

# Computer security course restructuring

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Proposal to restructure computer security from a 10-credit course to a 20-credit course. We find the current structure and topics are working well, and cover the basics of security. We believe that students would benefit from more depth in the existing topics. Therefore, the following proposal expands the current Computer Security course by adding material to the existing course, but makes minimal to no changes to the syllabus content.

## 1 Semester

We would like to move Computer Security to semester 1 so that we can accommodate Masters students who want to take both Computer Security and Secure Programming. Indeed, it is recommended that students have passed Computer Security before taking Secure Programming.

## 2 Exam diet

We would prefer the Computer Security exam to take place at the end of the semester in which lectures are delivered. So, if Computer Security is moved to semester 1 as we request, the final exam should be part of the December diet.

## 3 Coursework

**Currently** We have 2 summatively-assessed coursework which exceeds what is allowed for 10-credit courses, and meets the 20-credit course guideline

**Extension to 20-credit course** We would introduce one piece of formative assessment with feedback.

## 4 Course workload

**Currently** We have 2 lectures a week planned and 4 tutorials in total. Together with the coursework and the readings we evaluate the total number of hours required for the current format to be around 8 hours a week. This is above the 10-credit guideline but below the 10-credit guideline.

**Extension to 20-credit course** We would plan 3 lectures per week as well as one tutorial/lab session per week. We evaluate the total number of hours required for the extended format to be around 11 hours a week:

- 3h/week attendance to lectures
- 4h/week preparation for lectures
- 1h/week attendance to tutorials/labs
- 2h/week preparation for tutorials
- 5h/CW which amounts to 1h/week for the coursework

On top of this 121 hours, students would also need to spend:

- 32h for exam preparation (4 days,  $4 \times 8h$ )
- 2h for sitting exam
- 20 hours programme level activities

In total, we estimate that students would spend 175 hours on Computer Security.

## 5 Contact hours

**Currently** We have 2 lectures a week planned and 4 tutorials in total. This corresponds to the 10-credit guideline.

**Extension to 20-credit course** We would plan 3 lectures per week as well as one tutorial/lab session per week.

## 6 Changes to the syllabus

We are maintaining the current course syllabus topics. Extending to a 20-credit course would allow us to go deeper in the technical details of the existing topics. The syllabus is very broad and we currently can only very briefly cover each topic. The extended format would allow us to spend an extra lecture on each topic. The list of topics discussed in class are the following:

- Introduction and background
- Cryptography
- Protocols
- Web security
- Secure programming
- Access control
- Usable security and privacy
- Authentication
- Network attacks and defenses