

Software Vulnerabilities (Full Summer 2022)

Instructor: **Onarlioglu, Kaan**
 Subject: **CY**
 Catalog & Section: **5770 01**
 Course ID: **52313**
 Objectives:

Enrollment: **44**
 Responses Incl Declines: **41**
 Declines: **0**

Questions to Assess Students' Online Experience

Question	Number of Responses	Response Rate	Course Mean	Dept. Mean	Univ. Mean	Course Median	Dept. Median	Univ. Median
Online course materials were organized to help me navigate through the course week by week.	41	93%	4.6	4.6	4.1	5.0	5.0	4.0
Online interactions with my instructor created a sense of connection in the virtual classroom.	41	93%	4.4	4.4	3.8	5.0	5.0	4.0
Online course interactions created a sense of community and connection to my classmates.	41	93%	4.1	4.0	3.8	5.0	5.0	4.0
I had the necessary computer skills and technology to successfully complete the course.	41	93%	4.6	4.7	4.3	5.0	5.0	5.0

Note: 5:Strongly Agree; 4:Agree; 3:Neutral; 2:Disagree; 1:Strongly Disagree; 0:N/A;

Course Related Questions

Question	Number of Responses	Response Rate	Course Mean	Dept. Mean	Univ. Mean	Course Median	Dept. Median	Univ. Median
The syllabus was accurate and helpful in delineating expectations and course outcomes.	41	93%	4.9	4.9	4.3	5.0	5.0	5.0
Required and additional course materials were helpful in achieving course outcomes.	41	93%	4.7	4.7	4.2	5.0	5.0	4.0

Note: 5:Strongly Agree; 4:Agree; 3:Neutral; 2:Disagree; 1:Strongly Disagree;

Learning Related Questions

Question	Number of Responses	Response Rate	Course Mean	Dept. Mean	Univ. Mean	Course Median	Dept. Median	Univ. Median
In-class sessions were helpful for learning.	41	93%	4.9	4.7	4.2	5.0	5.0	4.0
Out-of-class assignments and/or fieldwork were helpful for learning.	41	93%	4.7	4.7	4.1	5.0	5.0	4.0
This course was intellectually challenging.	41	93%	4.9	4.7	4.3	5.0	5.0	5.0
I learned a lot in this course.	41	93%	4.9	4.9	4.3	5.0	5.0	5.0

Note: 5:Strongly Agree; 4:Agree; 3:Neutral; 2:Disagree; 1:Strongly Disagree;

Instructor Related Questions: Kaan Onarlioglu

Question	Number of Responses	Response Rate	Course Mean	Dept. Mean	Univ. Mean	Course Median	Dept. Median	Univ. Median
The instructor came to class prepared to teach.	41	93%	5.0	4.9	4.4	5.0	5.0	5.0
The instructor used class time effectively.	41	93%	4.8	4.7	4.3	5.0	5.0	5.0
The instructor clearly communicated ideas and information.	41	93%	4.8	4.8	4.3	5.0	5.0	5.0
The instructor provided sufficient feedback.	41	93%	4.8	4.7	4.2	5.0	5.0	5.0
The instructor fairly evaluated my performance.	41	93%	4.8	4.8	4.3	5.0	5.0	5.0
The instructor was available to assist students outside of class.	41	93%	4.9	4.8	4.3	5.0	5.0	5.0
The instructor facilitated a respectful and inclusive learning environment.	41	93%	4.9	4.9	4.4	5.0	5.0	5.0
The instructor displayed enthusiasm for the course.	41	93%	5.0	4.9	4.4	5.0	5.0	5.0

Note: 5:Strongly Agree; 4:Agree; 3:Neutral; 2:Disagree; 1:Strongly Disagree;

Instructor Effectiveness: Kaan Onarlioglu

Question	Number of Responses	Response Rate	Course Mean	Dept. Mean	Univ. Mean	Course Median	Dept. Median	Univ. Median
What is your overall rating of this instructor's teaching effectiveness?	41	93%	5.0	4.9	4.3	5.0	5.0	5.0

Note: 5:Almost Always Effective; 4:Usually Effective; 3:Sometimes Effective; 2:Rarely Effective; 1:Never Effective;

Instructor Related Questions: Kaan Onarlioglu (70 comments)

Q: What were the strengths of this course and/or this instructor?

