

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

Evaluation Delivery: Online
Evaluation Form: D
Responses: 29/43 (67% high)

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

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 3.8 (0=lowest; 5=highest)	College Decile 2 (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: 5.8 (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 course as a whole was:	29	14%	48%	21%	7%	7%	3%	3.8	2	3
The course content was:	29	17%	38%	28%	14%		3%	3.6	2	2
The instructor's contribution to the course was:	29	41%	28%	14%	14%		3%	4.2	3	4
The instructor's effectiveness in teaching the subject matter was:	29	14%	48%	7%	14%	14%	3%	3.8	2	2

STUDENT ENGAGEMENT

	N	Much Higher		Average			Much Lower		Median	DECILE RANK	
		(7)	(6)	(5)	(4)	(3)	(2)	(1)		Inst	College
Relative to other college courses you have taken:											
Do you expect your grade in this course to be:	29	7%	21%	14%	31%	17%	10%		4.2	0	1
The intellectual challenge presented was:	29	34%	41%	3%	17%			3%	6.1	8	7
The amount of effort you put into this course was:	29	31%	28%	10%	28%			3%	5.8	5	5
The amount of effort to succeed in this course was:	29	48%	28%	7%	17%				6.4	8	8
Your involvement in course (doing assignments, attending classes, etc.) was:	29	28%	38%	7%	21%	3%	3%		5.9	5	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: 13.5 Hours per credit: 2.7 (N=28)

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
		7%	7%	7%	14%	14%	18%	11%		14%	7%

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

Class median: 10.5 Hours per credit: 2.1 (N=28)

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
7%		14%	7%	14%	14%	14%	7%	7%	4%	4%	7%

What grade do you expect in this course?

Class median: 3.4 (N=29)

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
10%	38%	24%	17%		7%	3%								

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

(N=28)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
46%	46%			7%	

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:	29	14%	34%	34%	14%		3%	3.5	1	2
Sequential presentation of concepts was:	29	17%	45%	17%	17%		3%	3.8	2	3
Explanations by instructor were:	29	21%	38%	14%	14%	10%	3%	3.7	2	2
Instructor's ability to present alternative explanations when needed was:	29	24%	31%	14%	10%	17%	3%	3.7	2	2
Instructor's use of examples and illustrations was:	29	24%	38%	10%	21%	3%	3%	3.8	1	2
Quality of questions or problems raised by the instructor was:	29	31%	34%	7%	24%		3%	4.0	2	3
Contribution of assignments to understanding course content was:	29	21%	52%	3%	14%	3%	7%	3.9	3	3
Instructor's enthusiasm was:	29	48%	28%	14%	7%	3%		4.4	3	3
Instructor's ability to deal with student difficulties was:	29	17%	45%	21%	14%	3%		3.8	2	2
Answers to student questions were:	29	21%	41%	14%	17%	3%	3%	3.8	2	2
Availability of extra help when needed was:	29	31%	34%	21%	7%	3%	3%	4.0	2	2
Use of class time was:	29	31%	38%	17%	7%	3%	3%	4.0	4	4
Instructor's interest in whether students learned was:	28	46%	32%		14%	7%		4.4	4	4
Amount you learned in the course was:	29	17%	45%	10%	17%	3%	7%	3.8	2	2
Relevance and usefulness of course content were:	29	41%	31%	10%	14%	3%		4.2	4	4
Evaluative and grading techniques (tests, papers, projects, etc.) were:	29	28%	34%	14%	21%	3%		3.9	2	3
Reasonableness of assigned work was:	29	21%	31%	31%	7%	7%	3%	3.6	1	2
Clarity of student responsibilities and requirements was:	29	28%	24%	31%	14%		3%	3.6	1	2

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STANDARD OPEN-ENDED QUESTIONS

