COURSE SUMMARY REPORT
Numeric Responses

University of Washington, Bothell
Sci, Tech, Engr. & Math
Science, Tech, Engr. & Math
Term: Winter 2021

IASystem
The Course Evaluation Standard

CSS 382 A
Introduction To Artificial Intelligence
Course type: Online

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

Evaluation Delivery: Online
Evaluation Form: I
Responses: 25/40 (62% 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
4.6	**7**
(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 distance learning course as a whole was:	25	48%	24%	16%	12%			4.4	6	6
The course content was:	25	64%	20%	12%	4%			4.7	8	8
The instructor's contribution to the course was:	25	68%	24%	4%		4%		4.8	7	7
The effectiveness of the distance learning format was:	25	36%	48%	12%		4%		4.2	4	4

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	16%	16%	20%	20%	16%	8%	4%	4.6	2	3
The intellectual challenge presented was:	25	32%	44%	24%					6.1	8	8
The amount of effort you put into this course was:	25	28%	52%	16%	4%				6.1	7	7
The amount of effort to succeed in this course was:	25	36%	48%	8%	4%	4%			6.2	8	7
Your involvement in course (doing assignments, attending classes, etc.) was:	25	32%	48%	4%	12%	4%			6.1	7	7

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: 12.5 Hours per credit: 2.5 (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%				36%	12%	16%	28%			

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

Class median: 10.1 Hours per credit: 2 (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%	4%	12%	16%	32%	8%	12%	8%			

What grade do you expect in this course?

Class median: 3.6 (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
28%	32%	8%	16%	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
20%	4%	72%		4%	

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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	College
The helpfulness of the distance learning staff overall was:	25	48%	36%	8%	8%			4.4	6	
Student confidence in instructor's knowledge was:	25	68%	20%	8%	4%			4.8	6	6
Timeliness of instructor response to assignments was:	25	52%	36%	12%				4.5	5	6
Quality/helpfulness of instructor feedback was:	25	64%	20%	12%	4%			4.7	6	7
Tailoring of instruction to varying student skill levels was:	25	40%	40%	16%	4%			4.2	4	
Clarity of course objectives was:	24	50%	38%	12%				4.5	6	6
The organization of the study guide was:	25	32%	44%	16%	4%		4%	4.1	1	
Content of the study guide was:	25	40%	28%	24%	4%		4%	4.1	1	
Relevance of textbook for self-study was:	23	22%	22%	30%	26%			3.3	0	
Usefulness of reading assignments in understanding course content was:	24	17%	33%	33%	17%			3.5	2	3
Usefulness of written assignments in understanding course content was:	24	29%	25%	29%	17%			3.7	2	2
Usefulness of video media in understanding course content was:	24	50%	42%		8%			4.5	4	
Usefulness of online resources in understanding course content was:	24	50%	38%	4%	8%			4.5	6	6
Usefulness of audio media in understanding course content was:	24	38%	42%	12%	8%			4.2	3	
Relevance and usefulness of course content were:	25	56%	28%	8%	8%			4.6	6	6
Evaluative and grading techniques (tests, papers, projects, etc.) were:	25	48%	44%	4%	4%			4.5	5	6
Reasonableness of assigned work was:	25	52%	16%	16%	16%			4.5	6	6
Clarity of student responsibilities and requirements was:	25	60%	32%		8%			4.7	7	7

COURSE SUMMARY REPORT
Student Comments

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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 challenging in a good way

2. Yes this class was very intellectually stimulating. The material was quite challenging and the homework/exams were quite difficult. But Prof. Pisan did a great jpb at catering information to his students and showing/telling us how this class is applicable to the real world.

3. This class requires a lot of thinking and understanding of the lectures. These are tough concepts to grasp at first but over time you see the patterns of what kind of code applies to similar areas. The theory can make sense to me but in practice, coding it is tough.

