

Report - EP2520 - 2024-10-14

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.

We informed students from the opening lecture about the importance of the evaluation and on-going feedback during the unfolding of the course. We made information available early on with specific pages in Canvas, reminded in several occasions in lecture and exercise sessions, and through the course evaluation system.

The students were strongly encouraged to email or message in Canvas, talk in person, talk to the TAs, regarding any matter they needed to communicate.

In all occasions conceivable, the student opinion was asked for course matters, e.g., content of review sessions, adjustment of content and modus operandi of recitations, and mild scheduling changes (swapping an exercise session with a lecture).

An additional element of evaluation: the cybersecurity MSc program student representatives provided feedback and held discussion after the course – as part of a regular process for all courses for the said program.

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 had lectures and tutorials delivered in person, ten (10) in total in the first three weeks of the course.

Students formed teams and scheduled meetings with the teaching team to check out their project equipment (big plastic containers, with all equipment for the project work, with instructions for checkout and return).

One teaching assistant was assigned to each team, with dedicated canvas space, and a free format for follow-up throughout the period of the course – interactions on-line or in person – beyond the course deliverables/milestones via Canvas. Due to the hands on nature of the course, the teaching team interacted with the students on-site – the assigned project work rooms.

Two classrooms were equipped with networking infrastructure, along with group infrastructure accessible remotely. Students got card-based access to the two rooms throughout the period to work on their team projects.

Presentations of results, with demos and opposition by another team, were held during the last week, with at least three teaching team members present at all times.

COURSE DESIGN

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

We kept the established and proven efficient and effective processes for the unfolding of the course and the examination.

We renewed material to align with the revised content of the predecessor course, EP2500. We also expanded on the suggested tools for the project implementation.

Based on student feedback from previous years: we condensed/intensified the lectures and tutorials in the first three weeks, to help students converge faster to the hands-on learning; we clarified on Canvas expectations for different grades.

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?

Students reported similar distribution to previous years – in terms of hours per week and distribution over different parts of the course (early or late weeks).

A noticeable reduction at the tail and (> 41 hr) and somewhat high workload (> 21 hr) is visible. This can be due to condensed lecture/tutorial schedule early and other design modifications. But also partly due to having for the first time three teams of 5, with the norm this and all years being teams of four students. (Note: evaluation is team-based and individualised, always done carefully).

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 predominantly (all but 2) stayed on board, joined teams and undertook a project after the first two weeks and completed the course.

The grades were mostly A and B, with approx. 23% of the students receiving C, D. Overall, students received better grades, in spite of the demanding project work. This shows the student dedication as well reflects the successful setup and improvements.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

The students appreciated, answering to what was the best part of the course:

The learning approach and the value of the acquired knowledge in follow-up steps of their careers

- "The learn by doing approach"
- "Very fun and hands-on"
- "I feel like a learned a lot and most of it will be useful in the future"
- "The whole concept of the course is great, challenging and fun. I really enjoyed working on the project, even though the last few weeks were quite stressful"
- "The best part was, having a time to look on all these interesting technologies, pick the one I want to study more and go for it."
- "Being able to apply things learned in previous courses in a practical project is always good to see that the knowledge is actually applicable in real life, not just as abstract concepts for written exams. I learned a lot."

The cybersecurity MSc program student representatives provided detailed feedback aligned with the above (e.g., "Extremely fun course that provides a unique opportunity to perform hands-on work and put into practice a plethora of theoretical concepts that cut across different courses; students learn a lot", along with a list highlighting positive aspects of the modus operandi and successful unfolding of the course.

Students (via the form and directly from the MSc cybersecurity program) suggested improvements – most welcome, outlined in a summary form below, followed by a quick response:

Suggestion 1: Reduce overlap with NSS (EP2500) – expand on introducing new concepts.

Response 1: Overlap with EP2500 (NSS) is there because there are students that do not have the opportunity to take it before EP2520 (BNSS). This can be remedied, as we have requested long now, by allowing more students across programs that do not include EP2500 in their Y1 to choose it in lieu of alternatives that provide a narrower scope than NSS. Beyond that, for the coming year, we will look into expanding the BNSS coverage.

Suggestion 2: Improve project description and unfolding and student support.

Response 2: We will adjust and improve on the project description, and more so, perhaps better from a pedagogical point of view, the support for the interpretation of requirements. We will also ensure there are multiple channels, not only one designated TA and the teacher, for students to have promptly quality support on technical issues. Last but not least, we will look into starting the implementation a little earlier.

Suggestion 3: Reshape the assessment – considering individual learning and assessment and an additional milestone.

Response 3: We will work on both aspects: combining in-depth feedback with individual assessment at intermediate stages/deliverables, and further emphasize the importance of balance within the team and individual contributions and learning. We will most likely add a Phase 2 preliminary results milestone. Last but not least, we have been contemplating for long the suggestion for an additional task (same as the students suggest) – we will concretely investigate when and how it is the earliest we can introduce this.

SUMMARY OF STUDENTS' OPINIONS

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

Overall, the scores and opinions are very positive. Very similar to previous years but, very important, with the least negative scores (only one -1 on the assessment.) Students felt they worked with interesting issues, that the course was stimulating, that they received feedback and were very well supported, and collaborated with peers. The work of the TAs was highly appreciated – even though there were pointers that call for improvement. Still, a noticeable improvement was on the assessment of getting feedback without being graded and getting support when/if needed. The feedback from the cybersecurity program representatives was very detailed with clear points for further improvement and suggestions.

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 performed noticeably better with a small shift up in the grade distribution. The teaching team efforts remained with some changes/improvements in the modus operandi – in spite of technical difficulties (e.g., lack of course supporting infrastructure). These efforts along with the changes in the course modus operandi and the use of prior student feedback to address needs, all helped maintaining the quality and student satisfaction.

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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It was not possible to identify differences.

PRIORITIZED COURSE DEVELOPMENT

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

Based on the exposition in the "Summary of Students' Opinions" above, we will maintain all positive aspects, build on our experience, and, naturally, we will take in the student suggestions, improving on the project, the assessment and revising parts of the course modules. We will also seek to improve access to BNSS and its predecessor, NSS, across MSc programs.
