UNSW Class of 2018 semester 1

Security Engineering and Cyber Security

COMP6441/6841 18s1

Draft

Note that this course is run on OpenLearning: link (https://www.openlearning.com/courses/sec/). It is important that you are enrolled in the correct cohort (UNSW 2018s1), this requires an email invitation. Please contact the course administrator for such an invite. All the course material and announcements will be published on OpenLearning. It is your responsibility to ensure that you are enrolled in the correct cohort on OpenLearning.

About

- Course Summary (https://www.openlearning.com/courses/sec/CourseInformation)

Course People

Course Administrator

- Steffen Johansen (mailto:s.johansen@unsw.edu.au) (cs6441@cse.unsw.edu.au (mailto:cs6441@cse.unsw.edu.au))

Lectures:

- Mon - 17:00 - 20:00 - Richard Buckland (https://www.openlearning.com/u/richard.buckland)
- Tue - there are no Tuesday lectures (this was a timetabling mistake)

Analysis sessions:

The weekly small group sessions you attend are your *Analysis sessions*, although myUNSW and other sites may refer to them as *labs* or *tutorials.* Every student must attend their analysis class each week and participate.

COMP6441:

- Tue 09:00 - 11:00 (T09A) - Ryan (https://www.openlearning.com/u/ryanshivashankar)
- Tue 15:00 - 17:00 (T15A) - Luke (https://www.openlearning.com/u/lukepapandrea)
- Tue 17:00 - 19:00 (T17A) - Katerina (https://www.openlearning.com/u/katerinab)
- Wed 13:00 - 15:00 (W13A) - Hayden (https://www.openlearning.com/u/blankaex)
- Wed 15:00 - 17:00 (W15A) - Katerina (https://www.openlearning.com/u/katerinab)
- Thu 15:00 - 17:00 (H15A) - Louis (https://www.openlearning.com/u/louischeung)
- Thu 17:00 - 19:00 (H17A) - Adam (https://www.openlearning.com/u/adam.smallhorn)
- Fri 09:00 - 11:00 (F09A) - Bryan (https://www.openlearning.com/u/bryanmoh)
- Fri 11:00 - 13:00 (F11A) - Evan (https://www.openlearning.com/u/evank)
- Fri 13:00 - 15:00 (F13A) - Hayden (https://www.openlearning.com/u/blankaex)

COMP6841:

- Wed 17:00 - 19:00 (W17A) - Steff (https://www.openlearning.com/u/steffenjohansen)
- Wed 17:00 - 19:00 (W17B) - Luke (https://www.openlearning.com/u/lukepapandrea)
- Thu 17:00 - 19:00 (H17A-2) - Curtis (https://www.openlearning.com/u/curtis-millar)
- Fri 09:00 - 11:00 (F09A-2) - Ryan (https://www.openlearning.com/u/ryanshivashankar)
- Fri 11:00 - 13:00 (F11A-2) - Kristian (https://www.openlearning.com/u/kristianmansfield)

Assumed Knowledge

6441 - You need to be able to work independently and be self directed. You need to asses your own development and notice when you have gaps and then take responsibility for teaching yourself what you need to know to fill the gaps. Formally you are required to have successfully completed one year of full time university study already.

Prerequisite: Completion of 48 UOC

If there is room in the course and if you can demonstrate you have learning maturity and are capable of appropriate levels of self direct study, we may waive this prerequisite.

While there are no formal requirements for this course, basic understanding of one or more of the following topics is useful:

- Programming/Computing
- Some algebra/discrete mathematics
- Operating Systems

- Computer networks
- Critical thinking

Only small amounts of knowledge may be required from these topics, but students that lack the above knowledge must be prepared to study these by themselves if they find certain content of the course challenging. Students are encouraged to ask their tutors for advice if in doubt.

6841 - As for 6441 PLUS knowledge of programming (ideally C) and memory organisation.

Prerequisite: Completion of 48 UOC, and COMP1927 or COMP2521

Assessment

All assessment is described more in depth on the course website.

