

CSS 342 C
Data Structures, Algorithms, And Discrete Mathematics I
Course type: Online
Taught by: Yusuf Pisan
Instructor Evaluated: Yusuf Pisan-Other

Evaluation Delivery: Online
Evaluation Form: I
Responses: 23/35 (66% high)

Overall Summative Rating represents the combined responses of students to the four global summative items and is presented to provide an overall index of the class's quality:

Median 3.3 (0=lowest; 5=highest)	College Decile 1 (0=lowest; 9=highest)
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Challenge and Engagement Index (CEI) combines student responses to several IASystem items relating to how academically challenging students found the course to be and how engaged they were:

CEI: 5.6 (1=lowest; 7=highest)
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SUMMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	College
The distance learning course as a whole was:	23	9%	26%	35%	13%	13%	4%	3.1	1	1
The course content was:	23	13%	35%	30%	13%	4%	4%	3.4	1	1
The instructor's contribution to the course was:	23	26%	39%	9%	22%		4%	3.9	2	2
The effectiveness of the distance learning format was:	23	9%	22%	26%	26%	13%	4%	2.8	0	0

STUDENT ENGAGEMENT

	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median	DECILE RANK Inst	College
Relative to other college courses you have taken:											
Do you expect your grade in this course to be:	22	14%	18%	9%	23%	18%	9%	9%	4.1	0	1
The intellectual challenge presented was:	22	32%	23%	23%	14%	5%	5%		5.7	5	5
The amount of effort you put into this course was:	22	36%	36%	9%	9%	9%			6.1	8	7
The amount of effort to succeed in this course was:	22	36%	32%	14%	14%	5%			6.1	7	7
Your involvement in course (doing assignments, attending classes, etc.) was:	21	24%	38%	19%	19%				5.8	4	4

On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?

Class median: 12.8 Hours per credit: 2.6 (N=22)

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
		5%	5%	9%	23%	14%	9%	14%	14%		9%

From the total average hours above, how many do you consider were valuable in advancing your education?

Class median: 8.5 Hours per credit: 1.7 (N=22)

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
	9%	9%	23%	18%	5%	14%	5%	5%	9%		5%

What grade do you expect in this course?

Class median: 3.3 (N=22)

A (3.9-4.0)	A- (3.5-3.8)	B+ (3.2-3.4)	B (2.9-3.1)	B- (2.5-2.8)	C+ (2.2-2.4)	C (1.9-2.1)	C- (1.5-1.8)	D+ (1.2-1.4)	D (0.9-1.1)	D- (0.7-0.8)	E (0.0)	Pass	Credit	No Credit
18%	27%	5%	14%	9%	5%	18%							5%	

In regard to your academic program, is this course best described as:

(N=22)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
73%	23%				5%

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK	
									Inst	College
The helpfulness of the distance learning staff overall was:	23	4%	35%	52%	4%	4%		3.3	0	
Student confidence in instructor's knowledge was:	23	39%	39%	17%	4%			4.2	2	2
Timeliness of instructor response to assignments was:	23	35%	30%	22%	13%			4.0	3	3
Quality/helpfulness of instructor feedback was:	23	30%	22%	22%	17%	4%	4%	3.6	1	2
Tailoring of instruction to varying student skill levels was:	23	17%	22%	17%	22%	9%	13%	2.9	0	
Clarity of course objectives was:	23	30%	17%	26%	9%	13%	4%	3.4	1	1
The organization of the study guide was:	23	26%	22%	35%		13%	4%	3.4	0	
Content of the study guide was:	23	22%	22%	43%		13%		3.4	0	
Relevance of textbook for self-study was:	23	22%	22%	35%	4%	9%	9%	3.3	0	
Usefulness of reading assignments in understanding course content was:	23	13%	26%	22%	30%	4%	4%	3.0	0	1
Usefulness of written assignments in understanding course content was:	23	22%	30%	35%	4%	9%		3.6	2	2
Usefulness of video media in understanding course content was:	23	13%	26%	35%	9%	13%	4%	3.2	0	
Usefulness of online resources in understanding course content was:	22	27%	18%	36%	14%	5%		3.4	1	1
Usefulness of audio media in understanding course content was:	22	14%	18%	41%	14%	9%	5%	3.1	0	
Relevance and usefulness of course content were:	23	22%	43%	17%	13%	4%		3.9	2	2
Evaluative and grading techniques (tests, papers, projects, etc.) were:	23	22%	30%	26%	9%	9%	4%	3.6	1	2
Reasonableness of assigned work was:	23	30%	22%	26%	9%	9%	4%	3.6	1	2
Clarity of student responsibilities and requirements was:	23	26%	35%	26%	4%	9%		3.8	2	2

