This report contains feedback from students about a course taught in the School of Informatics during the 2020/21 academic year, in response to the following questions:

- What advice would you give to a student taking this course in future?
- What did you find most valuable about the course?
- What improvements, if any, would you make to the course?
- Please add any other comments you have about workshops, tutorials or labs on this course.
- Please add any other comments you have about the presentation of course materials online and their accessibility.
- Reflecting on your experience of hybrid teaching and learning on this course, what has worked well for you?
- Is there anything else you’d like to tell us about your experience of hybrid teaching and learning on this course that would help us improve our approach?

Each course organiser receives this report as well as statistics on multiple-choice responses. All these reports, together with student feedback about individual members of teaching staff, are collected and sent to the Director of Learning and Teaching.

Please note that these are personal responses from individual students: some courses only have a few responses and a small sample can be unrepresentative.

Stereotyping and bias, especially unconscious bias, is a serious concern in any survey gathering personal responses. All students received the rubric below before completing the surveys, and you can read a brief introduction to issues of unconscious bias on the university web pages at [http://edin.ac/2iypZBv](http://edin.ac/2iypZBv)

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### Rubric given to all students taking the end-of-course feedback survey

We value your opinions on the courses you take here at the University, as they allow us to shape future delivery and development. We welcome constructive comments about your courses, whether positive or negative, and ask you to give details about any issues in order to help the course organiser to understand and address them.

We encourage you to be aware of the potential for bias in the completion of these questionnaires, so we have developed resources which may be helpful to you:

- Equality, Diversity and Unconscious Bias ([http://edin.ac/2iypZBv](http://edin.ac/2iypZBv))

You also have a responsibility to provide feedback in a manner which does not breach the University’s Dignity and Respect Policy:

- University of Edinburgh Dignity and Respect Policy ([http://edin.ac/1Cq0VZY](http://edin.ac/1Cq0VZY))

The results of the questionnaires will never be analysed in a way that seeks to identify individual students from their responses. However, should you wish to remain anonymous, please do not identify yourself in your answers to the survey questionnaire implicitly or explicitly.
1. Computer Security [INFR10067_20-21_SV1_SEM2_ONLINE_CACORE19] -

What did you find most valuable about the course?

- All the coursework of this course is so fun and I really enjoyed them.
- Broad coverage of topics, room to adjust how deep you go according to your needs and current interests. Good teaching and slides.
- Coursework 3 was fun.
- Doing the coursework was super helpful to learn the concepts. Having the TA and Myrto support on Pizza was really important! Thr master overview on learn was great to access all resources
- Great lecturers who explain the topic well
- I found its surprisingly broad subject area very valuable - not only did it aim to teach security, but also a solid foundation in both low level stack operations and networking.
- I found the coursework to be extremely useful in assisting my personal understanding.
- It gave a nice overview over lots of areas in Computer Science in general, so apart from the Security content which I also really enjoyed, it helps to give an idea of which areas may be of interest in the future and informs further course choices. The coursework were fun!
  Generally, I found most of the topics really interesting and it would be nice if there were follow-up courses focusing on single areas and going more into depth. These exist for cryptography and secure programming, but for instance one on network security could also be interesting.
- Its a good overview of the subject with some deep-diving. It has solid lecturers and seems to be relevant.
- Learned a lot of new interesting things about computers - the coursework, though varied in how much of a challenge they can be, were engaging, interactive and most importantly fun.
- Learning about the different vulnerabilities that computers have and how to mitigate them.
- Learning so many different things at once.
- Lots of interesting information on a variety of subjects, coursework allowed examination of practical aspects in detail.
- Not necessarily valuable but I really enjoyed the hands on hacking coursework
- The Learn page was organised very nicely (I loved the colour coding!)
- The content of the course is very interesting and the lectures are very engaging, especially Dr Myrto Arapinis, who is very approachable.
- The hands-on approach and the fact that the topics are applicable in the real world (and the fact that we’re actually taught how to apply it!)
- The lecturers were great and really helped us on piazza, both during coursework and simply to understand the lecture materials. I also learnt a lot about how to use tools like google to help with simple things (real-world skills).
- The tutorials were really useful.
- This course covers a wide range of materials very well. The tutorials were helpful and my tutor was great. The coursework was genuinely engaging and it was good to do hands on cyber security in a controlled environment.
- Very interesting course. Gives a good introduction to computer security.
- coursework is a good way to improve practice technique
- knowledge about computer security
- secure
What improvements, if any, would you make to the course?

- As always, the lecturers could be better at presenting. If they sound more confident and excited that will be reflected in the students.

- Coursework 1 was confusing to set up.

- Balance the Courseworks higher than the exam so you can provide more practical experience in computer security rather than exam questions.

- Communicate coursework dates more clearly. They were changed several times mid-way through the semester, but not updated everywhere on Learn which was confusing.

