Report - MH2101 - 2021-02-21

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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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.

Students were actively encouraged to provide feedback during the course, and immediately following the teaching. A LEQ was sent out and all students were given the opportunity to respond to it. Students have also been invited to provide personal feedback in response to this evaluation and I (the course leader) have offered to hold a large group discussion, if students are interested. To my knowledge, none of the students in this course round were disabled and the respondents identifying as not disabled gave identical scores as the overall result, which suggest no respondents identified as disabled. Both male and female students were given the chance to respond, but only female respondents were identified as female in the feedback - this is most likely because a minimum of three people must respond and identify as part of any group (male/female/, disabled/non-disabled, etc.) to generate a group breakdown. All of these students also identified as international master's students, which reflects the backgrounds of the students in the class.

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.)

Due to Covid restrictions, meetings with students were severely restricted. Students were invited to provide feedback, including by Zoom meetings and several discussions were held immediately after some lectures to address student needs during the course. Students were also been invited to provide further feedback and suggestions for improvement, based on a draft of this evaluation.

COURSE DESIGN

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

The course consisted of twelve Zoom meetings and a laboratory exercise that was held on Campus. Eleven of the Zoom meetings were used for lectures, a total of nine by the main teacher and two from the powder metallurgy industry (although these were spread over three occasions due to the availability of industrial speakers). One of the twelve Zoom meetings was used for a debate on sustainable development, in which students acted the parts of people in a controversial project, either for or against the development with focus on sustainability issues.

Examination occurred in three stages: a report on the laboratory exercise submitted one week after the session; a home assignment submitted after the end of the course and an exam. Due to Covid restrictions, the exam was taken at home and students were permitted to refer to notes during the exam.

This was the very first time the course has run, so there is no previous version with which the current offering can be compared.

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 total workload of the students was lower than expected in most cases, although one respondant worked more than expected. The course lasted for approximately twelve weeks, including Christmas. For the six credits, an expected workload would be 160 hours. Of the four respondents, one worked an average of 18-20 hours per week, for a total of 216-240 hours, although it might be slightly lower than this if the student took a vacation over Christmas. One respondent claimed to work 9-11 hours, which is only slightly below the intended workload (approximately 120 hours). The remaining two respondents claimed to work only 3-5 hours per week, for a total of approximately 50 hours. Clearly this is less than intended in the course design.

Possibly, the lower-than-expected workload of two of the respondents was due to a lack of exercises during the course or other course commitments that did not demand specific work during the course. The respondent who answered 3-5 hours workload per week described the course as "manageable" and not "too easy" or "easy", so it seems that the workload was appropriate, but this clearly falls short of the nominal 40 hours per 1.5 credits and some additional mandatory exercises may be helpful in this regard, which could also help improve understanding. I pla nto include such exercises (e.g. weekly quizzes) in the course for 2021.

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?

This is the first offering of the course, so there is no comparison to be made. However, there was a wide spread of results. Out of 13 students, 1 received grade A, 2 grade B, 5 grade C, 2 grade D and 2 grade E, which seems fair. Within each of the home assignment and exam, there were variations, with students tending to do well i none or the other, but not both. Only one student, who achieved the grade "A" scored well in both exam occasions.

STUDENTS´ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

The lectures were popular and one student even liked the chance to discuss issues with other students, which contradicts the lower score for being able to collaborate and discuss with other students, but not entirely inconsistent, as the score for this question was not especially low (5.0 /7). The combination of exercises and assignments was also received positively by one student.

Two respondents requested more laboratory sessions and this was actually the intention when the course was first created. There were two laboratory days, which were supposed to be for two separate exercises. However, Covid restrictions required us to run smaller groups, so we decided to run one longer exercise with smaller groups, with different students on the two available days. In the future, more exercises can certainly be done, especially once Covid restrictions end and we may be able to visit a company, instead of having them give lectures in the course. I will take this up with the relevant companies/organisations!

One student suggested that future students should get an understanding of the course before starting. I interpret this that they were expecting something different, possibly more focus on additive manufacturing. I shall look at the public course information carefully to ensure the course contents are made as clear as possible. I am open to suggestions from students on this! Other suggestions to future cohorts is to start the home assignment earlier and be thorough during the course - this is good advice and I shall share it with the students in the next course offering.

