



# 2023S Instructor Report for CS 8395 07 - Special Topics (Kevin Leach)

Project Title: **Vanderbilt University Course and Teaching Evaluations**

Course Audience: **14**

Responses Received: **10**

Response Ratio: **71.43%**

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## Report Comments

The following is a report for an individual section of a class. Please do not distribute, print, or share this report except for administrative purposes.

Project Audience - Total number of students enrolled

Responses Received - Number of evaluations submitted by students

Response Ratio - Percent of enrolled students who submitted evaluations

If you have any questions about the evaluation system please contact [course.evaluations@vanderbilt.edu](mailto:course.evaluations@vanderbilt.edu).

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Prepared by: **Vanderbilt University Course and Teaching Evaluations**

Creation Date: **Sunday, August 6, 2023**

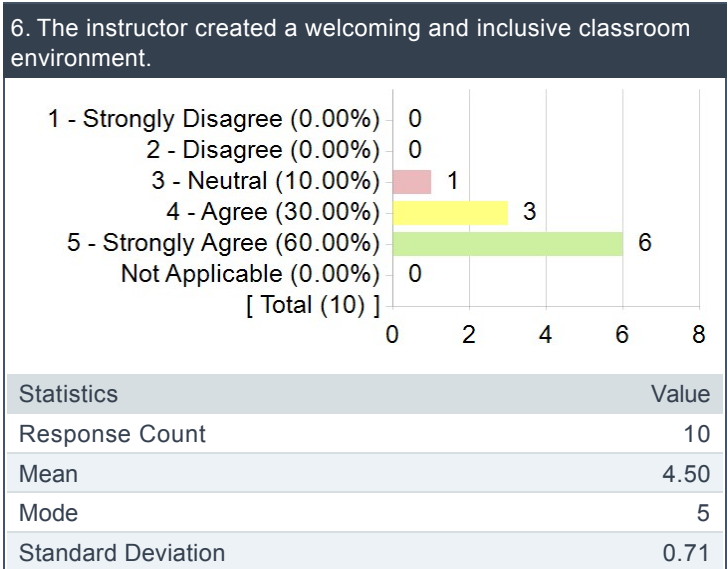
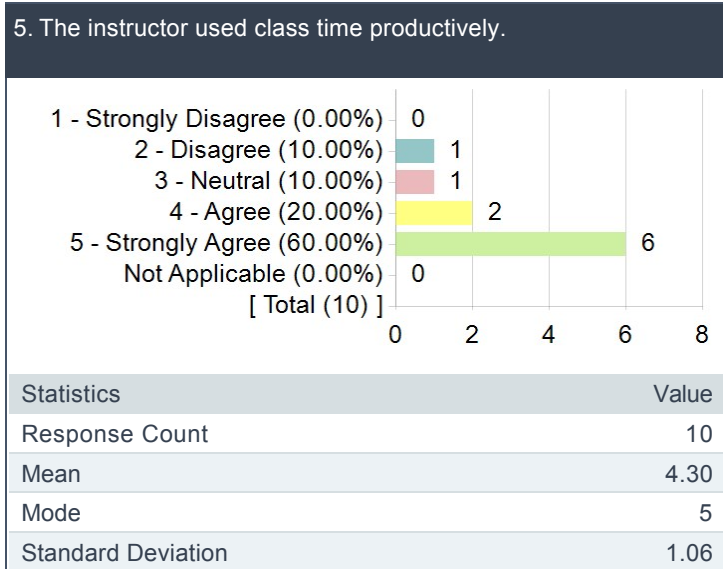
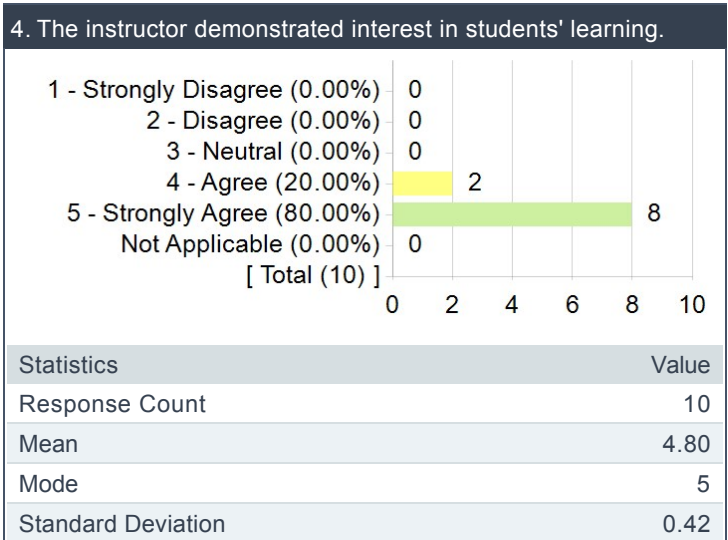
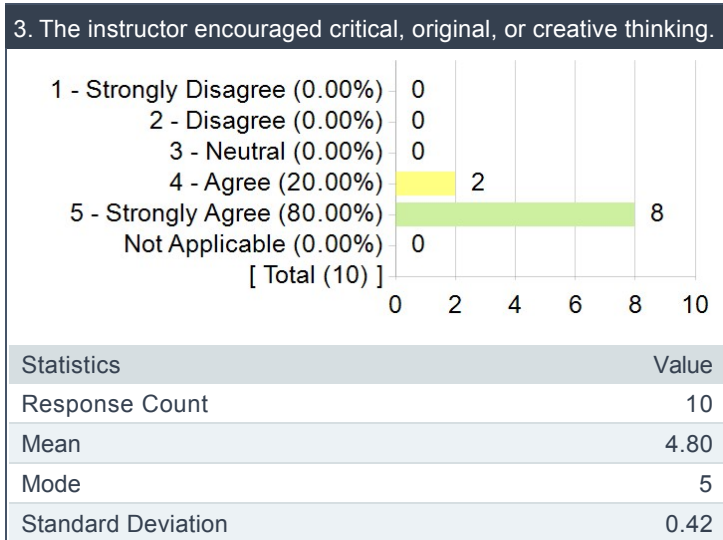
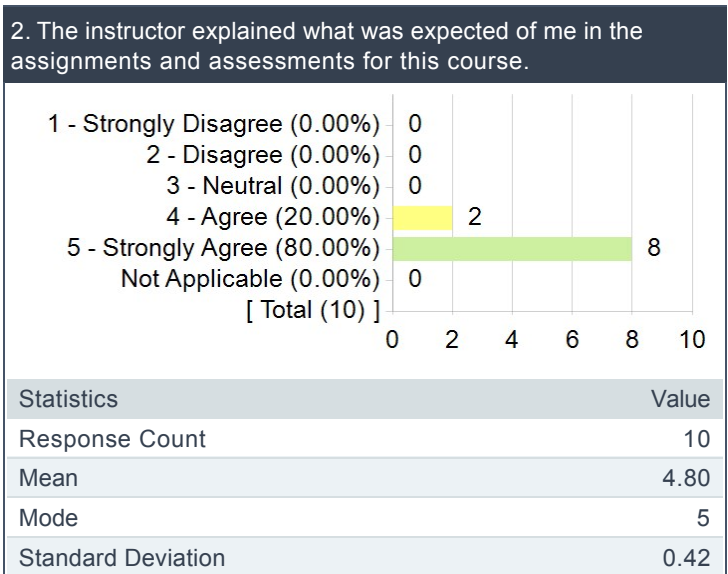
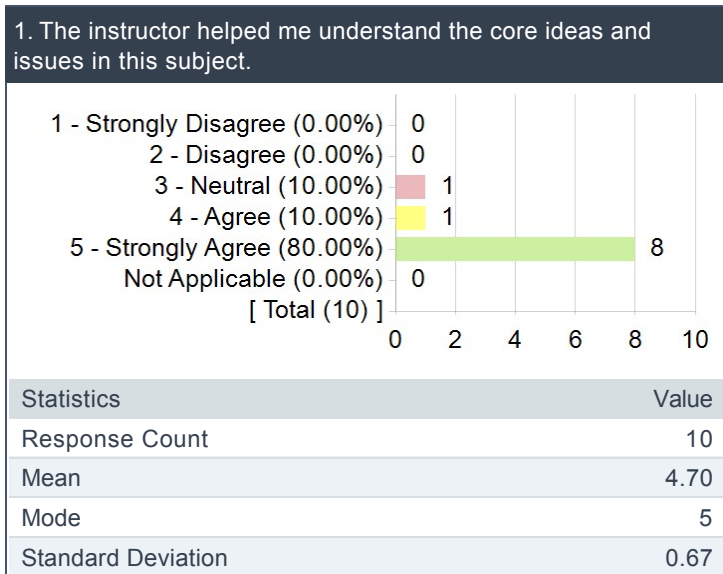
### Questions about the Instructor (Kevin Leach):