- The class is well structured ! The professor truly enjoys teaching and is passionate about cybersecurity. Kaan is true to himself and it's apparent in his teaching style. He is willing to go the extra mile to help students succeed but only if they are willing to meet him halfway. I think one of biggest strengths of this class is the mandatory attendance. There's no way students will be able to succeed in this class without being present. I also think the grading system for the assignments is another strength of this course; you either submit the assignment or not which is pretty straightforward. He doesn't want students to fail.
- The instructor, Prof Kaan, delivers the content in a simple and very uncomplicated way. I loved the lecture delivery and was able to grasp complicated topics just because of the way they were explained.
- Kaan delivered lectures very well, and challenges were helped in understanding the content of the lectures. Kaan was readily available on Piazza and answered almost all the questions very swiftly.
- very challenging course work ; the lectures were super interesting and engaging ; clear grading guidelines
- Very interesting, unique and challenging course. Across multiple challenges, I feel i got practical insights into various security topics that's going to be so useful in my software dev career
- Challenging course and assignments
Prompt reply on piazza
- .
- Real-life challenges to have better understanding of the concepts discussed in class.
- This has been the best course I've taken at Northeastern so far. The instructor has an incredible passion for the course and cares about students succeeding.
- Challenges are intellectually challenging and fun
- I felt that professor Kaan was passionate about teaching. He really emphasized having his students learn and understand the materials covered in class. He was knowledgeable and open enough to answer any questions. He taught things that were helpful for students in various fields including those in CS and CY programs.

I loved how he made TAs work on the same challenges as the students. Because his class is very customized. Meaning we are using a lab environment that he created and the challenges have various learning curves and obstacles or defenses, one can explain best after working on the challenges and completing them. Thus, it made it easier for us (students) to ask for some guidance with the challenges.

Additionally, I liked how the challenges were challenging. In order for one to work on 80% of the challenges, one would need to understand the lecture materials covered to have an idea of how to approach the problem. Thus, the challenges are like real-life implementations of things learned in each lecture. Which I honestly think would be super helpful when we start working in the field.

No Textbook: Honestly, I was very surprised when he initially announced it. But, now I fully understand why. The materials he covered in class can probably be found in multiple books. maybe about 5-10 of them. I don't think there is a single book that has everything he covered in class. He gave vivid, current examples. Basically, his lectures were more than great for fully understanding each topic covered.

Plus, he recorded each lecture. Making it easier to go back and re-listen the lecture over and over again until they get the full picture. For a 3-hour class, the course covered a lot of materials, and at such a late hour the brain process things at such a low rate/speed. Recording the lecture was such a win for this class. I wish all professors could do the same. He even purchased a professional mic to make the audio quality better.

12 Challenges really taught me the content of the course

13 Kaan is the only professor who brought his personality to the course, I haven't had a more funny professor yet and his slides are hilarious too. If you love anime and games, you'll enjoy the way he talks about his passion and how the first bonus challenge was. Other than the personality quirks, I believe that he is very knowledgeable he has a very open and free attitude in the class, you can ask him anything.

14 The strength of the instructor is being very effective in delivering information.

15 The top-notch assignments and course content are covered. Simple best course till now.

16 He genuinely wants us to learn stuff.

17 Very responsive to questions. Incredibly interesting lecturer.

18 Professor Onarlioglu's CY 3740 / CY 5770 is one of the best courses I've ever taken. He is extremely knowledgeable and enthusiastic about the topic. The classes are always engaging and effective with a little bit of humor that's refreshing. He provides both an academic and industry perspective of the subject which I believe is invaluable and have rarely seen this with the other courses that I've taken.

19 Amazing course with lots of real life applications. Initially I felt like I did a mistake by taking this course, but now if I look back at my journey, I feel I have gathered so much knowledge in a span of just 3 months. Honestly I only took this course, because this was my last semester and I had no in-person course option other than this, I was very frustrated when I had to study cybersecurity. With Kaan and his effective teaching challenges, I ended up loving this area and would definitely like to keep my knowledge up to date in this area always.

20 The instructor is a working security professional in addition to being an academic. His real-world perspective made the course more engaging and relevant. The challenges provided real problem solving opportunities where we were given enough context to be able to discover the solutions for ourselves. The professor is very responsive and provides just enough information to keep you on the edge of your knowledge and allow you to continue discovering. This was a very effective learning method for me. It was challenging and fun.

