Report - DD2460 - 2021-06-15

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):

Cyrille Artho <artho@kth.se>

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.

We have used the learning evaluation questionnaire and feedback from students during the course. The return rate of the LEQ was too low to have any detailed data on gender, disability, etc.

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.)

We arragend an online meeting with two student representatives on June 28, a few weeks after the course was completed. Before then, we also received feedback during the lab sessions or as part of reflections in the PROSAMM (DD2300) course.

COURSE DESIGN

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

The course has been redesigned in the way how the material is taught: We now had prepared two or three short videos (3–10 minutes) to be viewed _before_ each lecture, together with some reading material. The lectures then started with a Q & A session about the material (about ten minutes), following by a Zoom lecture of about 30 minutes with more in-depth information. This block was repeated twice for each 2 x 45-minute slot, with a break in between.
The new format was very well received, although it was not so easy to initiate dialogue on Zoom. It was also very difficult to ask open-ended questions on Zoom. We plan to keep this format for 2022, and hopefully, an in-classroom setting will make this work even better.
Other than that, the course content was only updated in minor ways to reflect new trends in security technology and the overall landscape; the course structure at large was kept as is.

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?

In the LEQ, the students reported a reasonable workload, even less than 20 hours per week; the response rate to the LEQ was quite low, though, so it is possible that other students worked over 20 hours/week. There were a few groups who did not attempt any or many optional tasks, which may be a sign of the overall workload being a bit high, or a challenge in motivation with distance learning.

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?

In this year, all students who took the exam passed the course. We have had a few really close cases but no failures. This is similar to past years, except that we used to have a few students slightly below passing every year, so having a pass rate of 100 % is a nice result this time. We also had more students than usual achieve an "A" grade due to good exam results.

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

* The fact that we use random groups was not liked by everyone.
* There were a few issues with adjusting due dates on Canvas from importing content from 2020 due to Easter vacation changing the schedule every year, and this caused some confusion.
* The students would like even more interactive content in the lectures, and we will try this next year when we can hopefully interact directly with the students.

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

Overall, the feedback is very positive, and each item in the LEQ got more than 6 points on a scale of 1–7.
There were a few issues with getting the software to work, but we were able to assist in all cases.

In the student meeting on June 28, we got in general very positive feedback: The scope and difficulty of the exams and labs were good, and the ungraded tutorials for each new tool/method before the graded ones were helpful.
The lectures and slides were also informative and easy to follow and contained enough information to complete the course, without needing to search for additional information.

Points to improve are:
1. Make some example exam questions about Event-B available. This content was introduced newly in 2020 and is not part of past exams that we had published in PDF form. Because we cannot export the Canvas quiz as a PDF due to technical limitations, we can make an example question available by manually copying text from the Canvas quiz that represents the exam.
2. The overall course grading formula was not displayed in an easy to find location. We discussed this in the introductory lecture, but a dedicated Canvas page will make this easier to find.
3. The Event-B videos were a bit long; we will adjust the course content slightly to link this better to the labs and exams.
4. The balance between safety and security was skewed a bit towards safety (also due to the background of the lecturers); we will try to add more emphasis on security in the labs.
5. Not all mandatory course components (tutorials, reports) got feedback; we will arrange for this next time.
6. A bit more material on fuzzing, and a slightly longer final exercise on memory safety and fuzzing (perhaps with more optional tasks) would be welcome.

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.

We think that the changes from 2020 were successful (more active learning due to more content to view and read beforehand). We had reading material in 2020 but no videos, and the short videos make the material more engaging.
For 2022, we have a few minor things to work on (see below) but plan to keep the overall course organization and structure.

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?

All answers got at least 6 points, but we only have six students who responded to the LEQ (the variant with 12 questions), so we do not have detailed data based on gender, nationality, or disabilities.
We got direct feedback from one student who appreciated that we have a mix of video and reading material, because he or she found it hard to read a lot of text due to dyslexia.

PRIORITIZED COURSE DEVELOPMENT

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

The course is now quite mature, and only minor enhancements have to be made:

1. Return to in-classroom teaching (hopefully) for the final presentations; compared to 2019, we will have slightly shorter presentations and longer discussions, similar to the online format in 2020/2021.
2. Make tasks in the lab assignments less dependent on each other. Not all student groups found the right "refinement chain" to be able to successfully carry out the entire task.
3. Have a small video on challenges about correct property specification: vacuous properties and the fact that all properties (normally) implicitly hold globally.
4. Address the students' comments above and add a short (perhaps pre-existing) video on the principles of fuzzing.