

Columbia University: School of Engineering

Summer A 2021 SEAS Final Evaluation

Course: COMSW4995_001_2021_2-TOPICSINCOMPUTERSCIENCE: COMSW4995_001_2021_2 - TOPICS IN COMPUTER SCIENCE

Instructor: Jae Lee *

Response Rate: 35/86 (40.70 %)

1 - Course: Amount Learned

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	0	0.00%					
Good	(3)	6	17.14%					
Very Good	(4)	11	31.43%					
Excellent	(5)	18	51.43%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
35/86 (40.70%)				4.34		0.76		5.00

2 - Course: Appropriateness of Workload

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	3	8.57%					
Fair	(2)	8	22.86%					
Good	(3)	5	14.29%					
Very Good	(4)	10	28.57%					
Excellent	(5)	9	25.71%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
35/86 (40.70%)				3.40		1.33		4.00

3 - Course: Fairness of Grading Process

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	1	2.86%					
Good	(3)	7	20.00%					
Very Good	(4)	10	28.57%					
Excellent	(5)	17	48.57%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
35/86 (40.70%)				4.23		0.88		4.00

4 - Course: Overall Quality

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	1	2.86%					
Fair	(2)	1	2.86%					
Good	(3)	8	22.86%					
Very Good	(4)	9	25.71%					
Excellent	(5)	16	45.71%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
35/86 (40.70%)				4.09		1.04		4.00

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Response Rate: 35/86 (40.70 %)