21 His Teaching style and piazza replies were of great accuracy and timing.

22 I really like Kaan's style of teaching. His ample industry experience paired with his knack for teaching is a formidable combination that I would like all my professors to have. And this definitely reflected in the assignments and course structure as well.

23 Clear teaching, sense of humor, dedicated and personalized feedback

24 Practical assignment
Much more on hands
Great teacher
Interesting classes
Huge amount of knowledge
Weird questions in exam though but all in all fun experience

25 The professor was very helpful. He provided the exact amount of guidance to be able to solve the challenges and truly prepared me to go out there and be a successful security engineer.

26 The professor is knowledgeable of the subjects, and very enthusiastic about teaching others how to create secure programs. He is always available, and provides very practical lessons/homework to reinforce the concepts. I leave this course feeling like I've gained real, applicable skills and knowledge to the modern world of software engineering and cybersecurity. I do not plan to go into cybersecurity as a career, but this was extremely useful for anyone who plans to work in software engineering, data science, or other computer science fields.

27 The course outlines the current and evolving software threats

28 He was very responsive on Piazza and his feedback was always very thoughtful and helpful.

Q: What could the instructor do to make this course better?

- 1 This was not the professor's fault, but the only suggestion to make this course better would be to offer more office hours. The coursework is demanding and I think having more than one TA will be beneficial for students to excel.

- 2 I loved the course overall. I am confident, that this will play a major role in updating my resume and hopefully grabbing jobs. Equal weightage was given to a lot of diverse topics through security rather than just focussing on one niche specialization such as reverse engineering. This course is great, especially with the teaching methodologies and interesting assignments. Flexible deadlines made it easier to manage it with a co-op.

Not an improvement, but would have loved an insight into cloud security.

- 3 Nothing, It's perfect.

- 4 I think it might have been good if Kaan would have demonstrated live how he would have approached the challenges and solved a few challenges live so that student could see the thought process as to how he was approaching the problems, what were obvious pitfalls to avoid so that you don't waste unnecessary time on things that aren't useful in the challenges.

- 5 time management was a bit of an issue sometimes if we ran over. It never got in the way of office hours though. Just like Kaan though my brain stops working! Esp if I have been up early. Sometimes the late night post class office hours were not the move so I appreciated the few times I was able to attend alternative sessions via zoom or discussions on piazza if the situation warranted

- 6 I understand this course wasn't designed to be taken remotely as I was taking it, but it would have been helpful for me to be able to participate in after-class office hours remotely.

- 7 Its already the greatest possible I guess.

- 8 No particular feedback regarding this. I definitely feel I've learnt more than I thought I would before I enrolled.

- 9 No written exams

- 10 .

- 11 I think the course is perfect
Challenging but perfect

- 12 No improvements needed. The course and content delivery was really good.

- 13 In hindsight, the lectures could've potentially been split into 2 lectures/week at the cost of convenience to achieve higher focus levels. But given that the lecture recordings were made available, this concern has been mitigated to a large extent.

- 14 I loved everything but having the lab session after class. The class covers a lot of great materials. After a 2/2.5-hour lecture session, most people like me are tired. Having the lab session after class directly was a little too much for me. I would recommend maybe having a lab session on a different day other than the lecture. He later introduced a TA session which was really helpful. But, I think this might be something he can consider in the future.

- 15 Lectures should be more structured. Slides should be clearer. Slides should be provided ahead of time.

- 16 provide a few more references for the challenges but don't change the challenge deadline criteria that he has right now. if I had to religiously do 1 challenge every week with the deadline, I wouldn't have been able to complete the challenges

- 17 Nothing, the course was perfect. I couldn't have asked for a better hands on security course.

- 18 There was a lot of new software and tools that were introduced to me in this course. I think links to tutorials, documentation, or articles that the professor deems useful would be great. Self-teaching is important, but there are often bad resources online that may lead students down entirely separate rabbit holes or be detrimental to one's learning.

In addition, asking the professor a question on Piazza about some of these programs can be unhelpful, because sometimes his answers are a bit too vague/cryptic, which gives the same result as a bad article online.

There needs to be more guidance on how to use something like curl, netcat, python.requests, jad, etc. Even just a single link in a homework description would be helpful.

