IASystem
The Course Evaluation Standard

CSS 430 A
Operating Systems
Course type: Face-to-Face

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

Evaluation Delivery: Online
Evaluation Form: A
Responses: 40/42 (95% 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
4.1	**4**
(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:	39	38%	21%	33%	8%			3.9	3	4
The course content was:	39	38%	26%	26%	10%			4.0	3	5
The instructor's contribution to the course was:	39	49%	21%	23%	8%			4.4	4	5
The instructor's effectiveness in teaching the subject matter was:	39	33%	26%	21%	18%	3%		3.9	2	3

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:	39	8%	23%	21%	21%	23%	3%	3%	4.6	2	3
The intellectual challenge presented was:	39	26%	49%	18%	5%	3%			6.0	8	7
The amount of effort you put into this course was:	39	23%	46%	18%	8%	5%			5.9	6	6
The amount of effort to succeed in this course was:	38	24%	50%	13%	11%	3%			6.0	6	6
Your involvement in course (doing assignments, attending classes, etc.) was:	39	15%	49%	13%	18%	3%	3%		5.8	5	5

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: 12.2 Hours per credit: 2.4 (N=38)

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%	11%	21%	11%	8%	13%	11%	5%		11%	5%

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

Class median: 10.0 Hours per credit: 2 (N=38)

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%	8%	8%	21%	21%	5%	13%	3%	5%	3%	5%

What grade do you expect in this course?

Class median: 3.4 (N=37)

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
22%	27%	19%	19%	5%	8%									

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

(N=38)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
61%	26%			13%	

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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:	39	41%	28%	21%	8%	3%		4.2	4	5
Clarity of instructor's voice was:	39	26%	33%	26%	10%	5%		3.8	1	2
Explanations by instructor were:	39	38%	23%	26%	8%	5%		4.0	3	4
Instructor's ability to present alternative explanations when needed was:	39	46%	18%	21%	8%	8%		4.3	4	5
Instructor's use of examples and illustrations was:	39	46%	21%	21%	13%			4.3	3	5
Quality of questions or problems raised by the instructor was:	39	41%	23%	26%	10%			4.1	3	4
Student confidence in instructor's knowledge was:	38	58%	24%	8%	8%	3%		4.6	4	5
Instructor's enthusiasm was:	39	54%	23%	13%	10%			4.6	4	5
Encouragement given students to express themselves was:	39	49%	15%	21%	13%	3%		4.4	3	5
Answers to student questions were:	39	46%	23%	18%	13%			4.3	4	5
Availability of extra help when needed was:	39	38%	26%	26%	10%			4.0	2	4
Use of class time was:	39	44%	26%	23%	8%			4.2	4	5
Instructor's interest in whether students learned was:	39	46%	23%	18%	13%			4.3	3	4
Amount you learned in the course was:	39	41%	23%	18%	18%			4.1	3	5
Relevance and usefulness of course content were:	38	53%	16%	21%	11%			4.5	5	6
Evaluative and grading techniques (tests, papers, projects, etc.) were:	39	41%	26%	15%	13%	5%		4.2	3	4
Reasonableness of assigned work was:	39	41%	21%	23%	15%			4.1	3	4
Clarity of student responsibilities and requirements was:	39	44%	23%	21%	13%			4.2	3	4

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STANDARD OPEN-ENDED QUESTIONS

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

1. This class was very stimulating. Operating systems is a very challenging subject with a lot of information being presented in a short amount of time. It introduces you to a lot of topics you may be unfamiliar with and you have to understand these topics as you go in order to be successful as the class progresses.

2. I thought this class was a great continuation of 422. I felt a great amount of personal growth in being able to see connections, ideas, and concepts coalescing. I have always been interested in the why and now I feel like I have a very good understanding of about the why of OS and many of the features that users are not exposed to (and probably should not be). Wonderful class.

3. It was, I had to learn to picture new things.

4. It definitely does, especially because it introduces a lot of new ideas and you have to code in a new language.

5. Yes. This class presented a significant intellectual challenge because of the variety of concepts and applications that need to be learned.

6. This class made me think deeper about how computers operate.

7. This class was very intellectually stimulating. There was a deep dive into a lot of operating systems that can be hard at times to get your head around.

8. This course did stretch my thinking, at least in the sense that I had to relearn a language I have not used seriously for seven years (C language). There was a lot of material that we covered.

9. Intellectually stimulating and very difficult. I felt that I had to work hard to understand the material.

10. Yes it was very difficult

11. Yes, the course presented interesting topics.

12. Yes, I learned a lot of new concepts.

13. Yes, the sections on threads and process synchronization.

15. Great

16. Yes, this class forced me to think about many of the tradeoffs for implementing various features of an operating system.

18. Not really. It was a challenging class. I hope the professor would explain more in-depth the concept in each chapter rather than reading off based on the slide lecture.

