Report - MH2039 - 2019-11-13

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

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):

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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.

The course begins with three introductory lectures, followed by eight mandatory classes where students are shown examples and then practice calculations. In parallel with this, students perform a small group project where they read about the processes needed to extract a chosen metal. The students then submit a written report and give an oral presentation on their projects, both of which are examined. They also complete a home exam, which contains calculation exercises.

THE STUDENT'S 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?

Students reported working a mean of around 10 hours per week. The course was a total of seven weeks long, so this means that the mean student worked for 70 hours. The intended working time for the course (6hp) is 160h. Only one student reported working this many hours.

Some students commented that they wanted more practice questions and would have done more work if more was given to them. This could explain the low time commitment and will certainly be fixed in future editions of the course.

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 polar diagram indicates that most students founds the course meaningful, but not especially challenging. This is always going to be the case, since this is the first course of the master's programme and must account for differing levels background knowledge in metals processing - those students who have seen the material before will find the course is not challenging, but those who have never met such concepts before will probably find it very challenging. This low perceived level of difficulty is also a good explanation for the low time commitment that was reported. It is, however, difficult to suggest how the level of difficulty could be increased without making the course impossible for students with less experience of metals processing.

One respondent said that there was not enough time to practice calculations in the class and that the atmosphere was too "serious" for them to feel able to talk. More online questions with answers would help with this issue, as would reducing the number of "exercises" and replacing them with "lectures" where calculations are practices less formally. Another answer suggested more work in pairs during exercise sessions. Perhaps a "pair, square, share" approach would work here as well.

One group of students did give much lower scores in all questions than the group "International master's students", but they did not identify themselves, so it is not possible to draw conclusions about the reasons for this.

ANALYSIS OF THE LEARNING ENVIRONMENT

Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?

The students were positive about the learning environment being open. The classes were generally organised to be a dialogue with a lot of student interaction and contributions. This is a strength of the course. The students felt that they only had an average level of togetherness with their peers, but this is reasonable, since the course is the first in the master's programme and many students are new at KTH. We allowed students to pick their own research groups, but it was evident that friends worked together and people did not mix much. In future years, we may assign arbitrary/random groups to aid mixing and building a more "single class" atmosphere, rather than having several "groups of friends" in the class.

The students also want more opportunities for practicing the calculations in the course, receiving feedback on their progress and learning extra skills where possible. It is certainly possible for us to create practice questions with answers using Canvas to grade them to achieve these aims.

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?

The students were confused about learning goals, which is a result of the English learning goals on the Course Web and syllabus being out-of-date. The Swedish goals are correct, but the translation into English was not updated this year. Once we realised this, we were able to communicate it to the students, but still some comments revealed that there was confusion, despite additional information being given on Canvas to clarify the learning goals. This must be fixed for 2020.

Students were positive about the way in which the course was examined, but want more detailed instructions about tasks and more optional tasks for extra practice of calculations. There were suggestions to add an industrial visit and to lecture about more types of metal. Other courses include industry visits and this can be communicated to students in future years. The coverage of other metal sis difficult in the timetable of th course and is part of the reason for the projects, in which the students present such information to their classmates. This seems to work well.

Future advice centred around starting the group project early and making sure that all calculations are practices when they are introduced in the course, so that they are uderstood before more complicated examples are taught. This is already the advice we give.

One reply indicated that the calculations were similar to those in MH1027 and MH1029. This would certainly make the course less imteresting for Swedish students. However, international students will not have taken these Bachelor's courses and so it is difficult to see how the calculations could be changed. The course description could incldue a statement to this effect, so people wo did their Bachelor's degrees at KTH know of this in advance.

PRIORITY COURSE DEVELOPMENT

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

The course learning goals must be clearer - this is straightforward to fix for next year. The goals are clear and new in Swedish, but the English translation is out-of-date. Next year, this must be checked carefully before the relevant deadline in March.

Issues of gender equality and circular economy in the metals industry will be introduced.

OTHER INFORMATION

Is there anything else you would like to add?

A meeting with one student raised the possibility of introducing one or more topics from the advanced thermodynamics courses to give the students more time to understand those ideas. This will be considered before the 2020 edition of the course.