One student was very dissatisfied with the home assignment and suggested it should either be downgraded in weight or used only as an alternative to exams. I feel strongly that an industrial-style home assignment should be included, as do companies in this sector who helped design the course, although I am very happy to discuss how the assignment could be changed and I remain open to suggestions from students as to how this could be achieved. I will also dedicate more time in the next course to explain the assignment. However, most students did a good job adapting to the challenge set to them and the assignment is a fundamentally technical exercise, similar to an essay question in an exam.

The sustainability debates were received positively, although one student felt as though some people did not take it seriously. Perhaps it could be graded in some way - students could be asked to summarise their arguments in a short report (say, one page) and submit it, to ensure everyone prepares. Participation during the debates themselves is something that is difficult to ensure, but the moderator can make a bigger effort to ensure people take part, instead of allowing the debate to develop naturally. I and the other moderator agreed to have minimal input to allow students to develop conversations and arguments, but this can be changed to a more controlled debate without much trouble.

One respondent asked for the course structure to be changed, but another liked the structure. A third student asked for a second lab session, and this can certainly be done. Students did not want any of the current content to be removed, but sustainability could be covered more. I will consider how this can be done in the next course offering, within the limits of the timetable. One suggestion was to have a debate on powder safety - that sounds very interesting and I will seriously consider it. Perhaps having a debate between company executives of a powder company and health inspectors/union representatives would work well! I will ask companies to help organise that. I wanted to bring companies to KTH for an evening event but could not due to Covid. Perhaps this debate could happen then.

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

All students scored the course 7/7 for interest. Students also scored the course highly for being "challenging in a stimulating way" and being able to get support if they needed it. The two questions from the questionnaire with lower scores, although not especially low (5.0, 5.3 and 5.5 out of 7, receptively) were: "I was able to learn by collaborating and discussing with others", "The assessment on the course was fair and honest" and "I could practice and receive feedback without being graded".

During the course, the interest of the students was clear and it is very pleasing to hear the enthusiasm in lectures. I was also very happy to provide support and I am pleased that students felt supported. Clearly, the transparency and perceived fairness of the exams must be improved, although I did grade the exams anonymously, and the multiple choice part of the exams (introduced in response to Covid restrictions) was graded automatically by Canvas.

One student felt that the assessment was not fair and honest. This is, of course, a disappointment to me as a teacher. I will work very hard to make the examination more clear. I will devote more time to explaining the rubrics (marking schemes) for each examination event. I am still happy to hear suggestions about how the examinations could be improved from the students who took the course in 2020.

OVERALL IMPRESSION
Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

For the first year of a course, I am happy with the evaluation of the students and the fact that the majority of the comments were positive. Of course, any negative comment is somewhat disappointing but I will use them constructively to improve the course for future cohorts, especially with regards to the exams.

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 difference in experience between:
- students identifying as female and male?
- international and national students?
- students with or without disabilities?

A large amount of written material was made available for students to review and the intention was for students to have the freedom to do so in their own time. For this reason, recordings of the lectures were also made available via Canvas. One respondent even commented that they used these recordings to make notes. One area of improvement for the next course offering may be to set weekly exercises that must be completed to ensure work is done each week, but I shall ask the current students for any suggestions on this matter.

Female respondents seemed to feel less able to collaborate, as they scored the relevant question (Q21 on the LEQ) lower than the overall average score (4.3 vs. 5.3). My initial plan was to use breakout rooms more extensively in the lectures, to allow small group discussions, but time did not permit this. I will aim to use the lecture time more efficiently so that I make time for such breakout rooms (or small group discussions if we return to campus-based lectures) I also planned for all assessed work to be done individually and perhaps some group work would help students to support each other and improve understanding.

All respondents were international master's students and none were disabled, so no analysis is possible about the breakdown of opinion based on these classifications.

PRIORITIZED COURSE DEVELOPMENT
What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?

- Explain the course content better in information material.
- Ensure time for small group discussions in lectures to enable collaboration between students.
- Consider a revision to the home assignment to make it less daunting to the students.
- Make the examination assessment clearer.
- Develop a second lab exercise and/or industrial visit(s)
- Consider an additional debate on powder safety.

OTHER INFORMATION
Is there anything else you would like to add?

Many changes were made in response to the Covid pandemic to minimise risks to all participants that changed the course significantly. I hope we can have more face-to-face sessions in the next course offering, including a second lab session and/or industrial visits.