Question	This Class Section		Department (CS)		School (ENGIN)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
The instructor helped me understand the core ideas and issues in this subject.	4.70	0.67	4.33	0.92	4.36	0.90
The instructor explained what was expected of me in the assignments and assessments for this course.	4.80	0.42	4.42	0.86	4.40	0.88
The instructor encouraged critical, original, or creative thinking.	4.80	0.42	4.35	0.92	4.37	0.91
The instructor demonstrated interest in students' learning.	4.80	0.42	4.45	0.84	4.49	0.82
The instructor used class time productively.	4.30	1.06	4.37	0.90	4.35	0.94
The instructor created a welcoming and inclusive classroom environment.	4.50	0.71	4.48	0.81	4.50	0.83
Overall, the instructor (Kevin Leach) was:	4.60	0.52	4.20	0.96	4.23	0.95

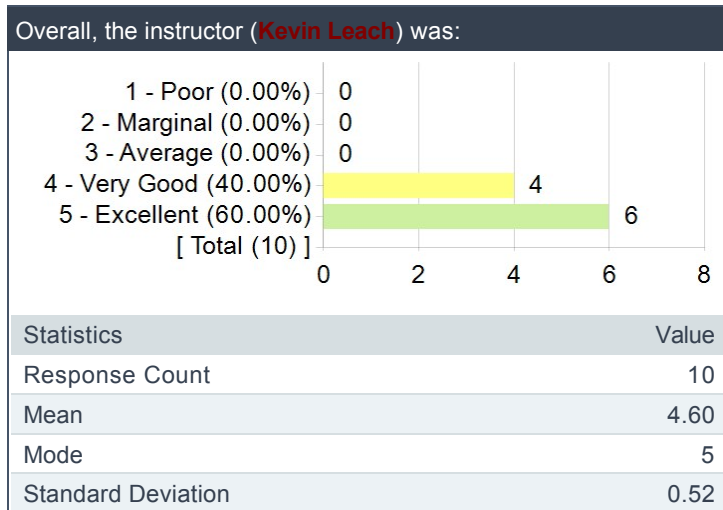
### Questions about this Course (CS 8395 07):

Question	This Class Section		Department (CS)		School (ENGIN)	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
This course helped me appreciate the significance of the subject matter.	4.70	0.67	4.26	0.98	4.28	0.97
The components of the course, such as class activities, assessments, and assignments, were consistent with the course goals.	4.60	0.52	4.42	0.85	4.41	0.83
The feedback I received during the course was helpful.	4.40	1.07	4.10	1.03	4.13	1.03
I felt comfortable asking questions in this course.	4.30	1.06	4.26	0.96	4.36	0.93
This course helped me consider connections between course material and other areas of my personal, academic, or professional life.	4.60	0.84	4.19	1.03	4.26	1.01
Overall, the course (CS 8395 07) was:	4.20	0.79	3.91	1.02	3.93	1.02
Compared to other classes, the amount I learned in this course was:	3.40	1.26	3.75	1.01	3.65	1.04
Compared to requirements in other classes, the workload assigned in this class was:	3.60	0.84	3.62	0.96	3.46	0.99

Please respond to the following questions about the instructor (**Kevin Leach**).