- 40% - Final exam
- 20% - Mid-semester exam (week 5)
- 30% - Job Application (https://www.openlearning.com/courses/sec/JobApplication) (weeks 10,11,12)
- 10% - Peer review of job application (week 5)
- 5% - Bonus Marks - yes you can score over 100! (..but we'll truncate it at 100)

Oooh Bonus Marks

A Bonus mark for every time your work is showcased in the Hall of Fame. Impressive write-ups, lightning presentation, diary entries, anything impressive you post on the site is eligible for showcasing.

Two Streams

COMP6441/COMP6841 are taught in parallel. The lectures are common for both courses. Students doing Extended Security Engineering and Cyber Security will have an extra 1 hour extended lecture startin midway through the semester. Analysis groups are allocated differently based on which course the student is enrolled in. COMP6441 does not have much compulsory technical content - but you can chose technical options if you like. COMP6841 has compulsory technical content and will be assessed at a higher standard.

Lectures (weekly, 3 hours)

Weekly lectures are meant to introduce students to new topics and material. The lecturer may also suggest students do optional weekly activities for homework, this may not be written down anywhere, so students are encouraged to take notes and share and discuss amongst each other.

Each week, a different analysis group is expected to take collaborative notes for the course textbook, these must be uploaded by Wednesday lunchtime, after which time all students in the course can read and further edit and improve them. These collaborative notes are compiled and edited (with some restrictions) into the class textbook which will be made available to you in the final exam.

You are encouraged to actively participate with questions, answers and relevant comments in lectures.

Analysis sessions (weekly, 2 hours)

In the weekly analysis sessions you will work with the same small groups of around 20 students each week. The classes will dive into case studies related to security engineering, failures and successes, and the mindset behind good security engineering. Students are expected to take notes and be active.

These sessions are also the time and place to present your lightning talks (short, 5-10 min presentations) on a topic that you find interesting. These are meant to be mini introductions to the rest of the class.

Additionally, some minutes every week should be dedicated to Security Everywhere, where the class discusses recent security related news, and other relevant things you may have seen/experienced/heard over the past week. The class is meant to discuss these topics. On the discretion of the class leader, additional revision/exercises/material may be introduced. Students are expected to have done all relevant reading for each case study *before* the weekly session.

Homework exercises

We expect security students to do their homework and to manage your time effectively. This ranges from informal homework tasks given by the lecturer in lectures (remember to take notes of this), weekly security everywhere posts, writing blog posts about them, working on job application, etc.

Self directed study

We expect students to spend a significant time on self directed studies related to security. This ranges from reviewing lecture materials, learning related content, to going to security meetups, playing ctf’s and doing bug bounties. This may also include your something awesome project. Remember to blog about it so you get more evidence for your portfolio - remember we would like to see, not be told.

Breakdown of time

Students are recommended to dedicate 11 hours a week on this subject in order to achieve a credit. This is just a rough guide. We suggest the following as a breakdown of the weekly 11 hours one should spend in order to attain a credit:

- 3 h - Lecture
- 2 h - Tutorial
- 2 h - Homework exercices
- 3 h - Self directed studies
- 1 h - Tutorial preparation

Course textbook

There is a collaborative course textbook online to which you are expected to contribute and which will be made available to you in the final exam. Each week, one tutorial class will be designated to write notes from the lecture (see relevant tutorial timetable). Those notes will be the basis of the textbook content for the topics covered that week. However, all students are expected to review, contribute and extend the content that is added to the textbook every week, regardless of which tutorial class they are in.

Submitted work is shared by default

This is an open course and we frequently share student submitted material for others to see and learn from. **In this course submitting work means you give the university a perpetual royalty free licence to use the submitted material in any way it wishes.** This includes but is not limited to comments, assignments, questions, messages, uploaded content, exams, wiki text and activity submissions. If submission sharing might impact on your learning in the course please discuss this with us *before* you submit.