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STANDARD OPEN-ENDED QUESTIONS

Was this class intellectually stimulating? Did it stretch your thinking? Why or why not?

1. Yes. It was very stimulating and difficult. It did stretch my thinking. I had previously done good in my programming related classes, but this has been a challenge. The programming projects were especially stimulating. While they were very difficult and time consuming, I felt I learned a lot from them. I only wish that they would be worth a larger percent of our class grade.
2. Yes but I feel like I learned more from the textbook rather than from lectures.
3. It felt like fighting a losing battle because for some reason instead of continuing in Java we switched to C++. Professor
4. yes it was stimulating because i learned c++ for the first time
5. It's super super stretch thinking because the class content itself is hard, requires a lot of brainstorming
6. Yes. This class requires much more intelligent. I mean no one will pass this class, if you not smart.
7. Yes, new content
8. This class was very stimulating and it made me think. I'm not very strong in applicable coding, I am stronger with frameworks and design, so I had to really learn more about coding in another language and working with different programs.
9. Yes, the projects were good and we were occasionally given problem solving questions.
10. Yes it was intellectually stimulating and stretched my thinking. Since I was not really familiar with a lot of the concepts in the new language I had to learn it on my own and go out on the internet. It was intellectually stimulating and probably how the workforce is (they just give you a problem and you have to figure it out).
11. It's a typical programming class, but with some other things. It was more stimulating as any other programming class, because we had to learn about truth tables and the such.
13. yes. But it's hard. Sometimes I have no clue. And tutoring doesn't help much
14. Sometimes, but the stress covered up most of that.
16. Th class was mentally stimulating and it stretched my thinking a lot. There were a lot of problem solving areas that were challenging and would probably be less challenging if there was more practices.
17. Yes, definitely to both questions. I'd say that this is primarily because the projects were interesting and unique, and the problems covered in class were fun, but challenging.
18. I have already learned a significant portion of the course prior to taking it, so it was not challenging for me.
19. Yes, the leetcode problems are interesting.

What aspects of this class contributed most to your learning?

1. I liked how the lectures were recorded and posted, and how the slides were posted. However, I wish that the readings assigned were more closely tied with material covered that week.
2. Textbook, projects
3. Not even sure because I don't feel like I've learned much. Probably discord where students can help each other outside class.
4. using leetcode and replit for excercises were helpful
5. Amazing instructor and headache projects
6. Leetcode.
7. C++
8. What contributed most to my learning was actually the professor's willingness to help and answer every question authentically. The material has been extremely difficult for me, so the willingness and availability of the professor, and the discord server, was very helpful.
9. Attending lectures because it was relevant to finals.
10. I think the aspect of the class that contributed most to my learning was the projects. They required a lot of work, but they gave us a a sufficient amount of time to complete it. With a lot of time I was able to try multiple things and understand the program.
11. The projects contributed to the programming aspects of the class. The lectures contributed to the non-programming aspects, such as the proofs and truth tables.
13. Algorithm and data structure
14. The lectures being recorded and the lecture notes being uploaded.
16. The projects contributed to the most of my learning. Lectures helped as well.

17. I would say that the projects contributed the most to my learning since they required me to both apply concepts covered in the text and class, and also to do some of my own research to solve problems.

18. I enjoyed the introduction to programming in c++ and getting to know how powerful the language is.

19. Project

What aspects of this class detracted from your learning?

1. The fact that it was online. Also the lack of examples and actual programming we did. Class was mostly lecture based. I wish we had done more programming examples (either as a class, or have prof. walk us through how to do problems)

2. in class exercises, people often time wouldn't talk and it felt like a waste of time.

