

Report - AL1523 - 2023-03-30

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.

Individual answers were collected through the course evaluation form (LEQ), response rate 25%.
All students were invited to join the course committee. Two joined. One meeting was held in the middle of the course, one after the course when the evaluation was completed.
Students have also been encouraged to contact the course responsible teachers during the course in case they had comments and/or questions. Some spontaneous discussions were held this way.
Aspects regarding gender etc are covered by the default questions in the course evaluation form.

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.)

See above.

COURSE DESIGN

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

Examination:
- PRO1 - Project work, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar, 1.0 credits, grading scale: P, F
- TEN1 - Home exam, 1.5 credits, grading scale: A, B, C, D, E, FX, F

A change from last year was that the two Thematic seminars (SEM1) were explicitly designed to support TEN1 and that it was required to refer to a certain share of the lectures in TEN1. Last year students who missed more than a certain number of lectures had to write a small complementing task.

The course includes the following activities:

- Lectures: 12 "live" lectures and 3 lectures consisting of only online mtrl.
- Two seminars (SEM1). These cover themes from the lectures and were designed to support the students in referring to the lectures in the Home exam (TEN1). Students prepare written assignments in advance that are discussed during the seminars.
- Individual literature assignment (Home exam, TEN1), where students write about a sustainability challenge of their own choice and digitalization innovation solutions
- A group project (4-5 students/group, PRO1). Projects are provided from industry or KTH researchers.
- Project seminars (3). Project groups present 1) early stage draft for oral feedback, 2) near-final draft for written peer review, and 3) final report.

In practice, the course has two "streams": Lectures, Thematic seminars and Home exam constitute one stream and the Group project and Project seminars the other.

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?

With the low response rate to the course survey, we can not know. But our impression is that few students actually spend 40 hours per 1.5 credits on any course.

Discussions in the final course committee meeting indicate that the course has a workload that does not significantly differs from what can be expected compared to other courses.

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?

The students managed the projects well. Although the course already includes several elements to prevent so-called free riders in projects (group contract, compulsory supervision and compulsory attendance in project seminars where all students need to actively show their contribution), some comments in the course evaluation indicate that this can be emphasized further.

While the participation at lectures was very low in some lectures (sometimes as few as 10-15 students), those who attended the lectures were in general positive and appreciated the variety of invited experts. As the lectures are important learning activities in the course, we want to increase attendance without entirely removing flexibility of students. We will look for ways to incentivize students to attend, without adding strict compulsory attendance.

Quite a few students did not pass TEN1 at first attempt.

- Discussions in the final course committee meeting indicate that we should simplify, clarify and harmonize report instructions, report template, and grading template. Students may have focused too much in instructions to include references to lectures and thereby missed some other important instructions.
 - We should also find ways to highlight the importance of including *innovation*. One suggestion is to move the innovation lecture to the end of the course (this was however the case earlier and was then criticized as it is an important context for the course and should therefor be raised early in the course). Another suggestion to explicitly raise innovation in the second seminar in SEM1
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STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Some students were reluctant to go to physical lectures and wanted only hybrid or zoom lectures. There were different opinions on if the lectures should be held in Kista or at Valhallavägen. Several students found the number of tasks to fulfill high.

SUMMARY OF STUDENTS' OPINIONS

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

Positive:

- "believe that this course is just at the right point in programme"
- "Quite interesting to learn a bit more outside the scope of my technical career: you find how everything is more or less connected"
- "It encourages us to look at a real life problems as an engineer, with intention to solve it."
- "I loved that we discussed the sustainable side of the engineering."
- "The project, and the help of supervisors"
- "The different professors gave new and insightful information."
- "The group project gave me a lot of time to work and think about the sustainability aspects"
- "The seminar structure to help with the reports."
- "The best aspect of this course is that the course structure forces you to work continuously and not leave lots to be done last minute"
- "TS2 was very useful"

Negative:

- "The course was basically doing nothing for 90% of the time, then going to some mandatory meetings and what not. It just feels like you learn nothing."
 - "missed lectures, did not feel relevant to the rest of the course"
 - "too many deadlines"
 - "The perspective in the course: I would teach a bit more of facts causing the impacts rather than just displaying lots of negative data reflecting the world's tendency to collapse."
 - "The fact that we were expected to incorporate the lectures into our home exams, despite there being no way to listen to the lectures again is just bizarre. The lecture slides often require context which is given by the speaker at the time, and it is quite impossible to remember every minute detail from one lecture several weeks later. Unless you are rain man of course. The lectures need to be recorded so students are able to properly refer back to the lectures and not just the slides."
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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.

Some students find the course very rewarding in giving them purpose to their education. Others find that the course is more a necessary obstacle needed to overcome to get their exam. Talking to students make us confident that the course actually give important learning outcomes even to those not really interested in sustainability.

We need to continue working with ways of dealing with the high difference in previous knowledge - some students have a good understanding of sustainable development before coming to the course, and for them some parts of the introducing lectures may feel repetitive.

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?
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With only 25% response rate it is not possible to draw any clear conclusions from the student survey. Among the answers we see that female students were much more positive than male students. However, this can be an effect of just a couple of very negative male student responses or very positive female students, so no clear conclusion can be drawn from that. Still, we will keep this in mind as something to consider.

Only Swedish students answer the LEQ -encourage int students

PRIORITIZED COURSE DEVELOPMENT

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

- Motivate type of course better, and use quotes from earlier course evaluations for this.
 - Discuss with program coordinators the fact that only Swedish students answer the LEQ -encourage int students and what can be done about this
 - Find ways to make canvas page more structured
 - Consider if we can remove some mandatory submissions to reduce sense of stress
 - Figure out some incentive to attend lectures:
 - *Alt 1) use TS2 table to create a "portfolio" based on a short submission (P/F) after each lecture, which then can be used to either pass TEN1 at P/F level, or as a basis for writing TEN1 (A-F)?
 - *Alt 2) use quizzes after each lecture as "attendance" which can be used to pass TEN1 and E level
 - *Alt 3) Potentially flip lectures and reduce number of scheduled hours, but use compulsory attendance for these: record 20 min lectures with each, change lectures into discussion seminars. Start lectures by showing recorded lectures
 - Maybe merge some lectures, to have less of theoretical intro to sust dev (Lecture 3 and 4, or Lecture 3 and 8).
 - Reduce number of lectures 1-10. Revise order of lectures to a more logic flow of content. Possible put Lecture 4 as Lecture 2, make it point at upcoming lectures. Maybe record introductory lecture and conclude with a discussion seminar, but keep sector lectures as they are
 - Strengthen social sustainability?
 - Change front picture: 10 weeks half time + merge Lecture, Home exam, TS as one whole, one color
 - When introducing the course, highlight the demand from industry for engineers with competence in digitalization and sustainability. Maybe invite industrial leaders to do this
 - TEN1: simplify, clarify and harmonize report instructions, report template, and grading template. Highlight requirement to write about innovation and how to do that. Maybe include innovation explicitly in TS2
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