Good Faith Policy

This course has a "Good Faith Policy". This means we expect you to act in good faith at all times. We expect you to be a good citizen. To not invade, alter or damage the property of others including the university, invade the privacy of others, break any laws or regulations, annoy other people, deprive others of access to resources, breach or weaken the security of any system, or do or omit to do anything else which you know or suspect we would not be happy about. Furthermore you are not to do anything which appears OK by a loophole or a strict interpretation of "the letter of the law" but which is not consistent with the spirit. Basically you must not act in any way so as to bring disrepute to the reputation of the course, the course staff, fellow students, the school, the university, or the ICT profession. Also, don't be a dick.

If you are unsure, ask!

If, in our sole discretion, we feel you have violated the Good Faith Policy you will be awarded 0 Fail for the course. Further penalties may apply also depending on the nature and severity of the violation. Students who have violated the Good Faith Policy may not be permitted to re-enrol in future offerings of the course.

Students who are found (or who have previously been found and have not disclosed this) guilty of academic or computer related misconduct or any other activity in a way which which casts doubt on their ability or willingness to comply with the Good Faith Policy will be dis-enrolled and will be not permitted to re-enroll in future offerings of the course. If you have ever been found guilty of such an activity you must disclose it to the lecturer in writing immediately.

Plagiarism

UNSW takes plagiarism very seriously and if you are found to have engaged in plagiarism there are terrible penalties. Plagiarism at UNSW means using the words or ideas of others without giving clear credit ie passing them off as your own.

You must (and you really should) read the full text of UNSW's policy regarding academic honesty and plagiarism (https://student.unsw.edu.au/plagiarism).

The pages below describe the policies and procedures in more detail:

- Student Code Policy (https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf)
- Plagiarism Policy Statement (https://www.gs.unsw.edu.au/policy/documents/plagiarismpolicy.pdf)
- Plagiarism Procedure (https://www.gs.unsw.edu.au/policy/documents/plagiarismprocedure.pdf)
- Student Misconduct Procedure (https://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)

Course Evaluation and Development

We strongly encourage students to actively provide feedback about the course's progress.

These courses will be evaluated by UNSW's myExperience program. You'll receive an email to your student email address with instructions on completing this; we'll also (endeavor to) send out a notification.

But mainly just tell your class rep, your tutor, or Richard if you ever have any concerns or feedback so we can sort out any problems when they are happening rather than waiting till the end of the course when it could be too late.

Public MOOC

This year we are allowing (nay - welcoming!) public students to join in with us as we move through this course. Please treat them with kindness and welcome them. I believe this will result in a much richer course for everyone. They will watch lectures via video (from last year). We may also add some of the videos from this year - where I do a better job of explaining something (depending on our video editing and uploading speed).

UNSW internal students

Administrative and assessment related details for formally enrolled UNSW students are available on the private UNSW Students group page. Click on "Groups" to join that group, then click on "UNSW Students" to visit the UNSW group page - or check out the 18s1 version (https://www.openlearning.com/courses/sec/CourseInformation/UNSW18s1) here.

Keeping Informed

Subscribe to this page (button below) to be informed when people comment on it. I'll comment on it whenever I update it or clarify something which is unclear. You can see what (if anything) has changed by clicking on the "history" button below.

Important notices related to this course may be announced on the home page on the course web site from time to time. It is your responsibility to check this site regularly. You can configure email alerts when announcements are posted. The web site is linked from https://www.openlearning.com/courses/sec (https://www.openlearning.com/courses/sec/CourseInformation)

Sometimes urgent information may also be sent to you by email. Make sure you pay careful attention to any email you receive. All official email will be sent to your UNSW email address. If you prefer to read your mail at some other address you will need to redirect your mail, for example by using idm. Ask your tutor if you need help doing this.

Additional information will be provided in the course discussion forums and elsewhere on the course site as the session progresses. You should explore the course web site, and read the announcements, tagged comments, FAQ, and this page regularly for updates.

Marks may be scaled to ensure a consistent standard from session to session.

If you do not pass the invigilated final exam your final mark for the course will be capped at your exam mark.

Final exam

Held in the examination period.

Mid-Course exam

Held in the week 5 lecture timeslot probably 8-9pm.

Final Job Application

- **Job Advertisement (https://www.openlearning.com/courses/sec/JobApplication)**

Due in weeks 10,11,12.