3. This class continues with deepening understanding of computer algorithms EXCEPT IT WAS IN A DIFFERENT LANGUAGE. It is EXTREMELY hard to switch from Java to C++ in the middle of complex algorithm learning. It is VERY distracting to try to figure out C++ subtleties while trying to learn actual algorithm. One assignment (Skip List) was so difficult that I spent a whole week every day in QSC and no one could help me. I ended up asking my roommate for help; it's very demotivating when school resources aren't equipped to help.

4. I do not think the group project is very helpful to my learning. It feels much more confusing and complicated than doing the same assignment without a group.

5. N/A

6. leetcode

7. Lectures sometimes

8. What detracted from my learning was the weight of the assignments to exams and the correlation to class content. It felt as though the class content was not extremely related to the exams, at least the midterm, and the expectations of what needed to be done in the time given had completely thrown me off.

9. n/a

10. The time limit for everything. I don't work well under pressure or with limited time so during group work in class (when we have 5-10 minutes to solve something) I feel very pressured and can't figure it out. Same as the midterm.

11. None.

13. online learning

14. The breakout rooms.

16. Some reading seemed a bit unfocused or unclear.

17. I realize that the instructor may not have much control over this, but I find it difficult to stay focused in a class as long as this one (i.e. > 1 hr) when a lot of the time is spent listening. Having the break-out sessions to solve problems is useful, but I think it is only useful to the extent that all of the students in the group understand the problem. I sometimes felt that other students were better at solving problems quickly, but often struggled to clearly explain the problem or their solution.

What suggestions do you have for improving the class?

1. One suggestion is to provide better resources for exam study. This could be a list of topics. Also have the exams better reflect material covered in class. The final for example, based on the practice's it seems like it is very much focused on Big O, Big Theta, and Big Omega, as well as the logic-complexities. Both these are things that we did not spend too much time doing in class. We just briefly went over them. I found the programming assignments to be very helpful, while they were difficult and time consuming, I did feel like I learned a lot by the time I had finished it. Another suggestion is to have the exams (midterm and final) be on canvas, so we can go question to question and type answers into boxes. them being a separate word doc makes us waste time with formatting, saving, and uploading. It would also be nice if exams were graded on a curve; the midterm for example, the average was a C minus, it would have been nice to grade on a curve.

2. Have lecture be different than just doing what was in the readings.

3. I know that some people are doing well but they code outside class for their free time projects. Perhaps this class is good for them, but not for someone who relies on the professor to teach us. I talked to multiple people who have CS majors from other good universities who work as developers at major corporations and NONE had to switch from one language to another with no warning. I would suggest spending some time helping students with transition from Java to C++. Or at least put in the course description because it does not mention it at all and I felt wildly unprepared.

4. Doing more exercises, listing the student grader's contact information in the syllabus

5. N/A

6. No breakroom will be better because most of us are learner, and don't have actual answer in a 5-minunes question. We just need hands up, if someone know how to do it.

7. Not sure

8. I think what would help would be doing exercises in class that are similar to what will be on the exams, as well as making them relate to real world examples. I find that sometimes in my classes I get lost as to how this related to the big picture until I talk with family or friends (who are in the industry). Another suggestion would be for the grading of the exams. Given the expectations and time, I think allowing pseudocode or splitting the exam(s) for half pseudocode and half actual code could allow for more thinking and time management for the exams.

9. The midterm was a huge time crunch.

10. Not specifically for this class, but I feel like it would be helpful if had a class separate for learning C++ before we learn all these data structures. Trying to keep up with the new syntax while trying to learn new things was just too much and made the tests extremely hard because I had to constantly look up the documentation for simple things. I logically knew what to do, but didn't know how to type it in C++ and that really made me feel like I was lacking when it's just a problem with the language.

