Scalable Distributed Systems (Spring 2024)

Instructor: **Saripalli, Kanaka**
Subject: **CS**
Catalog & Section: **6650 03**
Course ID: **35161**
Objectives:

Enrollment: **63**
Responses Incl Declines: **62**
Declines: **0**

Instructor Related Questions: Kanaka Saripalli (77 comments)

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

1	The instructor was accommodating at least. I got the gist from Piazza that others needed clarification and others had missed some information about homework requirements. The instructor made allowances, I think, so he seems reasonable and nice. The TA's were helpful.
2	This course has greatly supported my understanding of system performance and important components in software and hardware. Aiming to become a software engineer, I always want to know how to deal with failures and scalability.
3	BAD TEACHER AND BAD TAS
4	The professor is very amiable, flexible and understandable of students
5	This is a very technical course which was close to algorithms involved in distributed systems
6	He is strong in the course topics and clearly communicated them to the students
7	Not the best lecturer. No slides. Just opens the textbook and starts talking about random sections. Lectures can be hard to follow. However, they are helpful as a review after I've studied the textbook sections on my own in preparation. But at that point I already know the material, the lecture is just a generic review (which can be helpful in reenforcing). Very difficult to learn anything during lectures without prior preparation. You would have to know the topic well first, then his explanations start making sense. Professor is caring and tried to have helpful group discussions. It would help if people participated more during lecture but it's personally difficult for me to participate since I just feel lost. Like if I don't fully prepare beforehand then I'm just lost and don't even know what I don't know. I honestly think just preparing some slides would help sooo much. Like he has all these resources that he just dumps onto canvas and expects us to parse through it with no context. It would be super helpful if he could collect the info from these resources into slides or SOMETHING to keep himself organized during lectures. Then the resources could be there if we want extra help on a topic. Right now he will just open a textbook section or pdf and say "this is very important, study this" and not give an explanation.
8	Tough to grades
9	The course provides a valuable opportunity for practical application, allowing students to integrate and apply the knowledge acquired in previous courses. Through real-world examples and assignments, students gain insight into how to effectively utilize their learning in various contexts, thereby enhancing their understanding and skill development.
10	The course provides a strong foundation in the core concepts of distributed systems, emphasizes practical learning through hands-on projects, and fosters a positive learning environment. The instructor and TA team are highly responsive to student questions and concerns, providing timely assistance and clarification whenever needed.
11	Very active on Piazza and Outlook outside of the course
12	The course covers a solid and basic knowledge of distributed systems, which is good as a foundation of further exploration in this area.
13	The professor gave a very rich learning resources
14	The Professor Saripalli is clearly a subject matter expert in distributed systems and during class he would do a good job of trying to explain the concepts in easier to understand ways. In addition, he clearly is open to feedback and tries to incorporate it, as he had us fill out a survey halfway through the semester and I could see adjustments in the second half of class. That is much appreciated. In addition, the cumulative nature of the projects were quite effective for my understanding. I liked how they started pretty basic and we continued to build on it little by little to create a more robust solution by the end of project 4. Those were great and the highlight of the class for me. Keep those, and keep emphasizing them as a major part of the grade.
15	Great course Provide flexibility in deadlines
16	He is knowledgeable and experienced in this field, so has so much to share and discuss in class, not limited to the textbooks.
17	I think the knowledge of the instructor for his course is clear and taught clearly and concisely, also lots of secondary resources were provided for learning on top of the text book and all of it was really helpful in finding the specific information for the homework and exams and projects.
18	The scenarios and problems designed are very close to actual work.
19	A lot of studying materials
20	A good listener and has sound knowledge about the course.
21	- The instructor came prepared for the course. - The projects helped me learn and implement the course materials in real-life scenarios.
22	The professor is very knowledgeable about the subject and dedicated a lot of time in teaching and helping students.
23	Passion for the material
24	He seems kind. He also adapted to feedback during the course and released more info about assignments.
25	We have a sufficient number of Teaching Assistants assisting us.
26	Instructor is very knowledgeable.
27	the book and materials are really useful and can learn a lot from that.
28	Got to learn a lot and this course helps in interviews for software industry
29	The Professor was very responsive and quick to correct any misunderstandings.