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

1. No, lectures we're terrible and professor Pisan just ran through the slides talking about the information not helping student synthesize it. Made me hate Operating Systems. He is not qualified to teach the material.
2. Yes it was incredibly interesting
3. The class definitely was intellectually stimulating, given the whole idea of an Operating System alongside all the underpinning associated with it.
4. Yes, I learned a lot of things that I just didn't know, and it gave me a lot of fundamental knowledge of computing. This class is one of the toughest I've taken.
5. I think this class is hard.
6. It was challenging
7. Yes, most of topics of this course we're new to me. Also, most of the aspects were abstract, so it was tougher to grasp.
8. Yes! I thought the book was helpful and I really liked the lectures and class plan structure.
9. Yes because most of this material was new to me so I had to really think about it to understand it.
10. OS concepts are (understandably) very abstract, so sometimes it was hard to figure what exactly is going on which is frustrating, but I understand it better than before.
11. I learned the most in this class about practical computer science than any class in the UWB CSSE major. I feel like I see my computer in a completely new way.
12. Yes very much, lots of new topics. Hi future Students ;)
13. It was a lot of content to cover, but it really built a well defined depiction of how operating systems work.
14. Yes. Very intellectually stimulating. Very hard.
15. It was intellectually stimulating and most definitely stretched thinking. The content was heavy, new, and challenging to understand initially. Overall, a good class but requires considerable effort on the student in order to succeed.
17. Yes, there were lots of complicated information presented. Examples and homework helped me understand better, definitely pushed my limits.
19. Yes, there is a lot of new concept and information.
20. Yeah probably. My brain in deadlock right now. Can't think.
21. Yes, operating systems are an important thing to understand.
22. It absolutely was, for reasons reflected in my earlier radio button answers.
23. Yeahhhhhh. It made me realize how much I actually hate operating systems. (Not really, I'm kidding, it was a cool class. It was cool to learn how operating systems work.)

What aspects of this class contributed most to your learning?

1. Nothing in the class contributed to my learning. I used YouTube and Udemy to understand material.
2. The assignments/ThreadOS
3. Professor Pisan's ability to engage through in-class coding examples.
4. The homework assignments and lectures combined give a good understanding of the material.
6. Homework and lectures
7. The lectures and programs.
8. Reading the book and the classroom Q/A practice.
9. The homework, programs, and in-class activities helped a lot.
10. - Discord communication - Class discussion Q/As. - Exam preps
11. The lectures and program assignments were by far the most helpful pieces of the course.
13. Lectures were helpful and professor Pisan was able to address questions effectively.
14. Collaboration with my teammates helped me learn immensely.
15. Lecture and book reading.
16. instructor's explanation

17. Example questions on the slides for midterms and finals helped me understand what I needed to know. The homework and practice quizzes were also beneficial to remind me what I might've missed. The assignments are interesting, though the testing is an absolute struggle since it takes so long.
19. Reading the book, the midterm, and final review slides. Homework and assignment also help a lot.
20. The whole thing? I payed for the whole study package.
21. The lectures
22. Professor Pisan specifically. He's fantastic.
23. The lecture slides were decent. Showing up to class was important to understand what the book failed to explain well. Being able to ask questions was good. I liked the questions asked for the midterm review, they helped explain a lot. (I wish the final review had more questions like the midterm review did.)

What aspects of this class detracted from your learning?

1. Lecture was poorly structured, just running through slides not doing any problems on the whiteboard. Most students stopped paying attention in class. Cancelled his office hours, students went to Jim Hogg's office hours instead. When writing code on the screen, used hard to see vim editor impossible to follow code not written or edited in IDE. This course made me hate this major. We were given barely any instruction on how to do HW. 90 percent of students resorted to GitHub and converting .class files to .Java to get answers to Programming assignments because Yusuf didn't even know what the assignments were.
2. I feel that Professor Pisan is a good instructor, but came into OS with the assumption that all the students had taken hardware or had a deep understanding of a lot of these systems. This was not true and forced me, and many other students, to spend the majority of the quarter playing catch up because the foundation material was gone over very quickly.
3. Sometimes the lecturing portions are too abstract and could be better broken up into more digestible units.
4. There is often so much material and it feels like very little time to cover everything, and so sometimes (often) it felt rushed.
6. hard tests
7. Nothing comes to mind.
8. Nothing really.
9. Some of the homework/program questions were vague so more time than necessary was spent trying to figure out what it meant.
10. The textbook: the homework questions (pulled from the book) are extremely vague and there's no clear answer even in the book sections. I think some other resources (YT videos, other links) may be more helpful in understanding the underlying logic. The assignments: the assignment descriptions are lengthy, but I think it could be more clear how to start exactly, especially for Program 4 and 5.
11. Sometimes the additional homework assignments felt like busy work.
13. The instructions for the assignments were a bit clustered and even the supplemental documents didn't create an environment that enabled the student to create the assignments with their own ingenuity, lots of guidance was necessary with class decompilation to see how each of the ThreadOS systems integrate.
14. The dryness of the material, but that can't be helped.
15. Confusing explanations of content.
16. massive lectures without detailed explanation and concentrated aspects
17. I found the lectures are hard to follow, not many story examples to make it memorable. I wish some concepts could be presented more simply.
18. Assignments
19. Everything else aside from thing mentioned above.
20. I don't really know. Doesn't do much critical thinking recently. I do know about critical section so I guess not a lot.
21. The book is terrible, boring, and frequently vague. Thread OS assignment readings are in bad need of a clean up.
22. ThreadOS is truly terrible. From race conditions that are only supposed to happen every now and then but seemed to crop up constantly, to an inconsistent indentation scheme and mixture of tabs and spaces, it is truly egregious. Those java files we have access to aren't particularly well documented/commented, and would benefit from serious reorganization. It's honestly egregious. Further the time sunk into working with ThreadOS was unequivocally the least productive as far as learning about operating systems. Even the homeworks were better (especially any that involved coding).
23. The programs were boring and disorganized. P2 and P4 were a little interesting because they involved creating some actual algorithms, so I did learn something from those. Otherwise, the assignments were not that helpful. P5 took a significant leap in difficulty, P1 through P4 were just "follow these poorly written instructions and make/modify maybe one or two files" and P5 was like "follow these poorly written snippets of instructions thrown all over the place in various websites and documents, modify like four files, and also make like four more. Good luck."