- 19 Cover more practicals in class or extra sessions.

- 20 Maybe he could have done more 'code walkthroughs' or demo sessions

- 21 Perhaps consider groups assignments. It seemed that groups naturally formed during the course, and it was acceptable for students to be working in groups. This is not something I'm used to. I felt disadvantaged at some points as I didn't know anyone else in the course.

- 22 My learning style is different from others, and I think the professor giving feedback and asking question makes the class interactive. This is already the case.

Q: Please expand on the instructor's strengths and/or areas for improvement in facilitating inclusive learning.

- 1
 - Great delivery of content
 - Practical examples and meaningful insights into building the background knowledge.
 - Fun and light-hearted discussions which are very relevant

- Encourages questions and discussions
 - Very interesting assignments
 - Interesting exam patterns
-
- 2 Kaan is an amazing Professor, easily approachable and always ready to help students. His teaching style is very effective and he ensures everyone in his class grabs every concept.
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- 3 Tbh "Honker" is a weird name for challenge 9
- I did laugh but I also did cringe
-
- 4 Kaan is always approachable after class or on Piazza. in-class discussions covered variety of security topics and were very engaging. The challenges were very practical, gamified and hands-on. Required fair amount of exploration and persisting through multiple failures before you receive the sweet solution token.
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- 5 I was impressed by the professor's responsiveness to both public and private questions. He skillfully navigated providing private help and providing public information without spoilers for people that were working on challenges.
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- 6 May be a team work or team project so that I could get a picture how others think.
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- 7 Learning material had practical applications. Professor had deep knowledge of the course material.
-
- 8 .
-
- 9 His knowledge is mind-blowing
Everyone who knows stuff can't teach
Luckily he is amazing at teaching as well
Really enjoyed the course
-
- 10 The concepts were clearly explained along with sufficient examples and demonstrations.
-
- 11
- The instructor was very well prepared for all the lectures.
 - The instructor was truly invested in student success and made the material particularly engaging
 - The instructor dedicated sufficient time to helping students overcome doubts and challenges
-
- 12 Strengths - Really helpful and highly knowledgeable.
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- 13 I have a personal confession for this class. I have been at NEU since 2019, went through the Align program, and am now about to complete the CY program. When I took this class, I didn't have many expectations of it. It was just another technical class. At first, he scared a lot of students by emphasizing how technical the class is. But, it was a good scare. it made me stay alert and realized I need to work hard in this class.
- Then as I went through the challenges, they were hard. But, both the professor and TA were available for assistance via piazza. After completing the challenges, I felt empowered with whatever topic we covered because at that point I fully grasped the materials covered. I could say what I learned even with my eyes closed. I remember going home and having a discussion with my dad about how much I love this class almost every week.
- It was the most engaging class I have ever been to. The professor does not discriminate or make anyone feel bad when they ask questions during class. Despite your level of understanding of the topic.
- In summary, this class boost my confidence in how my skills were good enough to be part of the program and to go into the field. I felt so confident that I applied for a Cybersecurity job this summer, went through 5 different interviews, and some of the interview questions we covered in this class. In short, this class has made my summer and I am glad I took it. Every penny spent was worth it. Thank you professor Kaan.
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- 14 Hands on based course. Really helps me learn and spend time debugging a task and struggling to get to the end. Better than exams from lectures that weren't really structured, too much content, not clear what was on the exam
-
- 15 I think the professor is in good standing, it would be more interesting and helpful for the students if he explained the basics again at the start of a new module.
-
- 16 I enjoyed the aspect of the course that involved self-teaching. The slides provided foundational knowledge, and we were required to do some more research to figure out the solutions on our own. This is incredibly necessary in cybersecurity - much of it is research or learning how to hack something (so that you can avoid creating something that can be hacked).
- I just wanted some more guidance on the tools of a program we may have to use, similar to how we got primers on networking or memory. It did not help in solving the homework specifically, it only gave concepts necessary to do them.
-
- 17 He is very helpful, always on our checking if we have questions. Concerned about the performance of his students. Very knowledgeable and open.
-
- 18 Kaan is pretty much the perfect professor. I only had 1 issue with him as an instructor. There were times during live lectures where things were pointed out physically in class (e.g. physical hand points to something in code). This would not be detected by online students, and is not at all visible in online re-watches of lectures. I would try and use some virtual pointing mechanism.
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- 19 The instructor has advanced knowledge in security and works in a big company as security expert. This brings the best out of him from both worlds.
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- 20 The course was very well organized, interesting, and challenging. I learned a lot.