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

1	The project descriptions were overly simplistic and vague, in my opinion. A TA told me that the instructor was reluctant to divulge too much information because (paraphrasing) it would reveal too many answers and he wanted us to have to figure it out for ourselves. Upon grading my midterm, I got 2-3 sentences saying that my answers were overall inadequate. There were no other explanations of what points were taken off and why. The rubric for the midterm were completely secret. It was explained that the professor could not publish answers, because future students could cheat. Other professors often give a study sheet before a large exam. There was nothing like that for this exam. I wrote answers for the entire 3 hour test time and was given one of the lowest grades in the class for the exam, and I was simply told an arbitrary judgement that my answers were simply inadequate.
2	Professor took some time to review and teach the OS knowledge on Day 1 which was super helpful. Whiteboard drawings and examples in real life would make complex topics more accessible for students.
3	BAD TEACHER AND BAD TAS
4	A good portion of the course material is outdated as per my communication with people working in the CS field. I hope the course could be more realistic and updated as the knowledge as well as its application are very much applicable
5	Condense the content a bit more. There is a lot of reading stuff for a particular topic. Instead, if the material was condensed and limited, enough to cover everything related to that topic, it would be very beneficial for understanding and make readings much less daunting.
6	Have slides. Be more organized. The Canvas page is crazy. I appreciate all the resources but it's just super overwhelming. Theres like 10 pdfs to read every week a whole section of the textbook (~80-100 pages). Then theres 4 long *** intensive home works, 4 projects, 3 quizzes, a midterm and a final. It's too much. The final and midterm format is horrible too. He will release the midterm at a set time and date and we have 3 hrs to finish it and upload our answers back onto canvas. It takes some time just to download, and upload, not to mention all the drawing, charts, calculations, diagrams, and labeling involved electronically. It feels more like a timed race than fairly evaluating what I've learned (or taught myself) throughout the course.
7	Better rubrics and better grading
8	To make the course better, the professor should make slides or notes. This helps students understand better during class. Also, the professor should focus on the most important ideas. Additionally, emphasizing essential concepts ensures that students grasp the key ideas without feeling overwhelmed.
9	Less theoretical
10	conclude the outline in the very beginning and organize the materials according to the topic of each lesson.
11	Simplify supplementary course materials if possible.
12	Make requirements clearer on assignments to reduce the amount of Piazza questions needed to understand expectations
13	The textbook is hard to follow due to the obscure texts and too broad knowledge points. It would be better to have summary materials and we can follow and dive into specific parts of the textbook.
14	It would be better if the homework wasn't so difficult
15	1. Make the course less reliant on textbook reading. The professor provides a lot of extra material outside of the textbook, and as I got later in the course I found those more helpful than reading the textbook. The book is written in a very academic style, which I've always found tough to read and comprehend. Especially where the material is brand new to students, sometimes the more conversational style reading is an easier entry point than the textbook. Potentially link more videos about the concepts too - there's a lot of good YouTube material that helps explain this in simpler terms and with videos (plus my guess is this will continue to be a more familiar way for newer generations to learn vs the traditional textbook reading). 2. More pre-built visuals for class. I mentioned this in the mid-semester survey but sometimes the more complete visuals when presenting the material are helpful. An example would be in the 12-paxos-slides.pdf document that the professor provided, slides 13-31 were great visuals for helping me understand how Paxos work. 3. I'm not sure how possible this is, and the professor obviously has more experience in this space than me, but maybe re-consider if all the concepts we touched on in class are necessary for our learning. In my mind the goal of the class is to be able to implement a basic distributed system and understand it well enough to land a job on a team implementing a larger, real-world system. Are concepts such as the different types of group communication or the different types of APIs necessary for this? Or maybe push that material towards the end of the semester and ramp us up on the concepts to build the system faster. 4. This could be my preference and again a product of my inexperience, but more focus on application of the concepts. For example, in homework 1 we had a programming question but did not have that in 2 or 3. If we could implement more questions where there is a code component, it could help drive the learnings home. Maybe it's about building a method that performs some function or something like that. I imagine it's hard to create questions in this space that could fit into one or two questions of a homework, but if it's possible it could be beneficial to students.
16	It would be great to have notes for each chapter with just the important concepts .
17	Please make lectures more elaborative and explanatory Make course organization better. It is very random.
18	The grading criteria for both assignment and tests is not transparent. For the midterm exam I don't even know what score I got for each question. I had to attend professor's office hour to ask about that and did not really have a clear idea. And my grades are even negotiable over the office hour. The graders are always expecting something not asked implicitly in the question, and this takes me a lot of extra effort to first figure out what would get me more credits to this question.
19	I think maybe add some more low effort group assignments (maybe not like just a final project, but maybe small group assignments that have low overall grade impact that students can do together to get to know others in class)
20	If the route of the pre-class reading materials is clearer or more streamlined, it will help me learn more efficiently and with less effort.
21	Please make the course more organized
22	I think there aren't any changes needed as the course is structured very well.
23	- The homework usually doesn't help and just adds to the course load. - I would much prefer more projects in a modular fashion instead of homework.
24	have a better schedule for each week. Too many chapter are learnt in the last few weeks. Extra zoom time project.
25	Reduce lecture time and homework of subjects such as RPC, IPC, middleware, RMI (COBRA). Increase those of clock, consistency, election, failure, etc.
26	Must be more organized. There are too many PDFs and files, and expectations/timelines are not well established.