What suggestions do you have for improving the class?

1. Get adequate professors to teach hard courses such as CSS 430. Change assignments if professor is not going to discuss it. We barely covered threadOS so we had no idea how it worked. Terrible.
2. Spend more time on foundations of each section. Giving real world analogies and spending time drawing relationships would have been helpful. For example: RAM is just a bunch of lockers, each locker itself is a frame. We place in a backpack, aka a page, which contains data and necessary information etc.
3. The class itself is well structured, though I feel the 2nd portion of caching/VM is a bit more rushed and less explained than the original first half portion.
4. I know that people would complain about the additional cost, but I almost wish this class were TWO classes so that there was more time to sink into each topic.
5. if OS&&hardware could be merged into one class but and separate into two quarters it will be great.

7. The program instructions we're much more organized on the UW Seattle website than UW Bothell's instructions. I would look at the instructions from Seattle's more than this class'. To improve the class I think the instructors should clarify the program instructions better.
8. Updating/ organizing all the thread OS and programming assignment information. Possibly providing interfaces for some of the assignments.
9. Have better explanations for how the programs are supposed to be implemented, specifically programs 4 and 5.
10. - Record lectures - Practice tests that "mirror" exams: similar types of questions, ESPECIALLY calculations/flowchart/diagrams/what's-this-code's-output/write code/ - Merge the FAQ and assignment page together: If questions have been asked often enough, group those ideas together so that it makes more sense when we're reading the assignment page the first time, instead of switching between different pages. Sometimes assignment "requirements" are mentioned in the FAQ, and not in the main page. - Talk about/introduce upcoming assignments well in advance, instead of the Thursday before it's due on Sunday. - OS is very abstract so be a little kinder on exams
11. I suggest assigned reading instead of the homework assignments, where we summarize the chapter and maybe do 1 or 2 practice problems.
13. There was a lot of information in a small timeframe which is hard to retain. It could be a part 1/part 2 course. Also, lack of some concepts were clarified by students who had attended CSS422 (hardware) and it was recommended by a fellow classmate that 422 should be a prerequisite to this course.
14. Maybe splitting up the giant programs into smaller more manageable programs so that it doesn't get too far ahead of the students.
15. More in class examples to prepare for exams. Can be hard to understand what it most important to take away, as there is so much content.
16. some students mentioned 422 should be the prerequisite of 430. I think this course should be split to 2 quarters so student can have a deeper understanding
17. Since there is so much material, giving bitesizes of information and highlighting important topics that should be focused on could be more beneficial than going through EVERYTHING in the slides from the book.
18. More clarifying for the assignments. The assignments are hard, and the instructions are not clear.
19. A lot of thing can be explain more easier with an image or some kind of visualization in the slides instead of almost everything is text. Focus on important idea and general concept rather than going through everything in the book lecture slides.
20. Maybe not in the morning. My Kernel (brain) put all my thread to sleep. Not enough processor :(.
21. The first time I took this class, I had not taken hardware (CSS422) and was extremely confused on multiple topics. This time around, having taken hardware, the class is a lot easier to understand, allowing me to get more out of the course. CSS422 should REALLY be a pre-requisite, seeing how confused other students have been who also haven't taken 422 yet.
22. Ditch ThreadOS, or do a complete redesign.
23. Redo the assignments, or at least make the instructions a lot more organized and better to follow. Do the final review like the midterm review (lots of questions that make us realize we know 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.