Report - MH2042 - 2021-02-16

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):

Mikael Ersson, bergsman@gmail.com

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 use the standard LEQ questionnaire at the end of the course. The LEQ takes into account gender and disabilities (if the student wish to answer these questions).

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.)

Students have continuous meetings with the teachers during the course. This was performed on Discord and worked out very well.

The Materials Design progamme have no formal student feedback meetings on master level, this is only performed during the bachelor courses. This is a problem that is associated with the diversity of the nine different master programs that the students can pick. The total number of courses is thus very high and difficult to continuously evaluate from a programme perspective. Mainly course analysis' and direct student feedback is used.

COURSE DESIGN

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

There are five intended learning outcomes (ILOs). The examination of the ILOs is done using traditional lab exercises with lab reports and also through project report and project presentation. The lab reports are peer-reviewed by the students as part of the learning process. Furthermore there is also a newer concept called "Dragon's Den" (similar to the TV-series) where the students have video-recorded a Pitch of their project and subsequently presented this to a group of "investors" consisting of representatives from the Swedish steel industry as well as researchers from Swedish universities and institutes. An individual reflection is also used to assess the organization structure of the project group.

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?

From the LEQ questionnaire it seems that students put approximately 8 h/week on the course. This is below the expected number (160 h total for the course). However, the estimate is not easy for the students since since they most likely do not record all time they spend with their projects. One student who approximated the workload to about 9 h/week said that it was the most demanding course during the period (i.e. she /he put less on other courses). This is an indication also so the course may be in a good spot with regards to student workload.

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?

No large differences compared to previous years.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?

"It felt like a real life experience. There was total flexibility with regard to the way students should approach the different tasks the needed to complete but, at the same time, professors helped the students if they asked for it. In a few words, students were able to work on a topic they like the way they preferred."

"in the project, we worked around a topic that was industrially relevant. the video pitch was new and challenging as well"

What could be improved?

"Lab lectures with lab assistant"

"provide greater range of projects ranging from steel industry to other fields. More exercises at the start of the course are helpful"

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

The students are happy with the course and feel that it gives an insight into "real" working conditions.

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.

My impression of this course offering is mostly positive. It was sad that some students had to quit the course in the beginning due to lack of hardware to run the course software. This was not a problem in 2019 since students with poor personal hardware could use the computer rooms at KTH. It unfortunately took KTH a few weeks to arrange so that remote desktop worked for students and by that time a few had already dropped the course.

In 2019 we also had the labs IRL and this is something I will continue with in 2022 if the pandemic is over. The 2020 version where the labs were completely online was OK, but it demanded much more PhD students to help out during Discord, and it is difficult to help if students have some software problems when they have to explain over a poor internet line.

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?

Females seems generally more positive to the course compared to males. It is difficult to give a possible answer to this. I would like to have more data from several course offerings before trying an explanation.

From the LEQ it seems that there is a very large spread in the number of hours the students put into the course. This is a problem since the course is project based. Even if there were no complaints this year regarding "free riders" it is always a possibility in project assignments. This is naturally very difficult to catch for the teacher. I have employed a self-assessment of the group work at the end of the course, starting with the 2019 offering. This was done to catch such behavior. However, it may still be that students in a group put in an uneven amount of work and tolerate each other due to social interplay. Note that the groups are randomly generated. This is done to increase the social pressure and to avoid students to fall into the same behavior as always. If given the opportunity they may pick the same group members as they always do and in such a group they have their set roles, i.e. some may do the literature study, some may do the bulk of the writing, some may do the bulk of the simulation etc. With random group generation this may be avoided to some extent. In terms of efficiency, this method has a drawback of course since students have to spend some time trying to understand each other.

PRIORITIZED COURSE DEVELOPMENT

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

1. Make sure that hardware is not a limiting factor for participation in the course. Obviously a computer and an internet connection is needed, but also slower computers should be able to be used via remote desktop.

2. An increased number of tutorials can be developed. This could however, lead to a shift in focus from the projects. While knowledge of ANSYS Fluent is part of the course, it is not the main aspect. Student have to find a balance to extract the information and knowledge needed in order to complete the projects.

OTHER INFORMATION

Is there anything else you would like to add?

The pandemic made the course fully online. In the future I think it will be mostly online, with some possibility to have off-line meetings and labs if needed. The students will also have the possibility to meet off-line when they perform their project. This will be positive for most students since networking is much easier (today) off-line face to face.