- Either have a bit more information about OS security + assembly in the lectures, or slightly change the last coursework to include more Network security - as interesting as it is, right now it’s a bit too hard and a bit too much independent learning for one coursework (e.g. compared to CW2)

- I wish the lectures would be released a bit earlier given online learning. For example, since no lectures were live, it would have been nice if all the lectures for the week were released at the start of the week.

- I wish there were more live sessions or weekly live hours to join and ask questions. That being said, the clinic is a great idea!!!

- I would like to explore some famous examples of computer security breaches more thoroughly

- I’d like to see a clearer emphasis on what is examinable. At the moment we have just the lecture pdf’s which, while the lectures themselves were fine, are not the greatest revision material. I’d like to have seen maybe some summary sections, or maybe some explicit notes that outlined what certain things we had to learn were.

- It’s hard to keep an good schedule this year so it was slightly frustrating when some of the lectures were uploaded a few days late as it means work piles up.

- Labs. The coursework was interesting, but ultimately needed a lot of additional background research and the learning curve to even start CW3 was a bit much. Optional lab sheets or guidance for using bash and gdb would be incredible. Some resource was provided, but they were unrecorded clinics during busy weeks, so not all students could benefit. It’d be great if they were recorded or if they were offered throughout multiple weeks.

- Make coursework 3 have more modern exploitation techniques like ROP and heap exploitation.

- Make the lectures a bit more concise. Hour long lectures make it hard to concentrate as it is.

- Make week 1/2 more structured - I’m pretty sure lecture 2 was uploaded before 1b which was a bit annoying.

- Maybe mix the tutorials to have also some more coding ones

- More tutorials or perhaps discussion groups like the ones in MLPR (Machine Learning and Pattern Recognition)

- No improvements needed

- The first coursework was very difficult to get up and running, using Virtual Box as in CW3 would have been nice maybe.

- The second coursework was a bit hard to set up working from home.

- make more detailed guidance of coursework

- and the lecture is a little long to watch

- no.

- quality of online recordings

- two of the lectures have really bad English pronunciation
2. Computer Security

2.1) What advice would you give to a student taking this course in future?

- Do the reading!
- Do the reading, attend the tutorials and start on the coursework early.
- Familiarise yourself with how stacks work if you’ve taken a CS course before, if not then prepare by reading in advance for CW3.
- Get started on the readings and coursework asap
- Go to all the lectures
- Google tutorials, use piazza, ask questions
- I do not think any student would need anything specifically. I believe this course is a pretty good one and I recommend anyone take it. You learn from different topics and the courseworks are pretty interesting as well. I did not find them as hard as the ones for Computer Systems, but they are not super easy neither.
- Prepare early the for the coursework, the buffer overflows coursework requires very extensive knowledge of the stack and how protocols for calling and returning from functions.
- Read the book and watch the lectures to fully understand the content.
- Really interesting course, take notes cause there’s a lot of content to remember. Start the courseworks early as as few of them take a while.
- Start the coursework early and don’t be discouraged if it takes time! The hardest part is getting started (cw3).
- Study up on your maths and be prepared to prove using primes and using your proofs and problem solving and discrete maths skills for cryptography. Refresh yourself in registers and program execution. This course can get complex with some of its material, it isn’t all theory.
- The coursework seems difficult at first but once you actually sit down and spend a couple hours on it it’s really not too bad (this applies to cw 1&2, I have not started cw3 at this point in time).
- The reading is quite a lot but it's nice. Start courseworks early, not because of their difficulty, mainly because the VM setup takes a while and you will encounter lots of issues because things run very differently on different machines. However, the piazza support for these technical issues is good.
- Watch the lectures and the demos, and come to the tutorials - all those things are really helpful!
- good
- independent learning is important but does not miss the discussion with your teachers and classmates.
- start on the coursework early so that you can enjoy it.
- this course is challenging, so prepare in advance
3. Computer Security -

3.2) Please add any other comments you have about workshops, tutorials or labs on this course

- Didn't really go

- I like that the questions are taken from past papers - it really helps understand better what we're expected to know. Everyone is great at explaining the material as well.

- I think having more tutorials would keep people more engaged in the course, especially because if you do have any questions, you're likely to have forgotten them by the time of the tutorial. However, lecturers are very responsive on piazza, so it's not a big deal. It was amazing of Myrto to offer CW3 clinic sessions - thank you again so much for your dedication! It was clear that the lecturers all listened to feedback and implemented some improvements - shoutout to the whole course team!

- Make them more frequent.

- Not enough engagement

- Please stop hiring undergraduate tutors. It is rare they are actually able to answer questions that stray even slightly from the questions on tutorial sheets.

- The CW3 Clinic was an excellent resource run by Dr Myrto Arapinis. I found the tutorials were not very beneficial, the information about them and their organisation could have been improved.

- The tutorials are reasonably challenging and quite informative.

- The tutorials were really useful and engaging!