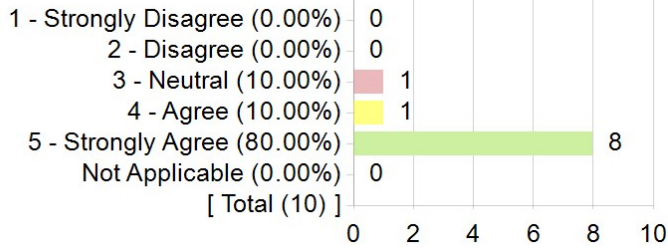


Overall, the instructor (Kevin Leach) was:



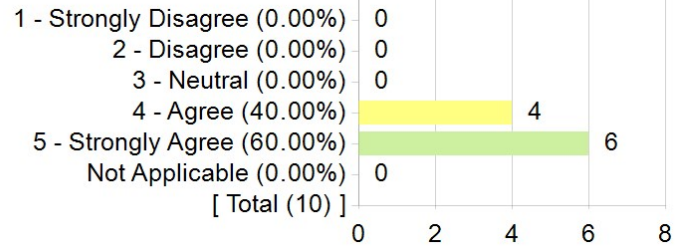
## Questions About This Course (CS 8395 07):

1. This course helped me appreciate the significance of the subject matter.



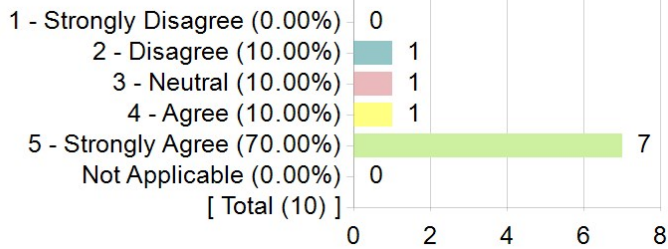
Statistics	Value
Response Count	10
Mean	4.70
Mode	5
Standard Deviation	0.67

2. The components of the course, such as class activities, assessments, and assignments, were consistent with the course goals.



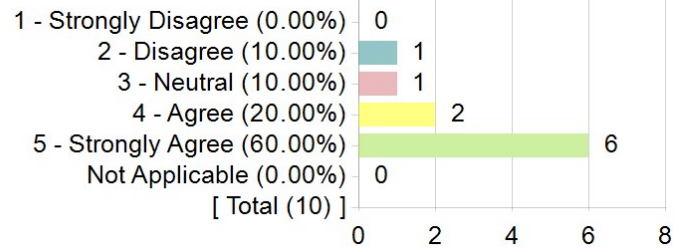
Statistics	Value
Response Count	10
Mean	4.60
Mode	5
Standard Deviation	0.52

3. The feedback I received during the course was helpful.



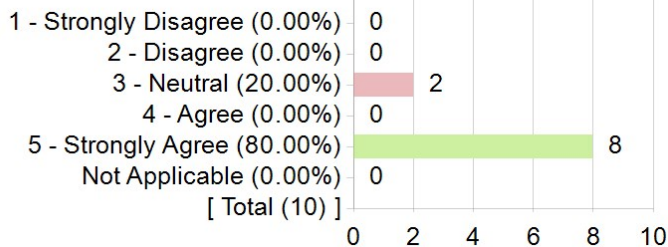
Statistics	Value
Response Count	10
Mean	4.40
Mode	5
Standard Deviation	1.07

