IASystem
The Course Evaluation Standard

CSS 343 A
Data Structures, Algorithms, And Discrete Mathematics II
Course type: Face-to-Face

Taught by: Yusuf Pisan
Instructor Evaluated: Yusuf Pisan-Assoc T Prof

Evaluation Delivery: Online
Evaluation Form: A
Responses: 25/32 (78% very 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	College Decile
4.2	**5**
(0=lowest; 5=highest)	(0=lowest; 9=highest)

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: 5.7
(1=lowest; 7=highest)

SUMMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	DECILE RANK College
The course as a whole was:	25	28%	52%	16%	4%			4.1	4	5
The course content was:	25	40%	48%	12%				4.3	5	6
The instructor's contribution to the course was:	25	40%	48%	4%	4%	4%		4.3	3	4
The instructor's effectiveness in teaching the subject matter was:	25	40%	40%	12%	4%	4%		4.2	4	5

STUDENT ENGAGEMENT

Relative to other college courses you have taken:	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median	DECILE RANK Inst	DECILE RANK College
Do you expect your grade in this course to be:	25	4%	8%	16%	44%	20%	4%	4%	4.0	0	1
The intellectual challenge presented was:	25	36%	36%	20%	8%				6.1	8	8
The amount of effort you put into this course was:	25	36%	32%	20%	12%				6.1	7	7
The amount of effort to succeed in this course was:	25	52%	24%	16%	8%				6.5	9	8
Your involvement in course (doing assignments, attending classes, etc.) was:	25	28%	28%	32%	12%				5.7	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: 10.7 Hours per credit: 2.1 (N=25)

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
		8%	16%	12%	24%	8%	12%	4%	4%	4%	8%

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=25)

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
	8%	28%	12%	4%	24%	16%	4%				4%

What grade do you expect in this course?

Class median: 3.0 (N=25)

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
4%	16%	24%	28%	12%	12%			4%						

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

(N=25)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
72%	24%			4%	

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	DECILE RANK College
Course organization was:	25	48%	44%	8%				4.5	5	7
Clarity of instructor's voice was:	25	40%	32%	20%	4%		4%	4.2	3	4
Explanations by instructor were:	25	40%	44%	12%	4%			4.3	4	5
Instructor's ability to present alternative explanations when needed was:	25	52%	32%	8%	4%	4%		4.5	5	7
Instructor's use of examples and illustrations was:	25	44%	36%	8%	12%			4.3	4	5
Quality of questions or problems raised by the instructor was:	25	48%	36%	12%	4%			4.4	5	6
Student confidence in instructor's knowledge was:	25	56%	40%			4%		4.6	4	5
Instructor's enthusiasm was:	25	48%	36%	12%	4%			4.4	3	4
Encouragement given students to express themselves was:	25	40%	40%	8%	12%			4.2	3	4
Answers to student questions were:	25	44%	40%	12%		4%		4.3	4	5
Availability of extra help when needed was:	25	44%	40%	4%	8%	4%		4.3	3	4
Use of class time was:	25	40%	36%	20%	4%			4.2	4	5
Instructor's interest in whether students learned was:	25	40%	32%	20%	8%			4.2	3	4
Amount you learned in the course was:	25	28%	52%	12%	8%			4.1	3	4
Relevance and usefulness of course content were:	25	52%	36%	4%	8%			4.5	5	6
Evaluative and grading techniques (tests, papers, projects, etc.) were:	25	20%	40%	12%	20%	8%		3.8	2	3
Reasonableness of assigned work was:	25	28%	40%	16%	12%		4%	4.0	2	3
Clarity of student responsibilities and requirements was:	25	40%	48%	8%	4%			4.3	4	5

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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 had a lot of concepts that got me thinking.

3. Yes, the topics covered in this course were puzzling but with the instructor's lectures it was clearly explained and I could use what I learned to apply it to assignments.

4. Yes. I dont like this stuff is why

5. very, forced me to think outside the box, multiple angles to a solution

6. I really enjoyed this class and it was intellectually stimulating. I think the leet code is what made it very interesting.

7. This class was not very intellectually stimulating. I felt like I had to memorize material and follow directions rather than solve problems.

8. Yes, we touched on some interesting topics that called for further exploration

9. Yes it was I learned a lot

10. Yes, the bi-weekly assignments and in-class activities were stimulating.

11. Yes, the class provided alternative ways of thinking and actively engaged us through in-class coding exercises. Many other courses just lecture, in this class we get hands on and work with the material covered during lectures.

12. Yes. I would add one more course on the topic to the program for students to have the ability to learn, practice more

13. yes, learned new concepts each class and had leetcode to help improve learning.

14. There were some sections that I found interesting, but I feel as though the professor could've done a better job when it came to presenting the info. There should be a small overhaul on the presentation slides.

15. Yes, this course was intellectually stimulating and stretched my thinking because it solidified my understanding of topics taught in CSS 342 while also introducing new topics in CSS 343. These new topics include binary trees, max and min heap, graphs, n-ary trees, design patterns, hash tables, polymorphism, languages and grammars, finite state machines, and Turing machines.

16. We learned a lot of new programming concepts and we also learned about theoretical things such as turing machines and various types of algorithms.

17. It was very stimulating, such as our leetcode practices during class. This helped a lot more with my problem solving and critical thinking, especially because of how challenging the problems were.

18. The usage of LeetCode in class was very engaging. New content was introduced both quickly and effectively during lecture - usually taking very little time to thoroughly cover new topics. For me, this meant the pacing of new material felt great.

19. yes, the concepts were interesting and they were taught very well by the professor through the use of visual aids and many practice problems.

What aspects of this class contributed most to your learning?