5. Was very challenging and had a lot of upfront learning in the first few weeks.

6. Yes, it definitely required breaking problems down and really thinking about why and how the subject matter should be applied

7. The content was very engaging, as you were able to see what your work was doing visually. All elements of programming assignments allowed a challenge while exploring new ideas, but never felt unfair.

8. Yes, the concepts were quite challenging compared to other CSS classes. Some concepts felt more abstract but still had mathematical formulas that solved them.

9. This class defines intellectual stimulation and stretching one's thinking. The practice quizzes gave students something tangible to study, the quizzes pushed the students to a topic comprehension that went way beyond the lectures, and the projects pushed even further beyond that. There was not a moment where I felt that I was bored or not learning.

10. Yes, it was a great introduction to AI concepts.

11. Yes! This was a fun and educational course. I would LOVE to take more of this over some of the core requirements I am forced to take.

12. Yes, the material was very interesting. The topic overall was fantastic.

13. Yes, as it challenge your knowledge of AI related concepts by trying to implement Pacman in various coding projects.

14. This class was an absolute blast. I had never had any experience with AI before so I was a little scared to take it, but I shouldn't have worried. The class was excellent - the material was very interesting, and I loved using the Pac-Man as the coding platform. I wish there were additional AI classes after this!

15. The class did stretch my thinking because I learned a lot about the ways AI are implemented and how they work. I learned how algorithms play a part in an AI's decision-making process.

16. Yes, it was fairly challenging especially since I did not get as much time to prepare without being distracted by physical aches. My late night expeditions were especially valuable to my learning since I would then have more concentrated time to focus

18. yes, Really fun class. Lot of techniques and learning needed. Really good practice for creative thinking and probem solving

19. I found the class very stimulating in testing my knowledge of Artificial intelligence.

What aspects of this class contributed most to your learning?

1. The projects were very effective

2. Prof. Pisan's willingness to change course due dates and material to allow for students to stay on track in class. He was also very good at answering student questions and providing clarification to those who had questions

3. The professor was very understanding and would extend deadlines as needed or completely take out requirements if he knew we had not covered it and would not have time to cover the info. He was also very patient with students as they asked a lot of questions. Finally, he was very interactive with students by hosting his own Discord server which in turn helped the students to help each other. Along with student collaboration, it was really helpful to be able to work with a partner on both assignments and quizzes. If we were forced to do everything alone, I would have struggled much more.

4. The exercises helped a lot with preparing for the midterm exam. I also appreciate being given practice exams to help prepare for the midterm as well. During lectures, it was nice watching videos that show off what the agent is supposed to do, and helps build a foundation for what's expected during the projects. Listening to Queen before every lecture also made me more excited and alert to listen to lecture. Thank you so much for teaching this course this quarter Professor Pisan!

5. Solid explanations and excellent guidance from the instructor. He was able to adapt the course to meet student needs/challenges throughout the Quarter. Also real life applications, conferences, and guest speakers were very cool!

6. The discord server. I don't know that I would have been very successful without it.

7. The projects, where ideas were applied.

8. The lectures and the programming assignments were great. I thought the assignments were one of the best part of this course. So often in the CSS degree you work weeks on a project and your payoff is seeing the correct numbers outputted but in this course you actually got to see your code move pacman visually. I thought that made this class one of the most rewarding so far. I also have to say the class discord helped tremendously. It was the best use of a discord in any class I have taken. Professor Pisan actively encouraged help from other students which created a very tight knit and collaborative environment without breaking the boundary of plagiarism. I think Professor Pisan's use of discord is something more classes should take a look at for courses.

9. The practice quizzes, quizzes, and projects as a suppliment to the lectures worked excellently, and the autograder was amazing. The collaborative/community focused aspects of the course REALLY helped me. Everything contributed to my learning. Even listening to QUEEN "Don't Stop me Now" at the beginning of each class helped. It got me hyped up, ready to learn, and made me feel closer to my classmates because of our group tradition.