4. I felt comfortable asking questions in this course.



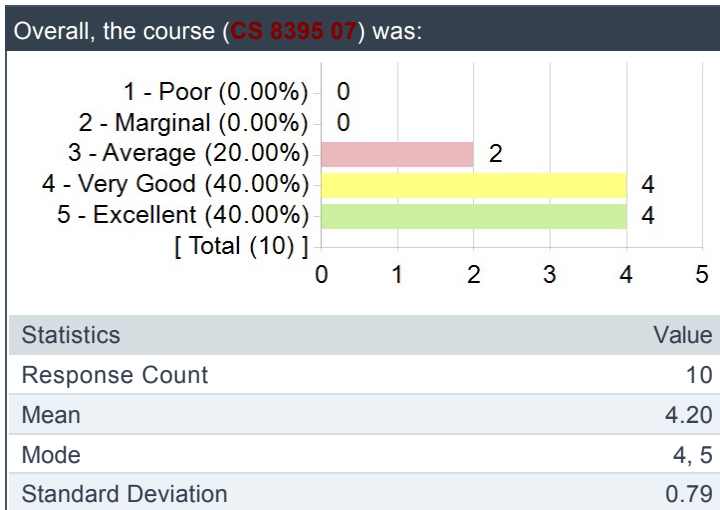
Statistics	Value
Response Count	10
Mean	4.30
Mode	5
Standard Deviation	1.06

5. This course helped me consider connections between course material and other areas of my personal, academic, or professional life.

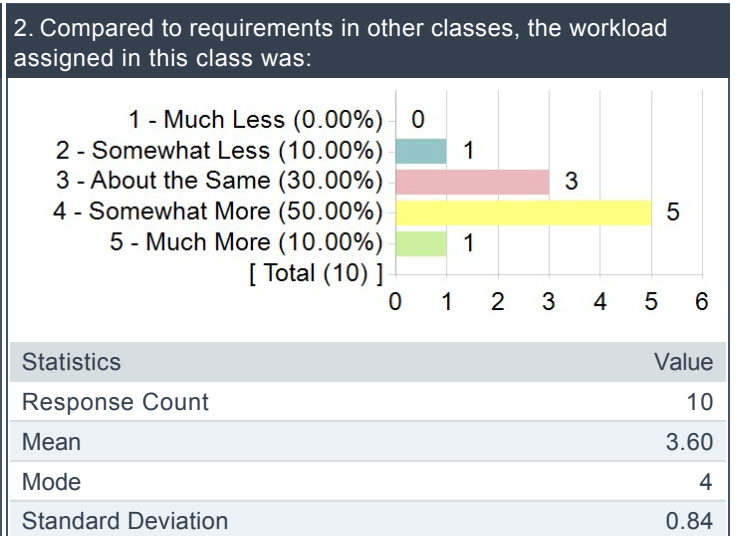
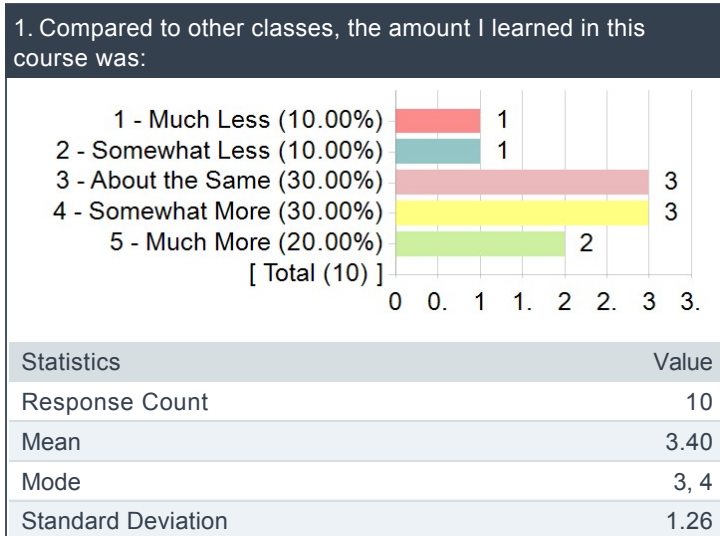