1. The projects. I'm best when I have time to sit down and analyze a problem.

2. The leetcode problems and lectures.

3. I enjoyed the programming assignments, leading me to be able to find solutions myself and critically think about my approaches to problems.

4. The leetcode

5. Projects

6. I think the aspects that most contributed to my learning was the fact that I had to explain the answers to to the leet code. For example the leet code project, the movies design, collaborating with a partner, and the small leet code problems we did in class all required for me to communicate my thinking which improved my understanding.

7. The instruction was fairly straightforward and easy to understand

8. lectures and examples done in lectures where the most helpful

9. The programming assigments and the in class work.

10. The in-class activities/lectures.

11. Hands on activities as mentioned are great for enhancing learning. Being able to take a note-sheet into the exam reduces test stress and encourages revising for the test more than I normally would.

12. Projects, in-class Leetcode problems

13. the teachers teaching style

14. The homework assignments, but there were parts where the lectures covered my questions.

15. The lectures alongside LeetCode problems were one aspect that contributed most to my learning because they presented the opportunity to apply my understanding as I learned each new topic. The computer programming project assignments were another aspect that contributed most to my learning because they also presented the opportunity to apply my understanding as well as work with software development tools and technologies such as Visual Studio Code, Docker, and GitHub when programming in C++.

16. I liked that we did leetcode almost every class that tackled various data structures and algorithms

17. I would say the leetcode problems and our homework's. They were all difficult, which really helped me understand the concepts taught in class.

18. I am usually not a student that learns well during lectures or class time, however this class was a strong exception. The homework assignments were also usually a great contributor. The option to collaborate on the final assignment was a great opportunity. Both me and my teammate felt the experience taught us many valuable technical and soft skills. However I greatly appreciate the option to work on it solo - group coursework can be a miserable experience in some circumstances. Additionally, I greatly appreciate the professor exposing the class to CoPilot and enabling us to use it. I often feel like classes aren't effectively preparing students to work with these new tools, despite how impactful they are. It was shocking to me how much I learned about C++ by working with CoPilot and examining its suggestions.

19. I think the use of leetcode problems in class to involve students with new concepts such as data structures was really nice. The projects, while they can be frustrating, are closely tied with the material taught in class and the challenge and time given is fair. Recording lectures was also really nice to review old topics and for studying for the exams.

What aspects of this class detracted from your learning?

1. The professor went through his slides a little too fast, it felt like we were blazing through concepts which made it hard for me to fully understand ideas. I also felt the LeetCode exercises weren't helping me very much because I take a long time to knock out code. I know that's not a good trait in the workplace, but I'm still learning and am just unable to do flips when I only recently learned to jump.

3. I find that the lectures covered topics that weren't needed for programming, such as bits, encoding, etc. These ideas were also tested on the midterm which I didn't enjoy since it doesn't reflect your ability to produce code. Also, the final project with the Movies design is not like the other projects, in the way that the instructions feel more vague and the way to structure the program isn't described in detail.

4. Nothing

5. Tests

6. One aspect I think that detracted from my learning was how there were no coding questions in the practice exams.

7. The pace of the class.

8. spaces between assignments was long and and didn't match the difficulty of each assignment

9. Nothing

10. Nothing

11. Cramming the Final Exam and a major project on one week led to poor engagement with both content pieces. There's not enough time to revise and spend ages working on a Homework Assignment. Many of the homework assignments in this class took a long time to sort out, and a lack of "solutions" provided to QSC led even the tutors to be confused at times. The professor when contacted is very insightful however!

12. Theoretical aspects like turing machines

13. none

14. The lectures, because I feel like the professor was bit all over the place when teaching newer material.

15. None.

16. I found the tests for this class to be very difficult as it covered a vast range of concepts but we would only spend 1 day on the concept and move on and almost never come back to it.

17. Nothing much.

18. None. I wish I could provide more constructive feedback but this class was a great experience and I can't think of anything which significantly stunted it.

19. none

What suggestions do you have for improving the class?

1. I would slow down on the slides just a little bit, maybe ask if everyone is ready to move on. I would also let the class know what LeetCode exercise we're working on ahead of time, then proceed the exact same way he does LeetCode exercises at class time (letting us work on it, showing the solution, and taking submissions). This would have helped me absorb the problems a bit better.

3. The professor is great but I found the curriculum to be below my expectations. I would want to focus more on programming rather than ideas presented in lectures.

4. Nothing

5. Reduce the test weight, or don't put it all on 2 tests, do like weekly quizzes or something. I missed one day of class right before the exam (cause I was in the hospital), and when I came back, there were *3* questions (out of like 12) from that day. if there were quizzes, it would be more evident that my knowledge was more distributed

6. I think just adding coding practice to the practice exams. Also giving student a little more time for the Movies project.

7. Nothing.

8. none

9. Nothing

10. Nothing

11. Additional time for a programming assignment seems more than fair if you plan on moving the final exam up a whole week earlier.

12. More work-related skills + 1 additional course on the topic

14. Improve the clarity of the slides.

15. None.

16. Continue teaching and going over problems that were taught previously instead of forgetting about it as the weeks go on.

17. I really wish we had focused some time on doing more discrete math, or in general more conceptual and maybe reduce the leetcode. Also maybe creating assigned homework for reading (quizzes) so that students are more encouraged to read the book.

18. The Graph Project assignment feels out of place among the other assignments. The others all include a unique and interesting element, however Graph Project is simply implementing a number of well known algorithms. I feel that just implementing these algorithms isn't very engaging and doesn't add much to the course if the methodology is already understood from lecture. Perhaps removing some of the algorithms from the assignment and/or adding another element to it could make it more engaging and give the assignment some more valuable takeaways.

19. none

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).

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[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.