



KURSANALYS

- kursansvarigs summering och reflektioner

Denna blankett fylls i av kursansvarig efter avslutad kursomgång.

Kursanalysen anslås på KTH:s webb under rubriken Kursens utveckling och historik, på Kursinformationssidan

Kurskod: EP2790	Kursnamn: Security Analysis of Large-Scale Computer Systems	
Läsår: 2020	Period: P4	
Högskolepoäng: 7,5	Antal studenter: 15	Svarsfrekvens kursvärdering: 53%
Examinationsgrad/prestationsgrad: 93%	Läraktiviteter: Föreläsningar, gästföreläsningar, formativa inlämningar, handledning och frågestunder.	
Examinationsmoment fördelade på högskolepoäng: <ul style="list-style-type: none">• PRO1 - Project work, 6.0 credits, Grading scale: A, B, C, D, E, FX, F• SEM1 - Seminars, 1.5 credits, Grading scale: P, F		
Undervisande lärare: Robert Lagerström, Mathias Ekstedt, Simon Hacks, Zeeshan Afzal, Preetam Mukherjee		
Examinator: Robert Lagerström, Mathias Ekstedt		
Kursansvarig lärare: Robert Lagerström, Mathias Ekstedt		

Beskrivning av eventuella genomförda förändringar efter tidigare kursanalys

Due to covid-19 all lectures, seminars, and Q&As took place on Zoom.

Evaluation of the final report was updated.

The number of drafts to hand in was reduced.

The slide deck for the lectures was further developed and divided into modules.

Lectures were recorded and provided beforehand. (All but the first lecture which was held live.)

The examples provided were updated and extended. Explanations of examples were recorded.

Sammanfattning av kursdeltagarnas svar på kursvärderingen

Grafer och citat från kursvärderingen kan läggas som bilaga om så önskas

Overall, they seemed happy with the course. All questions got on average between 5-6. With 4 being neutral to a statement and 7 completely agree.



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Kursens starka sidor utifrån kursvärderingen och lärares reflektion, även i förhållande till de förändringar som genomförts inför kursomgången

Comments from students (What was the best aspect of the course?):

- I think the best aspect of this course is to help me consider a risk of the system as a whole, in a systematic way, with the help of threat models.
- Weekly feedback for each section of writing, thus making the final report (which is pretty much 100% of your course work) much, much easier to write.
- Interesting topics/course content. Also, interesting to do a risk analysis in practice.
- Fun to learn and get insights to what a security architect might do. Performing an analysis on such a big scale was an interesting task and that it takes more time than expected, and that one needs to try to prioritize correctly.
- Comprehensive knowledge

Kursens svaga sidor utifrån kursvärderingen och lärares reflektion, även i förhållande till de förändringar som genomförts inför kursomgången

Comments from students (What would you suggest to improve?):

- Maybe it can be better if we can read others' final reports after the course end.
- Make available a full example of what the report should look like and how are we supposed to find the basic variables like the magnitude, skills, sponsorship when making the study of the potential attackers.
- I think sometimes it's hard to imagine a fiction system on my own or imagine a fiction system that satisfied systems in real industry, especially for students who have no working experience. My suggestion is to give real system threat analysis as example and say more about how to estimate the spent effort, loss event magnitudes etc, because sometimes I have no concept about how large these values would be, so I only make assumptions and give little motivation.
- More materials
- I think phase 0 should be separate from phase 1-2 to give the students more time in deciding what company to choose. When you have to do phase 0-2 in one go you are forced to just pick something and hope that it was a good choice because you have to do a lot of work at the same time. Another suggestion for improvement would be to have a, perhaps optional, extra seminar around the time of the guest lecture. This seminar could be used to go over for example phase 0-2 again so that we get an extra opportunity to get feedback on our work before handing in the final report. Another option would be to have a seminar where you hand in a draft of the entire report (might take too much time though).
- Would consider changing the deadlines of the first drafts for each phase. Maybe add exactly what one should focus on or add more time for the longer phases. I was also sick during this (drafts-phase) time so felt behind from the start, and that had an impact on how I viewed these of course.



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Ansvarig lärares sammanfattande synpunkter

Providing more material on a certain aspect leads to the fact that students elaborate more on that aspect. Question: if we provide also more material for other aspects will it increase overall quality or does it just move the focus of the students?

Even though not critical, we should probably continue working with making the report evaluation criteria crisper.

Förslag på eventuella förändringar av kursen

The following are ideas of improvements of the course that are worthwhile considering:

- Many students struggle with Phase 5 in the course content. More or better examples should be provided. Perhaps more time spent discussing this particular phase in the Q&A or seminars.
- We should enforce active participation in seminars and lectures better, especially with guest lectures. E.g. each student must ask at least one (relevant) question.
 - With two teachers at the guest lectures, one could write down comments and the other could moderate and ask questions.
 - For draft review seminars, we could have the students read one another's reports on beforehand and do an oral opposition similar to a thesis presentation.
- Ideas worth exploring, that might or might not lead to change:
 - We could force the students to illustrate how a certain attack vector could be attacked and provide them with some example reading (e.g. supply chain - solar winds and notPetya, stolen certs and air gap jumping - stuxnet, ... We could use att&ck for this.)
 - Perhaps introduce the STRIDE-per-element analysis as part of phase 4.
 - We should try to be more concrete on some requirements.



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Kursansvarig: *Rolf Lundin*