Statistics	Value
Response Count	10
Mean	4.60
Mode	5
Standard Deviation	0.84

## Overall the course was:



## Questions About This Course (CS 8395 07):



## What elements of the course (CS 8395 07) most contributed to your learning?

Comments
<ul style="list-style-type: none"><li>– Research Project</li><li>– Some instructor lead lectures</li></ul>
Lectures were very thorough an lots of the readings were helpful. The assignments were tough, but they were good for learning the details of security in practice, especially the stack overflow assignment.
I'll complain about all the readings, but I learned a lot from them and thought it was a helpful practice to be consistent with them.
(1) This course gave us a well–rounded look at a bunch of important security topics, which really helped us understand the ins and outs of the subject. It kept things interesting the whole way through; (2) I loved how the course was set up with guest speakers, group presentations, and team research. It kept us engaged and made learning fun, not to mention we got to work with our classmates and learn from experts; (3) That one–time outdoor lecture was a nice change of pace. It was cool to get some fresh air and still learn something new. It brought us closer as a class and made the whole experience even better.
The lectures helped me understand teh material better, because sometimes I had trouble understanding the reading material the night before.
The reading assignments. I thought it was excellent practice to be able to quickly digest a paper and write up some notes. I think that component will be useful for the rest of my research career. Also, HWs 1 and 2 were great exposure assignments to security tools. As someone who had explored CTFs and some basic security things before the course, I was happy to get hands on experience with Metasploit, Kali, Ghidra, LLVM, and some basic attacks.
I know it was supposedly one of the more contentious elements of the class, but I thought the paper reviews were pretty good assignments overall that helped improve critical skills when reading scientific literature.
The course focuses on guiding students to learn relevant knowledge about computer security. It provides a well–guided learning outline and carefully designed framework to lead students to learn security concepts effectively. Under the guidance of Prof. Leach, students are able to learn the research ideas of security and receive assistance and guidance in planning their academic and research careers. I can clearly feel that Prof. Leach has put a lot of time and effort into this course, making it outstanding.
I like how he shares his past experiences and explains to us what's valuable when going into the either the industry field or research field.

## What improvements to the course (CS 8395 07) would you recommend?

### Comments

– Lectures were not technical enough, and student lead presentations were unfortunately largely non-pedagogical. This is due to short time, repetitive material, and sometimes just due to low effort. Students can't present technical research as well as a seasoned researcher.

– Reading is repetitive (the vegetables), but it could be more fun if there were more options and we could pick and choose (human studies focus, systems focus, etc)

Others have pointed out that there is too much reading, but I think that it might be better if it felt like there was an incentive to read in the class other than just to do the reviews. What I mean is that more student interaction in lectures where we discuss papers rather than just listen to a lecture about them might be helpful.

There was one reading that was due on the same day as Homework 3, and considering the readings did take a lot of time, it would've been nice to have gotten a break here. Also, I had a couple reviews that were slightly over 400 words, so maybe this can be a soft threshold of 400 words?

I hope the feedback on assignments can be more timely

I feel that the volume of required reading for this course can be overwhelming for students, especially considering our other commitments. Additionally, certain topics seemed a bit outdated and could benefit from being refreshed with more current information. On the other hand, while some of the assignments were intriguing and encouraged creative thinking, they often demanded a significant time investment, which made it challenging to maintain a balanced workload throughout the semester.

I think the homeworks were sometimes a little to complex, especially for someone with little OS and assembly language background.