19. Yes.

20. Yes, this class has inspired my intelligence, increased my knowledge in the CS field, and gained a deeper understanding of the operating system.

21. Yes, mostly because of the in class exercise with the code about the concepts we are talking about and implementation. When I was following it helped me feel more involved

22. Yeah, I learned a lot as it was connected with the history of computers and how they evolved which helped bring interest to the topic.

23. Yes. It helped me learn about things at a lower level

24. Yes that's a sure thing this class is intellectually stimulating, and this is the most challenging CSS course I ever take but it teaches me a lot of knowledge about the deep level of our computer operating systems such as process schedules and ram separate.

25. Yes, the assignments given in the course were really challenging and required me to think in-depth.

26. The content was somewhat interesting, but I can't say it was really being taught more or so just being "told" to us

27. Yes, this class was hard, it took a lot of brain power to understand some of the concepts and ideas

28. Yes, the content was pretty difficult

29. The class was very intellectually stimulating. Topics covered in class helped me expand upon my knowledge of operating systems.

30. It was much more challenging than expected

What aspects of this class contributed most to your learning?

1. The aspects of class that contributed most were the live demos during class, office hours, and the 5 main projects that were issued throughout the quarter.

2. Keeping engaged in the class. A willingness to participate and answer questions even if they were incorrect. A willingness to ask questions to things that didn't quite make sense. Keeping up on the reading and starting projects early. All of these things contributed greatly to the learning process.

3. The availability of class recordings.

4. The lectures played a big part of it, if the lectures were structured differently, I might've not understood the content of the class. The projects also contributed more to my learning because I have to really understand the topic of the project before starting it.

5. The lectures were very helpful because they reinforced the learning from the readings and clarified difficult and challenging concepts.

6. The projects were great and followed along with the class content.

7. The coding assignments and in class discussions/examples contributed the most to what I learned.

8. I would say the coding assignments contributed the most, relatively, as we were able to make use of the knowledge we had learned.

9. Lectures and the QSC

10. projects

11. Exercises and questions from the slides

12. The lectures and powerpoints were very helpful.

13. * in-class demonstrations * organized and structured layout of content * projects - challenging and fun * for projects 1 and 5, the in-class overview/discussion was tremendously helpful * c-for-os example on GitHub

14. I really like how Professor Pisan is very nice and understanding. I really went through a lot of stuffs this quarter but he really accommodated me. Thank you Professor Pisan.

15. Coding projects were great. During lecture mini 'quizzes' were also very helpful.

16. The programs contributed most to my learning.

18. I believe read the book and trying to understand the concept

19. Projects

20. I think it is the concept of multithreading, which is a very important concept in programming.

21. recorded lecture, being able to look back when you aren't confident about the concept was helpful.

22. The in-class exercises were good

23. The lectures and projects

24. Like the last question, the most essential thing this class has taught me is how the operating system works, and why.

25. In class assignments, I felt that they contributed the most as we got to work hands on in class.

26. The assignments were my favorite part of the course and I appreciate how much weight they hold in the final grade, they really instilled learning the more convoluted topics.

27. The homework assignments helped me learn the most

28. Good organization in Canvas so it was easy to find out what I needed to know and study

29. The homework assignments helped to contribute to my learning. They helped me visualize the topics that we covered in class and felt straightforward enough not to stress me out white completing them.

30. The projects

What aspects of this class detracted from your learning?

1. There were no aspects to the class that detracted from my learning. Sometimes the code examples were given in C++ rather than C but this didn't pose a significant issue.

2. There are normal things in life that just cannot be avoided, and everyone's situation is different, mine is no exception. I have responsibilities to my family and children that sometimes take precedence over some schoolwork, and although I try hard to prioritize deadlines the reality is that my family is the most important thing in my life and sometimes it can be a distraction.

3. The occasional mic cutouts in said recordings, and graded class exercises.

4. I'd say that the homework assignments kind of detracted from my learning. While you could find a good amount of the answers while reading the textbook, there were some questions that the textbook just doesn't cover, and it's hard to find online.

5. None.

6. Nothing

7. Nothing comes to mind.

8. The lectures, honestly contributed the least to my learning. Not because they weren't good lectures, but because there was so much material that we went through in such a short period of time.

9. The office hours were during my other classes so I couldn't go. There was no TA just a student who graded. Also, the QSC only had two tutors available and I would have to wait 2.5 hours to get help. Also, the hours of the QSC were DURING our class -> if there is going to be tutoring help I would have liked it to be during times I could be available.

10. nothing

12. I feel like some of the homework were not as helpful. Sometimes the questions were a little confusing and more time-consuming than actually something I learned from. I would rather have questions similar to what showed up on the midterm.

13. While reviewing the recorded lectures on panto, some of the lectures had issues with the microphone randomly cutting out - a minor problem in the grand scheme of things.