5 - Enter any additional comments here

Response Rate	21/86 (24.42%)
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- Even though I learnt CPP in my undergrad, I definitely learned lots in this class, I finally understand why some functionalities were designed like that which I have been pondering upon since my ug. The assignments were fun and challenging. Thank You Professor for this wonderful course.
- Although I gained a lot from the course and enjoyed lab4, I can sympathize with the people who disliked the workload towards the end. Labs 1-3 were definitely very straightforward and simple (maybe a little too easy), but then lab4 was a huge jump in complexity! I've spent a significant amount of time on lab4. I still think the course was chill since the other labs were straightforward, but the "chill factor" may have been misleading for others when it came to lab4. I think lab4 is still a well designed lab and should be used in future semesters because it taught me a lot. I would've liked to cover multithreading and concurrency, but I understand it was difficult to cover all the material in the shortened session. I would've preferred those topics over the lecture in probability distributions in C++ though, but that's just me.
- For a course whose content and assignments were made on the fly, it was excellent. I think this is owed to Jae's excellent baseline pedagogical ability.
- I think Lab 4 should be broken into two labs though I'm not sure how that would be possible in a shortened remote semester. I found the workload far more intense than AP but again, in a full semester, it would likely be less intense. Overall I found the depth of the lectures great. For example, most courses would just go over examples of inheritance and give example usage. Having a grasp of an entire class structure in memory gives a FAR better understanding than iterating over usage examples.
- excellent class taught by an excellent professor. Jae is simply the best at CS@CU. Was the course heavier than it was advertised, yes. But that doesn't detract from the amount that was learned, and the final project is going to be a portfolio piece. It encompasses skills learned throughout 2 years of CS. Keep this course going, it was a good format, and the assignments were good. I especially appreciate how it built off of AP, especially with the mdb/xdx stuff. I feel prepared to code in c++ now, thanks Jae!
- I'm glad that I took this class because I learned a whole lot about C++ that would otherwise be much harder to do on my own. Thank you for organizing a great course despite doing so pretty much on the fly. I found drawing comparisons to C to be very helpful, especially when understanding why certain things were done in a certain way in C++. Regarding course content, I was happy that most of the planned material was covered. I wish more time could be spent on the material from 6/8 (variadic templates and smart pointers). It would also be nice to learn about threads, even though deep understanding would require knowledge of operating systems. Regarding assignments, I think there should have been a more gradual ramp-up in difficulty. Lab 1 needs to be harder. Lab 2 was reused from old AP, which was extremely unfair because there were many students who have taken that version of AP and easily had access to solutions. Lab 4 was fun with a lot of moving parts, but it would be worthwhile to go through all the questions that people asked and integrate some of the answers into the lab prompt. Finally, it was a mistake to call this a "chill" course, which gave a wrong expectation to certain students.
- -(This course reaffirmed my love-hate relationship with Jae's courses. The earlier labs were sooo deceptive of the course's overall difficulty: labs 1-3 were so manageable (even really easy) while lab 4 is so long/challenging. While I understand (and even appreciate) why Jae would assign us such a substantial lab, I just wish he was up front about it from the start, so that we could've dropped/PDFed it while we could. But I still learned a lot from this course, and Jae is a great lecturer! I still think, however, I would've much more enjoyed this course if it was full-semester length. I think having shorter but more labs with fewer jumps in difficulty in between would've been much better for everyone's sanity and learning — the time given in between the labs were too long
- For me, the is the most enjoyable CS class at Columbia (Even better than AP). Even though each class lasts for 2.5 hours, I always feel like I want to learn more about C++ after class. However, I don't really recommend this class to people who only take AP at Columbia (i.e. people don't have previous experience about C++). I personally recommend this class to those who have experience with C++ and now want to know what exactly happened under the hood!
- Only wish this was a full semester course with even more content!
- Overall lecture quality was very good, and I believe the instructor covered everything that was initially designed to be covered. I think the course can talk more about language-agnostic things. The course already talks about String, deque, vector implementations, templates, etc which are quite interesting even for non-C++ programmers so I think the course can continue expanding on that direction. This course can also serve as the bridge between C and other high level languages like Java and Python, then the school would have complete curriculum from computer architecture and machine languages to high level languages. I think the homeworks are well designed. The workload was appropriate for a 4000-level course, but I wish workload was more evenly distributed throughout the course. I ended up writing my own test scripts, but I think it would be helpful if more advanced and through test scripts were provided so that students can iterate their ideas faster. I think kind of help would be better than extending hw deadlines (as in lab4). For a person with no prior C++ experience, the exam was a bit too difficult, in an unpleasant way. Many questions require to think twice while keeping track of all the side requirements and dos and don'ts ("assume...", "you cannot..."), but I was not given enough time for that. I think I could have answered most of them correctly if I had enough time but I ended up just guessing many of the multiple selection questions because I ran out of time. Each choice in multiple selection problems is technically one full True/False question just by itself. Please allocate at least 2 minutes or so for each SELECTION if you need to have them. Q1 had 24 selections worth 30/100 points in a 75 min exam. I think question designed to take less than 1 minute to think through is more appropriate for SAT than a graduate level exam. I don't think "time management" should be of any serious factor at all. Well designed exams are still very challenging without any time constraints. Also, I think allowing extra time for "Stress and anxiety" or anything similar to this was a mistake (if this was actually allowed. I am not sure). It would not have matter much if the exam had plenty of time without extension, but well it did not. We can not measure or prove "Stress and anxiety" on the fly, can we? I think it only added more uncertainty and unfairness to the exam.
- I want to preface my rant by saying I'm not an amazing CS student. I do decent, but am never the top of the class in most of my courses. I got a B- in AP, and was quite content with it. I felt that I learned a lot, and had a much deeper understanding of CS than I did prior. This is why, despite my recognition of Jae as a harsh (but rightfully so) grader, I came back for C2CPP. I didn't care if it tanked my GPA, as long as I left learning nearly as much as I did in AP. I did not believe it would be a "chill" course. With this being said, in my opinion, C2CPP was absolutely not on par with the quality of AP. I walked out of this course feeling like I've really absorbed a fraction of its material. A part of this, I admit, is because after the burnout of the spring term, I had a hard time focusing for 2 and half hours straight for a high intensity summer term (I'm also taking NLP and working a part time job which wasn't a good idea). The code fragments posted on the course page did help a ton. However, I do feel like a large part of this underwhelming feeling is because the course pacing is off. The first two labs were barely any work. (I could argue that HW 1 should be rolled into HW 0. Have us set up make and git just as we set up our listserv. Rolling this back would also allow for slower paced homeworks later in the term.) HW 2 would have been a great HW 1. HW 3 was fair. HW 4 was a huge spike in difficulty because it covered more content than the other homeworks and was much tougher to grasp than HW 3. (From my perspective, which others might not share.) I think that rolling the 0th and 1st homeworks into one, shifting the 2nd and 3rd homeworks back, and then spreading HW 4 into smaller, more approachable assignments would result in a much smoother course load. I did terribly on the final. I didn't really know how to study other than going through my notes and I'm just not a great test taker in general. I'm frustrated with myself because my performance on the final didn't reflect the effort I put into my labs. I honestly have no clue how I would have done better though. I had taken decent notes and understood the concepts in class, but I just blanked on the final. I couldn't connect the dots and no amount of extra time would have brought me down from the overwhelming sensation of "this is going to be bad." Overall, I walked out of AP with a sense of accomplishment. "I survived." (Or well, "My GPA survived.") I didn't feel that with C2CPP. Jae and the TAs I've interacted with are absolutely solid. The course itself is what loses me. Sorry for the somewhat disorganized rant, but thanks for listening.
- The last lab4 is not balanced with the previous assignments, and in contrast to Advanced Programmings, the previous labs does not prepare the student to the last lab (e.g. lab7 of AP). Perhaps, the instructions of lab4 can be improved in further details to facilitate the gap. Moreover, TA office hours during the week occurs only during the evening which makes it inconvenient for certain people with conflicting schedule. I offer to mix the hours rather than push all TA OH to the evening.
- Great course, quite enjoyed it.
- This class was amazing in that it covered most of the key components of C++. The final lab was a serious tour de force that called on nearly every facet of computer science fundamentals. Could have added a bit more in the lab to illustrate algorithm analysis and choice of data structure - like ask for a operations to be done in a certain time complexity - or have students think why a deque vs array vs list, but the lab is already so packed. My biggest suggestion is that this class should be combined with AP 3157 and the two should constitute a year long required course for the CS major. The workload is fine, but a bit high for the compressed time of a summer course.
- I really enjoyed this class. It completes the Java -> C -> C++ journey of the CS core, even better if you've taken PLT with Edwards and the journey is Java -> C -> OCaml -> C++. Even with no C++ experience before this class and a pretty mediocre grade in AP F2019, I just received an offer for a full-time C++ role at a financial firm thanks to learning from Jae's deep dives during lecture, like comparing C++ to Java and C, explaining motivations and justifications for the language's design, revealing the magic (and mischief) of the compiler and how things are implemented under the hood, etc. I wanted to share that personal victory because it is directly due to Jae being an energizing professor and providing exceptional quality education. I wouldn't have had the confidence to pivot from the full-stack web app development that I've been doing for the past 2 years without this class. Thank you Jae! One note about lab 4 - since I am a class of 2021 "grad" and don't need this class to graduate, I prioritized job interviews that happened to get busy around the end of the term and didn't attempt or finish part 2 of lab 4, regrettably. It was definitely **not** an act of rebellion, which I just wanted to say because I know some students expressed that they thought that the assignment's difficulty was unfair or unreasonable.