- The workshops/tutorials that were on offer were great, but more are needed on the more practical aspects.

- good
4. Computer Security -

4.1) Please add any other comments you have about the presentation of course materials online and their accessibility.

- Generally I found the lectures to be excellent, the practicals to be well prepared. Especially during covid, I greatly appreciate the attempt to make the work accessible to people who work on different operating systems even if this was not always the easiest.

- I really like how everything is organised in the schedule, the only thing that could have been improved was that the videos were uploaded onto 2 different platforms and the assessment submission links could have been integrated as well.

- It was fine, some lecturers even had multiple lectures available. There were occasional delays but they were fine.

- Lectures were great but sometimes the slides would be out of sync with the speaker (not sure if this is my doing or theirs though)

- Myrto's lectures were not uploaded on time. I must say it was more than reasonable since she had to cope with the coursework herself and the 4th year projects. Also she did 1 hour sessions for a whole week to help people with their coursework. I think we all would have benefited from a TA helping with coursework 3.

- Please make a coherent learn structure for accessing materials that all courses use.

- The book was not available in pdf form, and instead was only available through an irritating ebook loan system.

- The colored timetable is probably the best I've seen! It's really easy to see different course sections, and how courseworks/tutorials correspond to each of those. It's also nice to get everything from one place (this table) rather than go to different pages for content or assessment.

- The single big table approach is FANTASTIC - this should be the standard for all courses. It saves so much effort hunting around the learn page for a single data or PDF link.

- english pronunciation so poor i don't even know how pass ed u uni standard

- good
Reflecting on your experience of hybrid teaching and learning on this course, what has worked well for you?

- Being able to organize my time as I please.
- Being able to watch lectures at any time is quite useful, however not having live lectures makes me fall behind.
- Great support for technical issues, no complaints. A bit of a lack of tutorial participation but that is common enough.
- Having prerecorded lectures.
- I generally find developing anything on virtual machines to be more difficult due to technical limitations. Remote dice quite frankly doesn't actually allow me to develop anything as it is very unreliable.
- I liked that resources were offered, I just wish I could've taken more use of them. The fact the lectures were all prerecorded with few live ones made it hard to engage sometimes. The live lectures on offer were nice, though. Revision help is being offered too which is nice.
- Microsoft teams is much better than BlackBoard, which just crashes and freezes all the time. The CW Clinics and Q&A Sessions were great, it was nice to have a live face to face.
- Online lectures were good. I found the ones for cryptography a boring and that made them hard to follow. I would recommend adding a bit of excitement or maybe doing one of them online, but seriously it seemed that the professor did not even check the slides beforehand: If you go to those lectures it's pretty easy to see him reading through each slide before "explaining" = reading through it.
- Q&A sections online are helpful.
- Stop calling it hybrid, it's only been online, no one is falling for it
- The Piazza forum was great! The lecturers were really helpful and quick to respond.
- online recording
- yes woked very well
12.04.2021

EvaSys Evaluation

12.04.2021

EvaSys Evaluation

Is there anything else you'd like to tell us about your experience of hybrid teaching and learning on this course that would help us improve our approach?

- Hybrid teaching really doesn't work for me and hurts my motivation.
- I would change the organisation of tutorials on Teams. Right now every group is a separate team, which makes it quite complicated (because for some reason each breakout room is a separate channel instead of the usual rooms?), and it puts a lot of extra pressure on Myrto to add someone to another group if they'd like to change groups. So maybe having one CS team with group channels would be better - then the students have access to several groups, and it feels slightly more organised, as everything is in one place.
- It would be nice to have actual hybrid rather than fully online.
- Lecture recordings + live Q&A sessions + live tutorials
- No many students attend the tutorial so it's kinda boring.
- Nothing that has not already been mentioned.
- Stop calling it hybrid, it's only been online, no one is falling for it
- The attempt to make coursework available on different OSs greatly improved my experience of coursework as it meant I could spent more time actually focusing on the work and my understanding rather than setting up environments and dealing with technicalities.
- There was no hybrid learning, this is fully online.
- Why is it called hybrid teaching? It is an online semester which I am certainly in favour of, I do not want in person classes for as long as this pandemic is still around, but calling it hybrid is just a euphemism.
11. Thank you -  
Thank you very much for taking the time to complete this questionnaire. Your response and comments will be fully considered.

Please provide any additional comments you may have about the course, the teaching on the course or the resources that support it in the box below.

- Again - great support! Fantastic course team!
- I enjoyed the coursework from this course immensely, and this massively increased my interest and enthusiasm in other parts of the course.
- Really really liked everything!
- Stop calling it hybrid, it's only been online, no one is falling for it
- Thank you for doing what you do, we appreciate it!
- This is a really interesting course and I learned a lot, thank you! Also, I think it was fantastic that Myrto immediately took feedback into account and organised the "3 clinic"!
- Great module, my favourite module soo far