15. none.

16. Many of the PowerPoints in the lectures included far too many review slides that were often glossed over in the lectures. Condensing them into a document or fewer slides might make them feel less like they are distracting from the main topic of the lecture.

17. I still don't really understand the operating system concepts even though I fully pay attention in class.

18. The Midterm was so hard. The study guide and sample are not helpful at all. Most students did not know what to study and what to expect on the test. The professor read off the lecture based on the lecture slide, and there was no clear explanation for each chapter. Also, he expects us to do the project without any explanation for it. Everyone needs to work and do research on their own. Average midterm grade: 58. Low is 26. No extra credit for tests.

19. Lectures

20. I think it is about reading text books, which is always a challenge for me. I cannot fully understand the meaning, and it is difficult to combine practice.

21. more of a personal thing. When I would get confused on something, or I didn't do research before hand on what we would be talking about in class beforehand. I would get easily lost, and feel that way for the rest of the class

22. N/A

23. Nothing really

24. I don't think there's anything that detracted me from learning, the professor tried his best to solve our problem, and this is not an easy class that everyone could pass without any hard work.

25. Lecture, tough to sit through an hour straight of lecture.

26. Lectures are very stale, nothing is being said apart from what on the slides and falling behind even a little basically means you're lost for the rest of that class session

27. Nothing

29. None.

30. The tests

What suggestions do you have for improving the class?

1. I would suggest making the final project a group assignment.

2. I feel like the class is organized and prepared very well. The homework is designed to stretch the thinking of concepts covered in the modules as well as the reading. The projects are fun and simple (not in implementation but in relative complexity) examples of the inner workings of the OS (and also provides extra practice in applying Data Structures and Algorithms!). In general, I feel like this class was organized and structured perfectly for my type of learning (or perhaps I have become a better student/learner/engineer... hopefully) in any case I have no suggestions for improvement at this time.

4. I think this was mostly due to monday-wednesday classes having 3 less class sessions than tuesday-thursday classes, but slowing down during the lectures would be greatly appreciated ! Sometimes it was very difficult to keep up with writing notes !

5. More opportunities for collaboration on projects.

6. Sometimes less lecturely?

7. I would suggest taking more breaks from just heavy lecturing to do class discussions or examples. Sometimes the lectures went by really fast and it would help to take a moment to discuss more on some examples or discussion.

8. Foremost, I would want the material in this class to be split over two quarters. But I understand that may not possible, so instead I would suggest more smaller coding assignments, rather than just the knowledge-based homework that doesn't train you on any coding. I think that would better help us understand the material in such a short timespan.

9. The first assignment is honestly too much work considering how little we knew about C. I think there should be more guidance on it. Also make the TA able to hold office hours to help on HW or questions. Overall, there needs to be more ways for students to get help. Also I felt that the midterm was not reflective of the study guides

10. nothing, there is just too much content to cover

11. Slow down a bit when going through slides

12. Add a vocabulary notes section with all the important vocab from each chapter into weekly modules. This would be nice to reference throughout the week when covering different concepts.

13. At present, I can't think of anything.

15. none.

16. Maybe shift the tests more towards questions asking about design choices surrounding practical applications of the topics rather than questions that test just the student's memory of the concepts taught in the textbook.

17. Instead of walking through the slides, I suggest professor should give student more class exercises for them to practice and engage with the class. There are so many times that he just explains the slides but many of us didn't understand them. It would be so much better if he write his explanation down on write board for us to better understand the concepts.

18. Students were having a hard time during the test. Please provide a clear study guide for the tests. Our midterm questions were barely related to the study guide, and everything we reviewed in class was not helpful to the test. I suggest students research each topic online or in the book to prepare for the test, don't just follow the practice sample.

19. Clearer delivery of course content

20. I have no complaints about the content, structure, assignments, lectures and exams of this course. Pisan is a great professor who supports students a lot and is very knowledgeable.

21. More examples on implementation of concept and explanation of code, this is extra but maybe project review outside of class like a recorded lecture or a zoom running through the project after it was submitted for more comprehension on how to. This would help students with their fundamentals, and seeing the professor thought process would be nice.

22. N/A

23. Professor Pisan is an amazing professor. I'm not sure what to suggest

24. Nothing.

25. Mix up some of the class days. Use workshops maybe once a week as a day for us to work on assignments in groups.

26. Would be very helpful for the lectures to be more of a learning experience, instead of saying what's on the slides, which make little sense to those that don't already know the content, perhaps "translating" it to more understandable terms that would give a better idea to more people in the class as to the details of the topics covered

27. Make the homework due before the lecture, I think it'll be more helpful and people can ask questions on the content. Maybe give an opportunity to correct hw after the lecture

29. None, the class was very well structured.

30. Structure the curriculum in a slower pace

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.