Report - DD2488 - 2021-06-24

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 course was evaluated using the Learning Experience Questionnaire (LEQ) created at KTH based on 12 statements and 4 general questions. Thus, all students have been given the possibility to give their opinions on the course. The questionnaire was open for responses from 2021-01-13 to 2021-01-26 and regular reminders were sent by the system.

Aspects regarding gender, and disabled students are investigated using a profile that students fill out in the questionnaire. Students had the possibility to disclose their gender but they didn't have to. They could comment on the course based on this perspective. Students also had the possibility to indicate whether they have some form of disability but they didn't have to. As with gender, students could comment on the course based on the perspective of their disability (if any).

The collected student profiles normally lead to additional data: the average response to LEQ statements per gender and the average response to LEQ statements per disability. However, this data is not generated if too few responses are received. In this case, no data was generated based on gender or disability due to this.

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.)

A course evaluation meeting was arranged after the course (on 17 May) when the course evaluation results were available. The participants of the course evaluation meeting consisted of the course responsible and examiner (myself), all TAs (Long Zhang and Mikhail Shcherbakov), and a student representative (Gábor Nagy).

During the course evaluation meeting the course was reviewed based on the results of the course evaluation questionnaire answers, and based on the experience and feedback of the TAs. During the meeting, notes were collected which form another input to this course analysis.

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

The course consists of 13 lectures (2 hours each) as well as a sequence of 8 lab assignments (lab 0-7). Labs 0 and 1 are not graded, but students receive feedback during lab sessions. Labs 2-6 together constitute the course project (a compiler). The last lab 7 consists of an extension to the project that the students are free to choose (either from a list or an approved own proposal). Lab 7 also consists of a report that students have to write about their implemented extension.

Examination consists of 2 parts: (1) the course project and (2) the theory exam at the end of the course.

The main changes that have been implemented since the last course offering are:

(1) Based on the previous course analysis, a lecture on data-flow analysis was added, in order to cover more aspects of the backend of a compiler.

(2) The distribution of the workload was improved by starting the work on certain labs earlier; this required re-organizing the first couple of lectures to cover some necessary material earlier.

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?

Given a total of 240 hours for this 9-credit course, and 16 weeks of study, the expected workload is about 15 hours per week. In the course meeting, the teaching assistants and myself agreed that the workload was overall close to the expected workload given the results of the course evaluation.

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?

Many students completed the course with good or very good success. There were no significant differences compared to previous course offerings.

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

Several students mentioned that the labs with the compiler project were the best part of the course. ("Labs, most time consuming but also interesting and the best way for me to learn.", "The labs and project were fun and rewarding.", "Great lectures and labs!", "The labs.")

Some students mentioned possible improvements for the labs, for example, to make test cases less dependent on the format of the printers, or to prevent issues in earlier labs to influence later labs.

In general, there was a lot of positive feedback provided in the open questions. Examples:

"This is one of the best courses i have taken on KTH. The course content is super interesting and the course is very well organized. I really like that all labs and course material was available from the beginning of the course. The lectures explained topics clearly and students could interact with the lecturer in a good way. The TAs also did a great job with replying to questions about the labs very quickly and with very well written answers. Again, one of the best courses, lecturer and TAs during my time at KTH. The exam was also very fair and well made. Again, I really liked that it was clear before the exam how it would be graded and how the examination worked. The labs were also really fun to do!"
"Really great that the practical experience from the labs followed well into the exam."
"Very interesting topic. The labs and project were fun and rewarding."
"Great lectures and labs!"
"Attend the lectures, they are really great!"
"Great course!"
"I think Philip was great at explaining the course contents clearly.
Also, the assistants were supportive and provided good feedback and help, when needed."

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

Overall, the average responses to the LEQ statements were very good or excellent. Students provided a lot of positive feedback in the open questions. Even though the labs have worked very well, and students appreciated them a lot, an area of improvement is the polishing of some aspects of the labs, such as their documentation, and some technical details mentioned above.

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.

The students' evaluation matches their very good course grades. The implemented changes also changed the students' answers to open questions. In particular, students no longer pointed out an uneven workload, which was the case for the previous course iteration. Overall, student feedback is very positive.

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?

From the polar diagrams, the following areas emerge as stronger areas: Stimulating tasks ("I worked with interesting issues"), Understanding of subject matter ("Understanding of key concepts had high priority"), Constructive alignment ("The course activities helped me to achieve the intended learning outcomes efficiently"), and Feedback and security ("I could practice and receive feedback without being graded").

I think that the area of Feedback and security is well supported by our cloud-based testing environment which lets students test milestones of the course project without being graded. The course project overall constitutes an important challenge to complete while being supported with a series of lab sessions and while being connected to the lectures.

As a slightly weaker area we can identify the area of Collaboration ("I was able to learn by collaborating and discussing with others") with a score of 4.3, which is still above an average score. Potential reasons are (a) the fact that students didn't get to meet and discuss issues due to Covid-19, and also (b) the fact that the compiler project was done individually. Moreover, the course does not have group discussions or exercises.

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

(1) Strengthen the area of Collaboration by organizing the course project as a group project, and by developing group discussions/exercises.

(2) Implement some improvements to the labs. Issues in earlier labs should have less of an impact in later labs. Given the pipeline structure of a compiler, this requires some technical development.

(3) Longer term, more aspects of the backend of a compiler could be covered. This would require more significant changes to the course project.