



Report - IH2653 - 2022-01-25

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.

The evaluation process after the course round fall 2021 was done with the objective to renew the intended learning objectives. It also had a focus on the type of learning activities, choice of numeric tools, and general student recruitment to the topic.

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.)

The course was run in hybrid format, meaning that just one or two students attended in class at a regular basis. These students were willing to provide direct and useful feedback.

Most students were offered to provide short feedback right after the completed exam and some choose to do so.

All students received the LEQ 22 questionnaire.

COURSE DESIGN

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

One out of six homework or lab sessions in total was cancelled since it dealt with numerical methods outside the direct scope of the learning objectives.

That content could be considered as prerequisites and the course plan should be updated to reflect suitable background courses in a better way.

The grading scale was amended to reflect five homework assignments worth 80% and a final exam that completed the remaining 20%.

Grading was done based on a cumulative effort after homework and final exam. This was a minor change from previous years. Unfortunately, this was not properly communicated to all students and also to late for them to consider in their planning.

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 comments in the LEQ give an accurate description of the workload from the perspective of several respondents:

"The course may take less time than expected (less than 200 hours total) if someone has some related background knowledge e.g. has already used some of the simulators used in the course."

"Course is well structured with decent time available for solving the homeworks. Bit hectic sometimes with and might have to work over the weekends. But a good couple of hours would be enough to complete the given tasks/reports."

"The workload seems quite a lot but setting up simulations and especially writing the reports takes time. I think it is still a fair workload overall and justified by the courses topic."

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?

Final grades ranged from C to A.

Unfortunately a few students dropped the course related to issues with the hybrid format i.e. lacking motivation or difficulties to find a proper work environment.

Since only active students appeared on the final exam the passing rate effectively became 100%.



STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Students used these question both to provide general and quite positive feedback but also reported some issues or problems that can be solved until next course round.

List of mainly positive feedback:

"Expanding knowledge by exploring new ideas and trying out new things in the simulators.

- The assignments were interesting, and due to this it was easy to learn new concepts.
- I liked that the assignments were nicely connected to the lectures' material and followed them. One could get many ideas for solutions from the lectures and tutorials.
- I liked that the lectures and tutorials were recorded, so one could anytime rewatch them to understand better the concepts.
- Lectures were quite interesting especially and had a good flow of the subject/topic. The connection to various topics in the previous courses is highly appreciated as it helped grasp the concepts in a better way.
- The feedback on the reports. I really enjoyed the face to face talks with the professor about my reports, about which parts were great and in which parts i missed interesting aspects. Also i think the tasks in generally are well chosen and give great insights in all kinds of aspects of Semiconductor Simulation.

List of issues to be resolved until next course round:

"- To introduce clearer the grading scale.

- More details at tutorials introducing the simulators and assignments (was partly covered at the lectures instead).
 - It would be interesting to have breakout sessions during the lectures as the course has a lot of potential for general discussion on various topics and it could be a great way to learn stuff.
 - The only thing that in my opinion needs improvement is the task presentation. The written text on canvas about what to do i the simulation task was not optimal. The layout could significantly be improved if it is in a seperate .pdf file. Also I think the formulations should be checked because sometime it was very difficult to interpret what should be done."
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SUMMARY OF STUDENTS' OPINIONS

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

The feedback from this course round continues on a general trend of increasing satisfaction with the course format and learning and examination activities.

This course round can be seen as complete version concluding a series of updates that began in 2018 and continued through 2020.

Students have identified that some material, such as the presentation of the assignments, has not received proper attention and there was also a clear issue surrounding the grading scale and passing requirements. These issues will be handled.

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.

See above. All aspects of the course, except the low in-class attendance due to the hybrid format, can be reported as really successful.

However, the course is designed for a lot of interaction during the tutorials and this basically did not work over Zoom. The possibility, to work and learn in teams was also severely limited for the same reason.

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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My impression is that the course learning objectives are relatively unique in a world-wide comparison and therefore attractive for exchange students. They get a possibility to benefit from the strong topical knowledge in my group at KTH.

PRIORITIZED COURSE DEVELOPMENT

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

The course should be made slightly more self-consistent. That would open it up to a number of additional master programs at KTH and some PhD students as well.

The priority for the 2022 course is to renew the intended learning objectives (ILO) in collaboration with the embedded systems master program. A set of tentative ILOs have been introduced and tried out in the 2022 lecture series and the new course plan will be based on this outlined ILOs.

There are also preliminary plans to develop a 3 ECTS PhD level module within the Swedish e-Science Education (SESE) program.

The long term goal coincides with the short term goal, to make the course attractive to a wider body of students. There is another long term goal towards a minimum content of general numeric analysis in electromagnetics and much purer domain knowledge in the software and hardware approaches for semiconductor simulations.

OTHER INFORMATION

Is there anything else you would like to add?

N/A