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- I like course the the strong dedication the instructor put in. As a constructive suggestion, I would say the focus of labs should be on illustrating and comparing C++ features, OO design, or design patterns of C++. For example, lab4 has a strong "prerequisite" context knowledge requirement for the understanding of Makefile. This should not be the focus of a C++ course. There are many ways to make the assignment both challenging and educationally informative without such a load of background knowledge. For example, the lab can be constructed to address a toy problem but compare different designs (e.g. in areas such as extensibility of code, performance, understandability of code) in achieving the same goal (e.g. template vs inheritance, design pattern A vs B vs without any, how to better use namespace or structure different source/header files, different ways to design the inheritance structure, OO design vs non-OO design). These toy labs, through comparison of different implementations, can also be used to illustrate the motivation and application scenarios of newly introduced features (e.g. lambda functions, shared pointers vs unique pointers, noexcept keyword). I do believe this way of designing assignments is much more useful (at least for understanding of the C++ language) than the lab4 we had.
- Most of the course was done very well, and it didnt feel like it was being offered for the first time. The content seemed to flow very nicely and I personally learned a lot. There were a few lectures that I wasnt like the one with folding expressions and stuff, and it didnt help that we didnt do any labs on them. Generally though, the course was very high quality. I would've liked more labs though, especially since labs 1 and 2 could have been done in much less time than what we were given, and the averages were ridiculously high.
- I learned a ton in this class. I've never coded in C++ before and now I feel like I know a lot more than the average C++ programmer.
- In terms of material and content I am not disappointed with what we covered. The exam type not so much, I personally don't believe that a software engineering test should have "all or nothing" questions. To me it doesn't prove to me that I know if things work and how to use and apply them but more so do I memorize the exact intricacies of something and when we are studying a topic that has so many exceptions and weird behaviors I don't see how this shows deep understanding and mastery of material. If I studied 99% of the course inside and out and the I didn't have time to study the remaining 1% that is all or nothing and the questions happen to be about this 1% then according to the test I know nothing. The homework's this semester were fair up until the final one. I understand that hw1 and 2 were easy and that hw 3 was normal but making an assignment of this scale in such short time (started early was well) made me go from excited to learn and build to resentful. I have taken Jae's classes before so I never take him seriously when he says something is easy but that final assignment given the time was a huge burden. It is cool, and I definitely see the use in it and I do feel more confident in my C++ skills, but the stress, sleepless nights, resentment, missing out on other functions and responsibilities, and fear of performance made it not worth near the end.
- Workload was described as being "normal" in comparison to AP, but AP is already a lot of work. Labs 3 and 4 felt like they went on forever when I was doing them, they could possibly be split into two assignments each into shorter timeframes. Perhaps in a normal semester it would be more manageable, though still heavy.
- I feel like the workload was ultimately manageable, but I didn't like how the course was framed as "chill" in the beginning and later shot up in difficulty