A few things:

– I would completely drop the class participation component from the course, and increase the weight on readings and homeworks. In my opinion, class participation should not be a grading metric for any course (especially in grad school), as it seems to explicitly favor students with specific personality types (introvert vs. extrovert, shy vs. outgoing, etc.). I think half of the in-class discussion portion should go to paper reviews and homework assignments, as I think those are the important parts of the course. If it has to be a part of the grade, consider specifically calling out students in class; some students are very confident in raising their hands and even interrupting during class, so sometimes it is hard to participate.

– I never felt comfortable asking questions, and struggled to find opportunities. Most of the time that I raised my hand, the professor was staring at the ceiling while giving the lecture and did not see it, and then the class moved on or another more outgoing student interrupted the lecture to ask their question and I decided to forget about it. While I understand that eye contact can be difficult, consider more brief scans for hands.

– I think HW0 and HW3 could be completely dropped from the course. My new suggestion is: HW0 == VMs, HW1 == Ghidra (and maybe IDA Pro), and HW3 == LLVM. Now, I'll provide my reasoning. I don't feel like I learned much from HW0, and I think the content could be covered to basically the same extent with a lecture. I basically just googled until I met the word count, and I wasn't super confident in any of my write-up. The lecture about systems abstraction was useful, though. HW3 seemed more related to software engineering, and I felt it was not super related to what we talked about in the course. It also came around at the end of the semester when other things were piling up (such as the final project and readings), and fuzzing is covered in the software engineering course as well. Finally, HW2 was a beast and a lot of students seemed to struggle with it, so I would split up the Ghidra and LLVM components. I would also add a bit more to the Ghidra assignment, since the task did not even require really using Ghidra to find the passwords. Maybe, students could be required to patch the program using Ghidra, as I think it is a cool tool. You could even add a part about IDA Pro in that HW, and HW1 could become an assignment on Reverse Engineering, while LLVM could be its own separate assignment. I think Reverse Engineering is a key topic; I have talked to a lot of security professionals as a result of my external PhD funding, and most of them ask me if I've had experience with Reverse Engineering.

– The course can be a lot at times, especially with other courses and research assignments for grad students. The final thing I would consider is to not have HW assignments and reading assignments due on the same day; I think HW1 and HW3 were due on the day of a reading assignment. Decreasing the homework count by 1 would help to accomplish this.

I felt the first two assignments were rather daunting, particularly their latter segments. I would appreciate if at the very least additional time was spent talking about them in class, rather than only when assigned and right before they're due.

Although the assignments are not the core part of this course, it is evident that they have been thoughtfully designed. However, considering this course has no prerequisite requirements, Prof. Leach has provided a considerable amount of coddling assistance, such as offering dedicated scripts to help students use gdb. I am unsure whether this might be excessive coddling.



## Do you have any other comments?

### Comments

- Grading is unpleasant and time consuming, but feedback weeks after submission is not ideal
- There should be some assumed knowledge (prerequisites). Basic networking, memory layout, etc. should be assumed for a graduate level course. It harms advanced students, and discourages attendance/participation/attention for them as well.

Overall great course! We spent a lot of the course time talking about research in general during class time, which is an important and little-talked-about part of grad school, but some days I wish we had gone over the material more

Overall, I believe this course stands out as one of the premier seminars for students who want to delve into cutting-edge security research. The rich and diverse content provided in the course not only equips students with the knowledge and tools needed to excel in their specific research fields, but also sparks curiosity and a desire to discover new concepts and ideas. The course's emphasis on innovative thinking encourages students to push boundaries and continuously seek out fresh perspectives in the realm of security research.

Overall, I learned a lot from the course and enjoyed most of my time. Dr. Leach is a very understanding professor who seems to really care about his students and the content of his course. He is not looking to weed out or fail anyone, but also expects a lot from you so that you get as much out of the time you spend in the course as possible. I would recommend this course to anybody with an interest in cybersecurity, whether that's research or industry.