5 credit part of the course in period 1 or everything in period 2. The meeting discussed if the time the various course activity might take correspond to the number of credits (1,5p) for the project part, and if there was a sufficient difference between the 3 credit version and the 1,5 credit version of this project part. Following up on time requirements for TMLEM students should be done before next offering of this part.

### 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 exam is what best reflects the students' result in the course.

Result:

Resultat:

2018-12-16 - 2019-10-23

Betyg AK2030 AK2034 AK2036 AK2038 AK2050 AK2040 Grand Total

A 17% 17% 14% 23% 25% 18%  
B 13% 15% 24% 16% 22% 15%  
C 18% 100% 16% 14% 10% 25% 17%  
D 13% 13% 10% 32% 3% 13%  
E 8% 10% 10% 3% 3% 9%  
F 18% 16% 24% 13% 10% 16%  
FX 13% 13% 5% 3% 13% 12%  
n 290 1 616 21 31 72 1031

2020-01-14

Betyg AK2030 AK2036 AK2050 Grand Total

A 32% 17% 24%  
B 11% 10% 50% 12%  
C 14% 32% 21%  
D 14% 12% 12%  
E 9% 2% 6%  
F 11% 22% 25% 17%  
FX 9% 5% 25% 8%  
n 44 41 4 89

The year average passing rate was 72 %, for the period it was 75%. There was an increased number of grade A for AK2030, otherwise there are no noticeable differences. Nothing indicates that there is any special reason for this, and the meeting agreed with this assessment.



## STUDENTS' ANSWERS TO OPEN QUESTIONS

### What does students say in response to the open questions?

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The course analysis meeting discussed the flipped classroom. Some commentators noted that it is hard to speak in such a large environment as a lecture hall, so sampling students' opinions verbally was not very useful. A suggestion was to make it into a more seminar style session. Many also ask inauthentic questions just to get the bonus points, and to some it was unclear what the benefit was. A Q&A session without any bonus points might be better in this regard. Another discussed aspect was the language. Some students state that it is hard to understand because of the hard language. To some extent, this might be due to the new terminology introduced in the course, while being Standard English terms might still be perceived as new and foreign. Learning the terms and concepts is a part of fulfilling the intended learning outcomes. It might also be due to unnecessarily complicated formulations.

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## ANALYSIS

**Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant differences in experience between:**

- students identifying as female and male?
  - international and national students?
  - students with or without disabilities?
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AK2036 (with 15/70 respondents) scored between 4,9 and 5,8 on all questions, corresponding to 0 - +2. The weakest area is "I was able to practice without being graded". As has been discussed in previous analyses, there are multiple interpretations of this question. All course activities are technically graded or indirectly graded: the seminars are pass/fail, and the quizzes give points for the exam. However, having prepared and working actively is enough to pass the seminars, and they were thus intended these as an occasion to practice without being graded. Most of the quizzes are also possible to do several times, and hence allows for practicing. It is also possible that the students (rightly, perhaps) interpret it as a scale, so that scoring +1 means that there is possibilities for practicing without being graded, but that there are other courses (or other imaginable courses) where this is much more prominent.

AK2030 (with 15/53 respondents) were more mixed in their opinions. Question 1, 4 and 7 even dip below 4 points (corresponding to 0), with the lowest for question 4 with 3,2. These students thus reported problems in the area of meaningfulness, with particular issues with how challenging it was. However, the breakdown shows that these students were polarised in the opinions, a handful of students were strongly negative for many of the questions, whereas the others had varying opinions. The most positive aspect of the learning environment was question 17, which is about background knowledge.

AK2050 (with 5/31 respondents) were the most positive, with scores ranging from 5,8-7 for all questions. A possible interpretation for this difference is that students interpreted the questions to be about mainly the Ethics of Medical Technology project part, which only they are taking. Another possibility is that this part influences their perception of the course heavily. A final interpretation is that this course is more relevant for students from the masters' programme of medical engineering, or at least more clearly relevant.

The differences between student groups does not allow for a clear-cut interpretation. Only AK2030 had sufficient respondents from different student groups to render any result, and the difference between Swedish students' year 4-5 and international master's students varies over the questions in no discernible pattern. The largest difference is for question 16, with 5 for international masters students and 3,3 for Swedish students year 4-5: "I received regular feedback that helped see my progress". Perhaps the international master's student interpreted quiz scores as feedback, while Swedish students did not.

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#### **PRIORITIZED COURSE DEVELOPMENT**

##### **What aspects of the course should be developed primarily? How can these aspects be developed in short and long term?**

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Some changes could be/has been implemented right away:

- 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 particular cases. This has already been improved for period 3.

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.

Long term development:

- Exam: There is an ongoing discussion about the exam, in particular, if there are better ways to align the examination with the knowledge skill sets with we want to leave the students. No clear suggestions have emerged that allows for simple implementation.

- Bonus point system: the course features a bonus point system. We asked specific questions about this system in the survey, and the result was that students had a positive perception of this system - it helped them study, and they would not have done it without the attached bonus points. However, they do not believe the total bonus point score correspond to their level of knowledge. The work with the changing the bonus point system is thus ongoing, and additional information about how to design such blended learning activities must be gathered.

- 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. Such work remains.

- Time allocation for TMLEM students - we should investigate how much the TMLEM students are assumed to work on this part before the next period 2, 2020.
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