10. The lectures, lecture videos, and programming assignments were the most helpful. The Quizzes were really good too. I also liked the AI Gaming Summit

11. The teacher is very good. Shout out to Berkley for the amazing auto grader

12. The quizzes contributed most, but in my opinion more practice examples were needed, because sometimes I was just super confused but yea.

13. The lectures and the quizzes.

14. The videos shown in class were always helpful, especially since I'm a visual learner! The lectures in general were very good, and the class discord was a great resource. Everyone was incredibly willing to help.

15. The projects contributed most to my learning as they helped me understand how to put what I learned in class into practice. The group quizzes were especially helpful in learning the concepts.

16. The group quizzes were especially helpful because I got to talk about and run through the process with feedback. We messed up, but we also got to correct each other along the way. It was the most helpful to especially since our group was well rounded and contributed equally. Each of us had a key and undeniable contribution.

18. problem solving, learning about artifcial intelligence and machine learning in general

19. I think the examples and projects help contributed to my learning.

What aspects of this class detracted from your learning?

1. None.

2. Nothing directly related to this class, however some of the home-works were very long which gave me less time for other class assignments.

3. The start of the quarter was rough with a large first assignment that didn't make much sense at first which caused a high learning curve - especially for people that have never worked in python. The quizzes were the toughest part of the class since they were timed and didn't feel like they always directly related to what we covered in class - or at least it was tough to see how to make the jump from what we learned to how to apply it.

5. Not knowing Python prior to taking the class. Different sources for quizzes, midterm, and assignments. Felt very confusing to wade through all of the different information.

6. Everything felt rushed. we are on a quarter system, and that adds to the challenge, but sometimes that rushed feeling would lead to a disjointed feeling. Like Why are we talking about CSPs now? We don't have a project for them, should we look at those another time?

7. The exercise quizzes. The content was useful, but the fact you had one chance to complete them was very stressful. Although this won't affect my grade significantly, the stress experienced each time was not useful to learning the material.

8. I thought some parts of the programming assignments felt like a brick wall where any progress was hard to make, but again, the discord was there to help with that.

9. None that I can think of.

10. The Midterm practice exam guide actually threw me off from what was on the midterm

11. Online learning

12. Sometimes I was really surprised by novel topics and ideas in quizzes

13. Nothing.

14. Nothing comes to mind besides the fact that it was remote, which is unavoidable at this point.

15. Nothing in the class detracted from my learning.

16. Nothing particularly detracted other than the learning curve being difficult

18. class was really hard on times, need to put really long time to learn and succeed on all materials

19. I think nothing detracted from my learning. I felt sometimes the information was overwhelming and would like more visual.

What suggestions do you have for improving the class?

1. None

2. Continue to encourage students to attend sessions like the Microsoft Summit.

3. The intro to Python assignment could be organized better as a step-by-step tutorial on using python for the first time with a program and the command prompt (it took me too long to realize I needed to use the CMD. Maybe a recap on how to use Github would be good as well. Splitting up project 1 would be nice to get into the groove of things. It's very intimidating to see so many questions on there that all take hours to complete. Change quizzes to either be unlimited time or give one extra attempt (without showing answers) so students can try and work through what they did wrong and try to improve.

5. I personally think the class as a whole is very good, it just may need some restructure so assignments, quizzes, and tests all line up content wise. Content felt choppy from topic to topic.

6. Since the lecture was adopted from a semester class, I really think they need to be gone over and cleaned up. Some of the topics just felt added in lazily. I think the lecture slides need some polish

7. Modify how exercises are handled. One potential method is giving students two chances, while still allowing for group work. Being able to talk about the ideas while trying to sort them out was very useful.

8. I think a lot of aspects of this class are great, I don't have much to add. I would just urge other classes to look into using discord as a tool like Professor Pisan does.