11. Upload a key for the practice midterm and final.

12. More leetcode exercises and preparation for the midterm.
13. More interactive and break problems into smaller pieces
14. Bring the class into the content a little smoother during the first week, just keep in mind the gap between skill levels.
15. more leetcode problems and solutions
16. More clear, documented explanations would be nice. It is hard combing through the zoom recordings, and there is more being talked about during lectures than what is documented on the slides. Perhaps some more helpful links to help supplement learning concepts. Instead of long readings though, supplements that are more concise and visual.
17. For some of the concepts, it might help if they were presented in a format that forces the students to be constantly active. Something to consider is having the class structured so that students follow along with the instructor as certain concepts are demonstrated. For example, students could fork some starter code at the beginning of class from repl.it, then add to it as the class progresses.
18. The content organization could be better. Sometimes, we jumped back and forth between topics. One example to illustrate: big O notation (week 7) falls under logic complexity (week 14), so they could be combined. Also, I feel the discrete math part this course should be another course of its own, as it had little to no correlation to the other topics in the class.
19. Be more clear about what test cases the project will run on and what their result should be.

IASystem Course Summary Reports summarize student ratings of a particular course or combination of courses. They provide a rich perspective on student views by reporting responses in three ways: as frequency distributions, average ratings, and either comparative or adjusted ratings. Remember in interpreting results that it is important to keep in mind the number of students who evaluated the course relative to the total course enrollment as shown on the upper right-hand corner of the report.

Frequency distributions. The percentage of students who selected each response choice is displayed for each item. Percentages are based on the number of students who answered the respective item rather than the number of students who evaluated the course because individual item response is optional.

Median ratings. IASystem reports average ratings in the form of item medians. Although means are a more familiar type of average than medians, they are less accurate in summarizing student ratings. This is because ratings distributions tend to be strongly skewed. That is, most of the ratings are at the high end of the scale and trail off to the low end.

The median indicates the point on the rating scale at which half of the students selected higher ratings, and half selected lower. Medians are computed to one decimal place by interpolation.¹ In general, higher medians reflect more favorable ratings. To interpret median ratings, compare the value of each median to the respective response scale: *Very Poor, Poor, Fair, Good, Very Good, Excellent (0-5); Never/None/Much Lower, About Half/Average, Always/Great/Much Higher (1-7); Slight, Moderate, Considerable, Extensive (1-4)*.

Comparative ratings. IASystem provides a normative comparison for each item by reporting the decile rank of the item median. Decile ranks compare the median rating of a particular item to ratings of the same item over the previous two academic years in all classes at the institution and within the college, school, or division. Decile ranks are shown only for items with sufficient normative data.

Decile ranks range from 0 (lowest) to 9 (highest). For all items, higher medians yield higher decile ranks. The 0 decile rank indicates an item median in the lowest 10% of all scores. A decile rank of 1 indicates a median above the bottom 10% and below the top 80%. A decile rank of 9 indicates a median in the top 10% of all scores. Because average ratings tend to be high, a rating of "good" or "average" may have a low decile rank.

Adjusted ratings. Research has shown that student ratings may be somewhat influenced by factors such as class size, expected grade, and reason for enrollment. To correct for this, IASystem reports **adjusted medians** for summative items (items #1-4 and their combined global rating) based on regression analyses of ratings over the previous two academic years in all classes at the respective institution. If large classes at the institution tend to be rated lower than small classes, for example, the adjusted medians for large classes will be slightly higher than their unadjusted medians.

When adjusted ratings are displayed for summative items, **relative rank** is displayed for the more specific (formative) items. Rankings serve as a guide in directing instructional improvement efforts. The top ranked items (1, 2, 3, etc.) represent areas that are going well from a student perspective; whereas the bottom ranked items (18, 17, 16, etc.) represent areas in which the instructor may want to make changes. Relative ranks are computed by first standardizing each item (subtracting the overall institutional average from the item rating for the particular course, then dividing by the standard deviation of the ratings across all courses) and then ranking those standardized scores.

Challenge and Engagement Index (CEI). Several IASystem items ask students how academically challenging they found the course to be. IASystem calculates the average of these items and reports them as a single index. *The Challenge and Engagement Index (CEI)* correlates only modestly with the global rating (median of items 1-4).

Optional Items. Student responses to instructor-supplied items are summarized at the end of the evaluation report. Median responses should be interpreted in light of the specific item text and response scale used (response values 1-6 on paper evaluation forms).

¹ For the specific method, see, for example, Guilford, J.P. (1965). *Fundamental statistics in psychology and education*. New York: McGraw-Hill Book Company, pp. 49-53.