Report - DD2525 - 2024-01-08

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 features continuous interaction and feedback between the teacher, students, and TAs. Students are given the possibility to ask questions and provide feedback during the lectures, breaks, and lab sessions, as well as using standard channels like Canvas and email. Further, the instructor allocates office hours for one-to-one meetings with students. The course also benefits from two course representatives who gather feedback anonymously from students and report it to the instructor. In-person interaction and office hours resulted crucial in receiving feedback as the course was running and helped taking on-the-fly countermeasures to improve aspects of the course. At the end of the course, a course evaluation survey was sent out to all students. In addition the standard questions from the course evaluation template, we asked questions to assess specific aspects of the course (labs and projects) as well as the cross-university Capture The Flag security contest. As in previous years, each graded moment of the course was accompanied by an optional one-to-one meeting between the instructor and student groups. The instructor met the groups before the live presentations of graded labs to get additional feedback about possible challenges with the labs. At end of the course, we organized a course analysis meeting between the course responsible, course representatives and TAs. Out of 60 course participants, the course was attended by 6 female students and there were no students with disabilities. The course contains several activities ranging from more structured (lectures, labs) to more creative (projects, exercise sessions, CTF contest), and the minority gender highlights that they felt included.

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 following meetings were arranged with students during and after the course completion:
1. Office hours on a biweekly basis
2. Group meetings during the lab and exercise sessions
3. Project progress meetings (at least 2 with each group)
4. One-to-one meetings on-demand bases, whenever requested by the students
5. Continuous communication with course representatives
6. An optional final meeting with student groups after the course completion
7.Course analysis meeting with course representatives and TAs

COURSE DESIGN

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

This was the fourth offering of the course. The course consists of lectures and labs sessions, typically one lecture and two lab sessions per week, including one invited lecture form industry. The lectures put emphasis on key concepts of the topic at hand, while lab sessions are dedicated to practicing those concepts with hands-on exercises, tutorials, and programming assignments. The examination consists of three graded labs and one graded project. In the spirit of close student-teacher interaction, the labs were presented to the TAs, followed by a report graded by the instructor. The project was also presented to the instructor and to other students in the form of a final workshop, followed by a final project report. To facilitate and monitor the progress on the project, we used three phases: (1) a project proposal by groups of 2 students; (2) a lightweight project review by opponent groups; (3) project presentation at the final workshop; (4) submission and evaluation of the final report.

In line with the previous course analysis, we implemented the following changes:
We improved non-graded activities to foster work in group and interaction. Specifically, we introduced a new exercise dynamic information flow control to help students master the tool used in the first lab assignment. We also recorded a tutorial and made it available online to the students. To clarify the expectations of the project, we made available two past projects as a reference. We developed new challenges and organized the cross-university Capture the Flag contest involving students attending related courses at Chalmers and Aarhus university. This course offering showed a better distribution of projects over the different topics, though we did not enforce any rules explicitly. Finally, the course featured an invited lecture on web application security by a senior security engineer from Google.

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?

The workload seems in line with the expectations. The course evaluation results show that the majority of respondents spent between 12 and 20 hours per week. The students report that the workload was just right and well balanced.

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 course had 60 registered students and 2 students did not complete the course. This was an increase of 35% of the course attendees. The distribution of course grades is as follows: 16 students received grade A, 12 students received
grade B, 9 students received grade C, 19 students received grade D, and 2 students received grade E. Overall, the results are in line with the last offering of the course.

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

We remark that 15% of the course participants (9 out of 60) responded to the course evaluation survey. Similarly to past years, the course is very well received by the students. They appreciate the combination of the conceptual aspects with practical aspects. In response to open questions, students emphasize the following points:
1. Lectures, labs and the project were highly appreciated by students
2. The course structure, lecture-exercises-labs-project, was evaluated as excellent, and several emphasize the ungraded activities such as work-together labs
4. Suggestions for improvement are include better documentation for Troupe (the tool used in Lab 1) and possibility to book slots for lab presentations.
5. The course was highly recommended to future participants with several students claiming that this was the best course in security they had taken.
6. Students liked that the project was open and that they could pick their favourite topic.
7. The Capture the Flag (CTF) contest was highly appreciated and it inspired several students
8. Students liked very much the invited lecture by the security engineer from Google.

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

The outcome of the questionnaire and meetings with students show that the course was highly appreciated. The students like that the course is hands-on and that several activities are centred around breaking and fixing security vulnerabilities in several domains. The performance and availability of the teaching team was praised by many students.
Suggestions for improvement include suggestions for upgrading the Android lab and grading guideline for the project. A student suggests booking slots for lab presentations, while another student suggest additional theoretical exercises in information flow control.

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 teaching and learning environment seems to have been perceived very well by the students. This is clearly reflected in the course evaluation as well as in direct feedback from the students. The course seems to have reached a good level of maturity and appreciation, as witnesses by the 30% increase in the number of attendees. Non-graded activities had a very positive impact increasing both interaction and actual learning during the course. This year we introduced a tutorial-like exercise on information flow control, which greatly helped students with the first lab assignment. Activities such as the CTF context and the invited lecture from industry have contributed to further increasing students' interest in the course. Student feedback about the project has also improved, although suggestions relating to improving the grading guidelines should be accounted for in the next course offering.

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?

Unfortunately, the number of respondents of the questionnaire is modest. In line with the course evaluation survey and the final analysis, the following aspects of the course emerged: Students find the course the course was challenging in a stimulating way and they found the assessment on the course was fair and honest (6.9/7). They were able to learn from concrete examples that I could relate to, their background knowledge was sufficient to follow the course, they was able to learn by collaborating and discussing with others, and were able to get support if I needed it (6.7/7). The course activities helped them to achieve the intended learning outcomes efficiently (6.6/7), they could practice and receive feedback without being graded and the course activities enabled them to learn in different ways (6.3/7). The intended learning outcomes helped them to understand what they were expected to achieve (6.1/7) and understanding of key concepts had high priority (6/7).
This indicators are in line with previous evaluation. No differences were spotted between female and male students, and international and national students.

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 seems well-oiled and minor changes are as follows.
1. Further enhance collaboration through non-graded activities such as exercises.
2. Develop exercise in Android Security.
3. Develop own platform for Lab Assignment 1.
4. Revise graded activities to accommodate the increased number of course participants.

OTHER INFORMATION
Is there anything else you would like to add?

The results of the course evaluation survey were discussed in a course analysis meeting on June 22nd, 2023 with course representatives (Tillman Schäuble and Hîvron Stenhav), TAs (Amir M. Ahmadian, Javier Cabrera Arteaga, and Mikhail Shcherbakov), and course responsible (Musard Balliu).