Questions to Assess Students' Online Experience (18 comments)

Q: Please comment on your experience of the online course environment in the open-ended text box.

- 1 I liked warhead !
- 2 The online course material was very well thought out and very relevant. The video lectures were recorded and available later for any clarifications which were extremely helpful.
- 3 N/A
- 4 Amazing!
- 5 The virtual encounters via Piazza were all super helpful. I could go through my classmates' questions for any given challenge but also post privately or publicly. Professor had a super fast response time for posts too and the help was always a good nudge in the right direction.
- 6 This was an in-person class that I participated in remotely. While it wasn't intended to be an online course, the materials, class sessions, and recordings were effective for participating remotely. Everything I needed was available remotely and the professor was very responsive.
- 7 Its an amazing experience.
- 8 Enjoyed the course. It was challenging but helped me learn a lot.
- 9 .
- 10 It is a great experience. I got tons of personalized feedback from the instructor.
- 11 Other than Piazza, everything was done in a lab environment. Nothing much to say here.
- 12 Using own server instead of Canvas actually was beneficial... Liked challenges hands on to actually learn better. Slides were a mess and was hard to understand.
- 13 I will be honest, I was not equipped with the technical skills to get all the challenges done, however, the professor provided us with enough information to start working. Doing own research is definitely needed
- 14 I had a great experience online as well. Professor used respond to questions/doubts on Piazza very immediately which made the learning experience even more interesting.
- 15 The professor is always available online - more so than any other professor I've ever had. We were actually not allowed to collaborate with other students on the homework (which actually makes sense just in the way the homework is set up) but that did create a lack of community online, since every question I posted on Piazza needed to be private and directed towards the instructors. I appreciated the Hall of Fame the professor had up, just to see where everyone was at in terms of completing the homework and if I was falling behind in any way, but I did not get to know anyone online.
- 16 It was good. Organized everything at one place.
- 17 It was very challenging but the professor is great at explaining every topic and even giving a short introduction if necessary. He always asked if we had questions.
Very open, and passionate about the topics. Overall, he cares about his students.
- 18 The materials were precious and meet the course outline.

Student Self-Assessment of their Effort to Achieve Course Outcomes (23 comments)

Q: What I could have done to make this course better for myself.

- 1 Think outside of the box and trust myself. I second guessed myself many times during this course.
- 2 I loved the course. Could have pushed to complete all brags and bonus points. However, was bound by a co-op.
- 3 Start the assignments as early as possible.
- 4 N/A
- 5 I feel like sometimes I didn't have necessary background to certain challenges. Having necessary background to complete the challenges might have helped.
- 6 May be provided examples similar to challenges in class.
- 7 I learned how to study for the written assessments later in the class. I think I studied the challenges too much at first instead of really just focusing on lecture material.

- 8 Nothing comes to mind.
- 9 Learn about more cyber attacks
- 10 Replace midterm and final exam with more assignments.
- 11 .
- 12 If I didn't have my Co op along with the subject, I could have focused on learning more in the course
- 13 There is nothing. I really enjoyed the class.
- 14 I could've dedicated more time to spend on assignments.
- 15 Not procrastinate on the challenges or reviewing for the exams.
- 16 Clearer slides. Less connected with exams. Office hours were great, but very late in the day. Hard for full time employees.
- 17 start the challenges on time, ask doubts to the professor regardless of how stupid they sound in your head, research a lot on your stuff, and make mistakes to learn from them.
- 18 I couldn't have asked for better course. I enjoyed every moment of it. Hands down the best professor and best course I have taken in cybersecurity
- 19 I would have been more engaging in the challenges by going deep beyond the required concepts.
- 20 As an ALIGN student, I lack the foundational background that most students in this course had. To make the course better, I think a course in networking (at any level) and a course in low level programming (ie operating systems, assembly, etc) would have been helpful. But the primers the professor provided were certainly sufficient to get through the course, along with a bit of extra learning at home.
- 21 Spend more time studying related topics
- 22 Collaborate with other students
- 23 Could have revised more and done the challenges earlier.