9. I wish I could think of a suggestion. I have really tried. Honestly, I based a lot of my suggestions to other professors on the criteria of how well you teach this class. You showed me what learning can look like when a professor works hard. You are the model professor (even with the course being remote)!

10. The only thing I would change is the midterm practice exam guides to be more targeted to what is actually on the midterm

11. MAKE THE FIRST HOMEWORK EASIER! (or give us more time) Everything else was super accommodating, and I felt like I had ample time to complete it. But holy crap the first homework was so hard for someone just learning python. We need more time on that one. I'm pretty sure most of the class used their 1 day extension on this homework.

12. More examples, or homework problems that had step by step work through examples. When I saw a problem worked through I understood it much better and then could apply it. Having that on paper was really good for me.

13. Possibly try to add a summit as a class. Where the class has to attend at least one summit to see what they are learning is applicable to the real world.

14. Having time limits on the quizzes was a bit challenging, especially when trying to work through logic for the first time. Perhaps getting rid of the time limit or allowing there to be multiple attempts (2)?

15. I'm not sure how to improve the class. This was one of the better courses I took this quarter.

16. I think more in-class activities and exercises would have been helpful for making sure we were applying the concepts correctly before doing the quizzes

18. No idea, i guess syllabus and content is good but there is students side where improving is necessary. Also this is mostly elective course, so students do not tend to focus so much on the course when they already have core classes at the same time, may be that perception made me think course load was too much.

19. I think more visual would help learn about search better. In addition, I think some python demo or unity demo would help us learn even more about artificial intelligence. For example, a unity demo would help us see the visual elements involved in AI, and looking at the code would help us learn how to program on unity.

INSTRUCTOR-ADDED OPEN-ENDED QUESTIONS

What advice would you give to a student taking this course that will help them succeed?

1. Work hard

2. Study the material vigorously and ask questions when you have them

3. - You may not need the book but sometimes it has the exact answers you seek on a topic. - Start your projects early and do a little each day to make it easier but also to give yourself time to think through it in the back of your head throughout the day. - Learn how to use python before the class starts so you don't use up homework time trying to figure it out. - Take full advantage of the collaboration system! 2 heads are better than one on projects and quizzes! You are all doing the same assignment, so why not collaborate anyway?

4. Do not wait last minute to work on the projects because it's difficult turning something you learn from class into code instantly. These projects require you to take your time to fully understand how to implement them.

5. Make sure to allocate plenty of time for the assignments, no matter how easy they look.

6. Leverage the discord to ask questions and get help. It really builds the community of the class.

7. Start your project assignments early, and use the Discord channel a lot. Talking to your classmates about your problem will help you more than any other resource, since it helps you think about the problem deeply. It will also give you a diverse number of opinions, which will help you find the solution that makes sense to you.

8. Utilize the class discord, everyone is in the same boat and can lean on each other for help. Ask and answer questions often. Help create an encouraging and collaborative environment and the class will be so much smoother.

9. Connect with your classmates, form strong study groups, study after EACH lecture, start projects early, ask LOTS of questions.

10. Start programs early so you can ask questions later.

11. Git gud

12. Start projects early, and prepare like mad for quizzes.

13. Try to make friends, and talk in the discord. Discord was the best place to get help from fellow students, such as asking questions and holding study sessions.

14. Make use of your classmates! Never be afraid to ask for extra help or additional time if something doesn't seem reasonable. This class won't be easy, but it will be so, so rewarding, especially because of Professor Pisan.

15. I would advise them to start the projects early and ask questions often. Professor Pisan is very willing to provide support if you ask for it. Also be sure to do the practice questions on the study guide for midterm and finals.

16. Use the Discord and don't be afraid to ask for help early in the course.

17. Form a study group

18. be ready to practice your brain and invest lot of time for the class load

19. I think to be prepared on python and to be ready for a lot of search algorithms.

20. Make sure you learn python before taking this course

21. Build your schedule two weeks in advance as many of the homework assignments are difficult enough to be more than 20 hours of work.

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.