IASystem
The Course Evaluation Standard

CSS 342 D
Data Structures, Algorithms, And Discrete Mathematics I
Course type: Face-to-Face

Taught by: Yusuf Pisan
Instructor Evaluated: Yusuf Pisan-Other

Evaluation Delivery: Online
Evaluation Form: A
Responses: 25/35 (71% 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: 5.8
(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:	24	33%	42%	21%	4%			4.1	4	5
The course content was:	24	33%	42%	25%				4.1	4	5
The instructor's contribution to the course was:	24	50%	25%	17%	8%			4.5	4	5
The instructor's effectiveness in teaching the subject matter was:	24	33%	42%	21%	4%			4.1	3	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:	24	12%	21%	25%	21%	12%	4%	4%	4.8	2	4
The intellectual challenge presented was:	24	38%	33%	25%		4%			6.1	8	8
The amount of effort you put into this course was:	24	29%	46%	17%	8%				6.0	7	7
The amount of effort to succeed in this course was:	24	38%	42%	12%	8%				6.2	8	7
Your involvement in course (doing assignments, attending classes, etc.) was:	24	42%	38%	17%	4%				6.3	8	8

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: 10.8 Hours per credit: 2.1 (N=24)

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%		21%	33%	8%	8%	12%			8%

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

Class median: 8.8 Hours per credit: 1.8 (N=24)

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
		25%	8%	25%	8%	12%	4%	4%	4%		8%

What grade do you expect in this course?

Class median: 3.5 (N=23)

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
17%	43%	4%	13%		13%	9%								

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

(N=24)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
75%	25%				

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	College
Course organization was:	24	46%	33%	21%				4.4	5	6
Clarity of instructor's voice was:	24	33%	33%	29%	4%			4.0	2	3
Explanations by instructor were:	24	29%	42%	25%	4%			4.0	3	4
Instructor's ability to present alternative explanations when needed was:	24	29%	46%	21%	4%			4.0	3	4
Instructor's use of examples and illustrations was:	24	33%	33%	29%	4%			4.0	2	3
Quality of questions or problems raised by the instructor was:	24	46%	38%	17%				4.4	5	6
Student confidence in instructor's knowledge was:	24	67%	25%	8%				4.8	6	6
Instructor's enthusiasm was:	24	46%	38%	17%				4.4	3	3
Encouragement given students to express themselves was:	23	43%	35%	22%				4.3	2	4
Answers to student questions were:	24	38%	54%	8%				4.3	4	4
Availability of extra help when needed was:	24	42%	46%	12%				4.3	3	4
Use of class time was:	24	54%	33%	12%				4.6	6	6
Instructor's interest in whether students learned was:	23	35%	39%	22%	4%			4.1	2	3
Amount you learned in the course was:	24	46%	29%	25%				4.4	5	6
Relevance and usefulness of course content were:	24	58%	29%	12%				4.6	6	6
Evaluative and grading techniques (tests, papers, projects, etc.) were:	24	50%	33%	17%				4.5	5	6
Reasonableness of assigned work was:	24	42%	42%	12%	4%			4.3	4	5
Clarity of student responsibilities and requirements was:	24	42%	42%	12%	4%			4.3	4	4

COURSE SUMMARY REPORT
Student Comments

University of Washington, Bothell
Science, Tech, Engr. & Math
Term: Autumn 2021 (COVID)

IASystem
The Course Evaluation Standard

CSS 342 D
Data Structures, Algorithms, And Discrete Mathematics I
Course type: Face-to-Face

Evaluation Delivery: Online
Evaluation Form: A
Responses: 25/35 (71% very high)

Taught by: Yusuf Pisan
Instructor Evaluated: Yusuf Pisan-Other

STANDARD OPEN-ENDED QUESTIONS

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

1. This class was amazing. I enjoyed every part even the parts that I had trouble with (which was a lot of it). I enjoy being challenged and having to work hard for my goals. What I enjoyed most was less of the syntax of coding but the logic and analytics behind the process.

2. Yes, the class was surprisingly very challenging. Almost all the coding problems required a unique and "outside-the-box" thinking to meet the full requirements.

3. Yes it was very intellectually stimulating, the problems presented in class and on tests, as well as the Projects were sufficiently difficult.

4. Yes.

5. Yes. Projects were the right level of difficulty. Doable yet challenging.

6. This class was intellectually stimulating. It was a class with a lot of new concepts and old concepts that had to be "transformed" into something that we could use now.

7. This class was very stimulating, largely everything I would want and expect from the first in major data structure and also course.

9. It is stimulating, because coding is an inherently stimulating activity. It stretched my thinking to take in so many concepts at once in the beginning of the quarter.

10. Class was intellectually stimulating, I appreciate the challenge but also that the projects weren't crazy difficult. Felt like the perfect project difficulty when considering that we're learning c++ for the first time too.