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

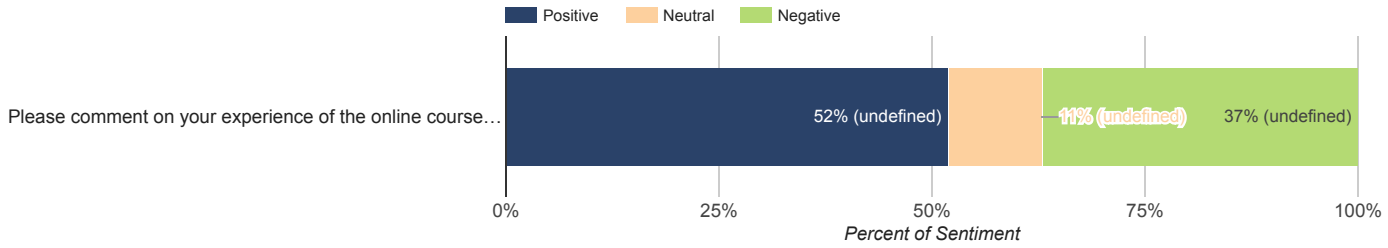
27	Better organization - To complete a single homework assignment, you would need to look at the list of questions on the hw, then find the question listed in the textbook, then check a separate and only vaguely-related rubric for each question. Take the time to put this info in one place, and make the rubric consistent with the question - On the inconsistency -- assignments initially were graded on criteria not mentioned in the question, like points off for not drawing a diagram when none was requested. - Assignments were clearly copied and pasted from another institution, and between assignments. This meant there were random references to parts of the assignment that were inconsistent, and it was a lot of work to just figure out what was actually required (many questions from many students). You have TAs--have one of them proofread your materials. - Faster turnaround on feedback. Each project built on the last, and they would take 10 to 20 hours. But we wouldn't get a grade back on the previous one until the day the next was due. In one case several students asked for more time for this reason well in advance, and it wasn't granted until 5 minutes before the assignment was due (midnight for east coasters). - Better feedback -- on some assignments, including multiple choice quizzes, we couldn't see our results or expected correct answers on exam questions, so the prof could reuse them. Anyone who wants to cheat by passing on exam questions can do so anyway-- it's ridiculous to let your laziness get in the way of students' learning. Better, more up-to-date materials - The textbook is from 2011, and it shows. There are newer ways to solve many of these problems, and we're not learning about them (like Raft vs Paxos). It also just sucks -- it makes moderately complicated concepts incredibly hard to understand with lengthy explanations in overly-academic language. These are real problems that non-academics work with all the time -- usually I just read blogs to learn the stuff rather than the book. Better teaching - As mentioned above, online lectures are a bad format. Not sure if you can make them really compelling, but you can do better than this. Taking up class time to flip through the book and list things that we should or shouldn't study is not a good use of class time. Do it before and send it to the class in a written format. Prepare good slides, or even pre-make videos with better production. As an example, check out: https://northeastern.instructuremedia.com/embed/f62d6286-a1c4-4495-b6d9-c3aace468df9 https://www.khoury.northeastern.edu/home/aloupis/algo/5800/resources.html#big0
28	maybe narrow down the reading materials
29	preparing some slides with key points for weekly class; reducing some random PDF readings; the content and formats of mid/final exam are pretty similar as homework. Instead of making students doing a lot in fixed three hours, should focus on helping students be succeed. The fixed time 15mins for 10 questions and formats of quiz are very crazy, tbh, I did not learn anything from quiz, as its crazy limited time and zero feedback.
30	it's better if we can have more clear project requirement. always need to check with different TAs several times to clarify the real requirement and TAs are not align in terms of grading standard sometimes.
31	COurse was really good in my opinion
32	It would have been useful if course materials were prepared further ahead of time to reduce any confusion.