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6 - Instructor: Organization and Preparation

Jae Lee

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	0	0.00%					
Good	(3)	5	14.29%					
Very Good	(4)	8	22.86%					
Excellent	(5)	22	62.86%					
				0 25 50 100	Question			
Response Rate				Mean	STD	Median		
35/86 (40.70%)				4.49	0.74	5.00		

7 - Instructor: Classroom Delivery

Jae Lee

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	0	0.00%					
Good	(3)	1	2.86%					
Very Good	(4)	11	31.43%					
Excellent	(5)	23	65.71%					
				0 25 50 100	Question			
Response Rate				Mean	STD	Median		
35/86 (40.70%)				4.63	0.55	5.00		

8 - Instructor: Approachability

Jae Lee

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	3	8.57%					
Good	(3)	5	14.29%					
Very Good	(4)	9	25.71%					
Excellent	(5)	18	51.43%					
				0 25 50 100	Question			
Response Rate				Mean	STD	Median		
35/86 (40.70%)				4.20	0.99	5.00		

9 - Instructor: Overall Quality

Jae Lee

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%					
Fair	(2)	0	0.00%					
Good	(3)	6	17.14%					
Very Good	(4)	7	20.00%					
Excellent	(5)	22	62.86%					
				0 25 50 100	Question			
Response Rate				Mean	STD	Median		
35/86 (40.70%)				4.46	0.78	5.00		

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Response Rate: 35/86 (40.70 %)

10 - Would you nominate this professor for the SEAS Distinguished Faculty Award?