11. It challenges me to be an active thinker and I love it

12. This class was very stimulating. It taught a lot of different algorithm methods and tricks that I didn't know before. I was already familiar with the data structures, but learning how to manipulate them was interesting.

13. The class was intellectually stimulating because of in-class problems that needed to be thought about in unusual ways.

14. yes, It presented hard concepts that will make us think about how to solve a problem

15. Yes, these information is new to me and it was hard to understand when learning it the first time. It required me to look at more then once to understand.

16. Yes, it made me think of solutions and even after finding them I would think about ways to improve them.

17. This class taught me a different way to approach problems. It also taught me many techniques to use on problems.

18. it was, it requires you to stretch your thinking to find solutions for problems

What aspects of this class contributed most to your learning?

1. Reading, Projects, in class exercises, review, and hard work.

2. Definitely the in-class problems. Leading up to the midterm, the class was mostly lecture-based, which made the midterm a lot more challenging, knowing that to get full credit for most problems required special optimizations.

3. Practice problems and Projects help to solidify topics.

4. Leer code practices and in class activities

5. Projects.

6. The lectures, provided powerpoints, and examples.

7. Doing problems in class with professors help, projects

9. The in-class exercises are tedious and frustrating, but valuable to learning.

10. Projects taught me the most by letting me apply what I learned in class.

11. The algorithm helped me a lot

12. The leetcode examples that we went over in class were very helpful to learn new techniques first-hand. I really appreciated going over problems like this because I could understand everything going on.

13. The projects were very helpful, as well as the inclass assignments.

14. The projects

15. When the teacher explains the code.

16. The in class practice activities. Although we learn content, we don't know how to do it until we use it.

17. Professor Pisan having us do leetcode problems or ICA's.

18. the projects were difficult but very useful

What aspects of this class detracted from your learning?

1. Not much distracted I was very focused on learning the material the best I could.

2. There weren't any real distractions.

4. No

5. N/A

6. I wish there were a lot more "walk through" examples, where it was the professor leading us through an example, and then we would go and do it by ourselves.

7. Maybe just that the midterm and final make up so much of the grade.

9. The massive amount of work at the beginning should have been spread a little more, rather than all at once. It was difficult to understand how to use all the of the tools provided and how to set it all up.

10. not much, perhaps the midterm caught me by surprise and was more difficult, but I'm not sure I would call that a detractor in regards to learning?

11. Nothing

12. Some of the binary or hexacode lessons were a little confusing. I wasn't really sure how to apply these concepts to problems and without a proper introduction I felt a little lost, or like I was supposed to already know how binary worked before taking this class. Some reading material before the lesson or something would have helped me engage with the lessons a little more. Also some of the problems that Pisan would go over on his slides that were very intricate would go over my head. The N-Queens or Sudoku code comes to mind for examples of this. Pisan is obviously smart and knows how these work, but his explanations are a little fast sometimes.

14. induction

15. Solving problems without understanding what the problem is.

16. Nothing.

17. I spend so much time study for the exams, but they're still difficult.

18. nothing

What suggestions do you have for improving the class?

1. There were plenty of opportunities for classroom exercises and to balance lecture with application is not easy, but the in-class exercises helped develop a better structure for the progressive level of information being taught.

2. I'd suggest to add runtime calculation and logic propagation exercises to the list of in-class activities, since even though they aren't as important on an exam, they are the most difficult to comprehend without practice.

3. Perhaps suggest leetcode problems to do outside of class as well as the one's done in class.

4. Everything is good.

5. Office hour too limited.

6. Like mentioned above, maybe have a simple "walk through" example for each new concept.

7. Potentially make less of the grade so dependent on the one midterm and final, but not too bad.

8. Maybe decrease the percentage of exams to be a total of 40%, not 50%. Even if you get high scores on the projects and understand the material, the exams basically determine whether or not you fail. I understand that it's meant to mimic technical interviews, but there has to be a better way to emulate this without risking a retake.

9. Spread the course content more evenly.

10. risky to make problems on the midterm connected since if you miss one question, that might mean the other connected questions are wrong too (like using the same linked list for multiple questions). Perhaps a little more time teaching vscode and ssh since I've had to help my fellow classmates with that a few times.

11. Nothing

12. I kind of wish that the homework was a little more consistent. I would appreciate more problems to do at home. I found the bi-weekly projects to be a little simple. I was prepared for them to be difficult based off of other class reviews, but I found most of them could be completed in an afternoon of coding. More take-home shorter exercises would have been really helpful to stay engaged with the class other than through reading. I think this would have helped me internalize some of the techniques we learned in class as well

13. More and/or more varied projects

14. tests are way too hard. it would be better if they are easier.

15. Focus more on explaining different methods to approach solving a problem.

16. Optional practice problems we could do to further improve.

17. I think making the course grade less heavy on exams and more on group projects or projects. There was only 1 group project and it was with 1 other person. Group projects could help us learn to collaborate with other people and will be helpful later on in our career.

18. nothing

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.