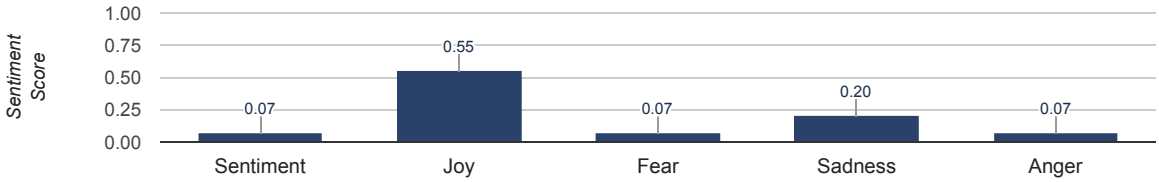
Q: Please expand on the instructor's strengths and/or areas for improvement in facilitating inclusive learning.

1	N/A
2	Very satisfied with the professor, conscientious and very nice.
3	Professor is very knowledgeble. His encouragement for me has been the key motivator for me to delve deeper into this field.
4	I just want to emphasize that part of my suggestions stem from the fact that my time was limited this semester and I couldn't spend the extra time reading and re-reading the same 5 pages of the text book to understand it. However, I'm guessing I'm not alone in being the only student taking this class while working full time or having other commitments (including the professor), and we all have to find the most efficient way to get done what we need to. I tend to find, for myself, textbook reading to be inefficient for learning the concepts from scratch. As such, my approach tended to be finding resources that explained concepts in more conversational terms and then going back to the textbook to fill in the details once I had a more general picture of what was going on.
5	BAD TEACHER AND BAD TAS
6	I wish the textbook could be more updated and fruitful. It is very dry and theoretical and difficult to read. Also, gradings from TAs can definately improve both speed-wise and quality-wise.
7	I think perhaps more class engagement, or more clear assignment rubrics.
8	My personal opinion is it will be great to provide skeletons or maybe sample codes for projects
9	- The instructor could be available more. - The instructor used to answer questions in the virtual classroom
10	I think the professor is a very smart guy. These topics probably come naturally to him so when he's explaining it he's brushing over and simplifying some parts. However it was my first time learning any of this stuff and the format of his lectures just do not help me understand. Also, the george colouris textbook is a great resource but sooooo freaking long. He will cover a chapter in 1 hr but it will take me 3-5 hours to read it. And the depth of information goes soo much further in the textbook than his explanations in lecture. I also have adhd and purely reading all of these texts and staring at a textbook during lectures is really really really really really not effective for me. I know some classmates like having all these resources to read through but it's just really difficult for me to get through all of it. The professor is actually good at explaining things in an understandable way. It's just he doesn't always cover topics to depth and mostly just gives us an intro on the topic and tells us to go study the text rather than provide a full explanation. Professor is also a very good person. He seems to care about his students and is always helpful and responsive when I reach out to him for support. I feel my review has been rather harsh but that's because this course has been a little frustrating. It's not a direct reflection on the professor's character or teaching ability. But there are many improvements I feel that could have been made in the course to help less experienced students (like me) learn better. Thank you for all your work Professor, I hope you dont take offense to this review.
11	Good assigments
12	The professor demonstrates a commendable level of expertise and knowledge in the subject matter, which greatly enriches the learning experience for students. However, it is evident that there is a need for improvement in the organization and prioritization of course materials. While the professor effectively conveys complex concepts and demonstrates a deep understanding of the subject matter, the lack of a structured approach to presenting materials can sometimes hinder student comprehension. The course content, while comprehensive, could benefit from a clearer framework that aids students in identifying and focusing on key concepts.
13	The assignments and project settings are good for students to gain a better understanding of the materials." of the materials.
14	Prof. Prasad incorporates diagrams and short videos to help diverse learners grasp information, uses relatable scenarios to make abstract concepts more accessible to a wider range of learners, and fosters a respectful and supportive learning environment.
15	See above responses
16	N/A