Jae Lee

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Yes	(1)	23	76.67%		1.23 			
No	(2)	7	23.33%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
30/86 (34.88%)				1.23		0.43		1.00

11 - If so, please explain why

Jae Lee

Response Rate	11/86 (12.79%)
• He is an all around excellent professor. My two favorite courses at Columbia were both his. • There are a lot of professors who made little if any adjustment to their course requirements or materials to accommodate a fully remote semester and few are willing to adjust mid way through to help students adapt. Jae continually did both. He built this course for remote learning and adjusted it in progress - even adjusting grading requirements when a number of students felt overwhelmed. This allowed many people (myself included) the flexibility to learn and experiment without additional stress in an already stressful and suboptimal period. • Prof. Lee painstakingly designed his course to include a lot of live coding and code walkthroughs to explain the language, and it was wonderful. It set apart the course content from all the other blog posts and textbooks you'd normally find out there on the same subject. Despite the short duration, he did not compromise on the course plan and covered enough ground to impart a decent level of expertise over the language. I think Prof. Lee deserves to be nominated for the SEAS Distinguished Faculty Award. • He is simply the best undergrad lecturer. Clear, concise, and always prepared. The coursework also clearly builds off of what we did in AP, which I really appreciate • As always, Jae provides everything you need! • Jae prepared an effective course from scratch, all of which is his original materials. The course if far from being perfect, but for a first run, it was great if we are being realistic. • Phenomenal professor, really takes the time to go through material step-by-step and explain thoroughly. • Professor Lee goes above and beyond to prepare his material and to make sure it provides robust learning experiences. He is also very friendly and approachable. • I can see clearly that the course is well prepared and the instructor highly dedicated to the course. I like the interactive way the instructor delivers lecture by working through and playing around with code (not just going over slides). This is especially helpful for this kind of programming course that has recording. • He makes the subject very enjoyable and the last lab was designed amazingly well. • Jae is an amazing lecturer, he is actually one of my personal favorites. He describes thing clearly, is honest, open to discussion, and willing to hear criticism, and is a fun teacher. However, his examining style has always been the bane of my existence because of the whole all or nothing style. It has always made my doubt my skills and performance because I believed these results were a reflection of my understanding of the materials. But both in career and academics, when it came to applying the skills and techniques I learned from Jae, others both senior engineers and fellow peers tell me I demonstrate a deep understanding of the material. Maybe I am just a bad test taker, but I honestly don't see how an all or nothing approach in an engineering class makes sense. Especially when most things aren't as clear cut as a yes or no. Honestly if it wasn't for this style, I wouldn't mind nominating him because again Jae is an amazing lecturer. But with this style of testing it just feels like he is a gatekeeper and many other students and grads agree.	

12 - Overall Quality

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%		0.00 			
Fair	(2)	0	0.00%					
Good	(3)	0	0.00%					
Very Good	(4)	0	0.00%					
Excellent	(5)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

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13 - Knowledgeability

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%		0.00			
Fair	(2)	0	0.00%					
Good	(3)	0	0.00%					
Very Good	(4)	0	0.00%					
Excellent	(5)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

14 - Approachability

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%		0.00			
Fair	(2)	0	0.00%					
Good	(3)	0	0.00%					
Very Good	(4)	0	0.00%					
Excellent	(5)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

15 - Availability

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%		0.00			
Fair	(2)	0	0.00%					
Good	(3)	0	0.00%					
Very Good	(4)	0	0.00%					
Excellent	(5)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

16 - Communication

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Poor	(1)	0	0.00%		0.00			
Fair	(2)	0	0.00%					
Good	(3)	0	0.00%					
Very Good	(4)	0	0.00%					
Excellent	(5)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

17 - Does this TA communicate effectively in English?

Response Option	Weight	Frequency	Percent	Percent Responses	Means			
Yes	(1)	0	0.00%		0.00			
No	(2)	0	0.00%					
N/A	(3)	0	0.00%					
				0 25 50 100	Question			
Response Rate				Mean		STD		Median
0/86 (0.00%)				0.00		0.00		0.00

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18 - Comments	
Response Rate	0/86 (0%)