Peer Review (Mid-Course Job Application)

Mid job application due in week 5. Peer review due end of the break. Submit your Job Application based on weeks 1-5 work. You will be assigned 2 hours of sample marking and peer review of your classmates' mid-course applications which will be assessed. Note your REVIEWING is assessed, not your job application.

Other activities

There are a number of course activities you are expected to undertake - these are for your own benefit and learning and for the community and do not contribute directly to your final grade. However your Job Application will refer to your performance impact and time management in undertaking these activities so it is important to treat them seriously and stay on top of the course each week.

Analysis sessions

Analysis sessions start in week 1. You will have booked your session slot online when you enrolled. (the UNSW system may have called it a "Lab" or a "Tutorial"). Check times and places shortly before the course starts since available times may have subsequently changed.

Some of the sessions will involves some pre-reading, which you must do before attending the session. In those sessions you will discuss the reading for that week. Bring some rough notes of your thoughts on the reading along with you and the readings themselves where that might be useful.

Some weeks there will also be some analysis questions and exercises to help you practise your analytical skills. The questions will usually be released shortly before the class, bring a printout of the questions along with you to the session with you.

Some questions in the final exam will be related to the analysis session case studies, exercises, and pre-readings.

Your analysis session is an important opportunity to practise and prepare for the final exam.

Examinations

The mid-semester and final examinations in this course may examine any material covered in lectures, seminars, reports, analysis session, homework exercises, and any reading you have been given. One of the exam questions may relate to a film which you will need to watch and think about before the exam. The particular film will be identified before the start of the exam period.

Supplementary Exam

A supplementary examination will be held soon after the results have been released. If you think that you may be eligible for the Supplementary Examination, make sure you are available around that time. Be careful not to plan any overseas travel at that time. If you can't attend the sup exam you will not be offered a second chance. WE CAN ONLY RUN ONE SUP EXAM.

It is your responsibility to check your email, the CSE website, and to contact the CSE student office for details of Supplementary Examinations. If you think there is any chance you might be eligible for a Supplementary Exam then you should prepare for it. Requests such as "I didn't find out until the day before the sup exam that I could sit the sup exam, so I need more time to study" or "I have to go overseas at that time and I have already purchased the tickets so can you write and administer a special sup exam just for me" will not be granted.

Special Consideration

Students whose exam performance is affected by serious and un-foreseeable events outside their control can apply at the student centre for special consideration. If special consideration is granted you will be able to sit the supplementary exam.

Special consideration does not mean we adjust your marks, it means that we permit you to sit the supplementary examination. If you apply for special consideration after the cut-off date set by the university or after the supplementary exam has been held then it will not be granted. Furthermore, special consideration will only be granted when each and every other component of the course (e.g. Job Application, Mid-Course Job Application and review, seminar, Mid-Course exam) has been attempted and satisfactorily completed (passed).

Check Your Marks

You can inspect the current state of your mark record by using the command 6441 classrun -sturec . Check your record frequently and make sure you contact us promptly if you do not agree with it.

All marks must be finalised by the end of stuvac. If you think there is a problem with any of your marks (e.g. Mid Job Application, Final Job Application, Mid Exam) then you need to advise us by emailing cs6441@cse.unsw.edu.au within two weeks of the mark being released, and, in all cases before the end of stuvac. No marks will be changed after the end of stuvac.

Polices and Rules

The university has a number of rules and policies which affect you (see the university calendar and the university home page), additionally the school of CSE has a number of rules and policies (eg see the "Yellow form"), and this course has a number of rules and policies (see this page). Where there is a conflict between these sets of rules and policies the most strict shall apply. Where there is ambiguity in the interpretation of any rule of policy the most strict interpretation shall apply. If you are in any doubt as to the meaning, interpretation, or effect of any rule or policy please ask the course administrator or the lecturer in charge.

Getting Help

If you need admin help contact your tutor in the first instance, and Richard if your tutor cannot help you. If you need help with the subject material you ask on the course site where another student or the course staff will likely be able to help you.

In this course we communicate on the course website rather than by email. Richard is able to stay back after the lecture if you have any problems you would rather discuss face to face.