Questions to Assess Students' Online Experience (27 comments)

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





1	The project descriptions and instructions for submitting the assignments, at least the first couple of assignments, were spread out over 3 different locations/documents. To fulfill all the requirements, you had to look and search over the entire course website to find all the information you needed. It makes me wonder if this was deliberate. There is a running theme in this course of the issue of transparency. I need the expectations for assignments clearly defined and all in the same place. I've got enough to worry about without feeling like I'm constantly being tricked by the professor. ★★★★☆
2	The professor recorded the videos so they are accessible to students in a flexible way. ★★★☆☆
3	BAD TEACHER AND BAD TAS ★☆☆☆☆
4	Online course is hard to teach and to learn from ★★★★☆
5	Learnt a lot from this course ★★★★★
6	Horrible. Unorganized, confusing, stressful. Can't find anything on Canvas, it's full of random stuff. Quizzes will open for 1 hour only with 1 prior announcement. If you miss that announcement, good luck, you'll miss the quiz. No syllabus to be found. ★☆☆☆☆
7	While I appreciate the effort made to provide comprehensive resources online, I have observed that the materials lack a cohesive structure, making it challenging for students to navigate effectively. The distributed chapters from the textbook and supplementary materials, without a condensed summary or prioritized content, require extensive reading, covering approximately 80-90% of the textbook. This extensive coverage may not align with the time constraints of the course. I acknowledge the professor's expertise in the subject matter, yet I believe the learning experience could be greatly enhanced with clearer organization and prioritization of materials. A structured outline or condensed slides highlighting key points from the readings could facilitate comprehension and enable students to focus on essential concepts. I believe it will contribute to the continuous improvement of the course and benefit future students. ★★★★★
8	the syllabus is not clear and it is hard for students to reading plenty of materials themselves. ★☆☆☆☆
9	I found the online course environment to be very flexible and convenient. I was able to learn at my own pace and schedule, which was a huge advantage for me. The Piazza was also a great way to connect with other students and get prompt help on the course material. ★★★★★
10	The only issues I had with the course was some of the organization on Canvas (ex. homeworks were PDFs in the course modules that were not connected to the Canvas assignments) and the lack of clarification on some assignments (things like lack of rubric), but all of this was solved with Piazza, and none of it was particularly problematic. ★☆☆☆☆
11	The piazza provides a good environment to communicate with classmates and receive feedback from instructors. Course materials can be organized better as sometimes I can't follow the key points of each module. ★★★★☆
12	Very help for my learning ★★★★★
13	The professor held virtual lectures every week and made an effort to get students to engage during this process. ★★★☆☆
14	Course is not organized well. ★☆☆☆☆
15	I think for an online course, the workload outside each lecture is a little bit more than expected. With the expectation of finishing and understanding all the readings, the lectures are sometimes hard to follow. ★★★★☆
16	I think the class was organized in a coherent manner, I would say that just for assignments that the assignment descriptions and documents should be tied to the assignment in the assignment section tag and not separately in the modules. It was just a little counter intuitive to find, but a minor thing. ★★☆☆☆
17	good but much more course work ★★★★★
18	The online course environment is good ★★★★★
19	Grading is slow, No specific rubrics for theory assignments. Projects are good but, as I mentioned feedback are slow so no helpful input over previous project. ★☆☆☆☆
20	The course has been a good experience overall. I would have liked it if the assignments and modules were a little more organized. There were assignment instructions in multiple documents. ★★★★★
21	The material are a little messy. For one module, around 10 paper is provide. And each week the study list is not update according to the current teaching progress but use the previous semester's notes. ★☆☆☆☆
22	A very strong background in Java is required ★★★☆☆
23	Online lectures are a bad format, and this is not the professor's fault. However, he did not use his lecture time well, and the lectures were poorly organized and uninteresting. ★☆☆☆☆
24	It was good. ★★★★★

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

25	Online course environment are fairly good except a lot of dry and unorganized reading materials. ★★★★☆
26	good experience of this online course. ★★★★★
27	The listing for this course did not include a timeslot, suggesting that it was therefore an asynchronous course. Having a lecture time scheduled was therefore a surprise, and I have not been able to attend many of the lectures. I would also say that for online classes of this format exams should not be held during lecture times, as students are across a wide variety of timezones and may be at a disadvantage depending. ★☆☆☆☆

Student Self-Assessment of their Effort to Achieve Course Outcomes (27 comments)

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

1	Honestly, I wasn't crazy about the subject matter of this course from the start. Maybe I had a bad attitude about it, and that's my fault, but I'm just not a "Systems" guy. I also have a problem memorizing a huge amount of abstract concepts from a textbook and spitting them out on a test. I tried to really put in the time and really shoot for near-perfect scores on my homework and projects to bring up my grade, but I should have tried to attend office hours and raise questions. If I had forced myself to try to take a real interest in the class, I might have learned more.
2	With no pre-knowledge of OS or networking, this course is very hard for me so I need much more time to delve into the complex topics.
3	BAD TEACHER AND BAD TAS
4	Participated more in class
5	Watch the videos on time without watching all at once
6	Taken a different section.
7	I don't know what would have made the course better from my side.
8	N/A
9	list the outline or draw the mindmap.
10	I could have spent more time early on solidifying my grasp of Java socket programming, Network protocols, and operating system principles. Also, reflect on areas where I struggle the most.
11	Not procrastinate as much
12	N/A
13	talk with professor more often
14	I had a ton of stuff going on in my life outside of school between work and personal milestones and at times I struggled to keep up with the readings. I could have done a better job with time management and trying to go to office hours for help.
15	Spend more time looking at real world application and how to go about it.
16	- Need better course organization - Need for better lecture explanation - Project descriptions are very vague and confusing. TAs provide conflicting information. Last minute changes are needed. Disastrous often times.
17	Develop more skilled reading techniques.
18	I think I could have paired a better work schedule for myself and asked for specific assignment requirements, rubrics, and exam structure before hand.
19	If I could understand the ideas of the course more broadly or complete the pre-class reading earlier, it would help me master the knowledge better.
20	Read more reading materials provided.
21	Spent more time going through the materials
22	Nothing
23	less reading. focus on the most important part.
24	I don't think attending more classes would have helped -- they were bad. I could have done more of the readings and followed along with the materials more.
25	I spent more than 30 hours, sometimes 50 hours on this course so did my best already.
26	i can perform better if I know that this course is a really time-consuming class and required at least 20-30 hours per week, especially for non CS background students. It did can learn a lot from professor and TAs. It's worth it.
27	Should have read the given book also, along with the modules provided.