



# DATA 11800 2, STAT 11800 2, CMSC 11800 2 - Introduction to Data Science I - Instructor(s): Amanda Kube

Project Title: **College Course Feedback - Winter 2023**

Number Enrolled: **74**

Number of Responses: **39**

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## Report Comments

Opinions expressed in these evaluations are those of students enrolled in the specific course and do not represent the University.

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Creation Date: **Thursday, June 22, 2023**

## What are the most important things that you learned in this course? Please reflect on the knowledge and skills you gained.

Comments
Coding in Python and creating functions, dataframes, arrays, graphs, and manipulating data.
Application of coding (Python) to statistical data-oriented problems.
How to handle a data set in Python to draw learnings, make inferences
The most important thing I learned was the basics of Python, a computer language I had no skills in before but which is certainly useful to know.
Going in with no Python knowledge, I learned a lot about how to analyze data in Python and make graphs/datasets. I also learned more about hypothesis testing and analysis.
python skills
Basics of python, specifically pandas and a bit of numpy. These are important skills that I've seen come up in other classes, and is taught with no expectation of previous experience here
Basic coding for data science in Python, but very much with a statistical focus. As a social scientist, I would have perhaps liked more about data collection (scraping etc.) and visualization, rather than hypothesis testing.
python basics, data visualization, applying computational techniques to fundamental probability + statistical concepts.
In this course, I learned about basic programming and coding in Python through Jupyter Notebook, basic mathematical operations, importing dataframes and libraries (Numpy, Pandas) into Python, the structure to write your own functions, data types such as lists, arrays, and dataframes, accessing and indexing rows and columns of dataframes, grouping and merging data from tables, visualization of data through graphs by writing code, types of sampling and bias, probability and conducting simulations to approximate probability, hypothesis testing (distributions and p-values), AB testing, confidence intervals and bootstrapping, multiple testing, and data ethics.
How to use python for data wrangling
Definitely how to combine my coding knowledge with my statistics knowledge.
how to use python to edit data frames, plot data, and run simulations, plus some basic probabilities.
python, some statistics
Statistics and how to analyse data
meaning of p value, basic python syntax, how to write functions and simulations, how to estimate probability
Python, statistical analysis
Basic python coding, basic methods of data collection and statistical analysis (hypothesis testing)
Introduction to data science.
N/A
A lot of basic python and how to use to evaluate data. We also learned a lot about statistics and how to evaluate samples.
How to use numpy/pandas/matplotlib for data visualization and data analysis. I also learned about different functions python had like group by and apply and utilized those to analyze a data set on my midterm. Also really enjoyed midterm project – wish both the final and midterm were projects but the final wasn't too bad. Mainly focused on probability / FDR which was covered in a very short period of time
The most important things I learned were a intro into how to use and understand python, a better understanding of p-values, bootstrapping, and confidence intervals, determining whether an observed correlation is statistically significant, and having a better understanding of the ways in which data can be manipulated.
Python stats
How to work with data
Numpy and Pandas
Data visualization, group by and merging
Manipulating and analysing dataframes
How to visualize data using pandas
An introduction to statistics and coding with python.

## Describe how aspects of this course (lectures, discussions, labs, assignments, etc.) contributed to your learning.

Comments
Lectures introduced new topics clearly and allowed us to ask questions. Labs were not too useful and confusing.
Material assessed within weekly homework assignments was first discussed within lecture section
I primarily learned through the homework assignments
The weekly assignments were always very challenging, usually my most challenging homeworks, and forced me to learn to find outside sources to plumb for information.
Lectures were helpful, especially as the lecture slides included exercises and examples of code. The labs did a good job of reinforcing concepts. Also, the homework did a great job of covering and synthesizing lots of topics without being too long or intimidating.
lecture was OK, but the class went really fast, especially in stat section for someone with no stat background.
Labs were turned into office hours, which I liked. Assignments and lab assignments were good practice of the concepts from class. Lectures were fairly good, but the fall off of in class quizzes after the midpoint of the quarter was unfortunate since they interrogated my understanding of materials.
Labs and homework were nice to have, but the class time was not really worth waking up and getting to campus at 9 o'clock, three times a week.
lectures were helpful as Prof Kube went at a good pace and the slides were informative and easy to follow. Homeworks also helped apply programming concepts learned in class.
The lectures of this course were very helpful in understanding the material and contributed well to my learning. The labs reinforced material from the lectures, but oftentimes were difficult to fully complete without additional guidance from TAs. This was similar to the weekly homework assignments, which seemed to be much more difficult than the examples taught in the lectures.
Lectures were super helpful
The midterm project really made me think and do more creative work than I'm used to in a math based class.
The lecture and lecture slides were very helpful. The intention of lab sessions was a bit unclear – initially, it was for completing "lab work", and later it became TA Office hour.
homeworks helpful to learn material
The lectures were very good, but the labs were too long making it almost impossible to find time to do it
lectures and TA lab sessions
Lectures and homework
Lectures and lecture slides contributed most to my learning, especially having practice problems during lectures. Completing the homework and labs also clarified the concepts introduced in class.
Problem sets helped me learn the material. Lectures were a waste of time.
The professor, professor Amanda Kube, is a phenomenal instructor and pedagogue.
The lectures were very helpful in introducing all of the concepts to me, but the homework assignments were the most helpful as that is how I got to practice everything we learned in class. The homework assignments and labs definitely helped reinforce all of the concepts.
Lectures (Professor Kube's especially) were incredibly helpful. She was fast but elucidated her thoughts and the material in a very clear and understandable manner. She would stay after class and helped us review the material / fix issues in our code through guided reasoning.
The homework assignments were challenging but forced be to learn the basics of coding using python, these really helped me learn, labs were good for getting help on the homework from the TA and fellow peers, but the labs themselves were long and so I didn't complete them. The lectures were pretty good too for learning concepts in statistics, information about data ethics, and also some basic coding knowledge that I didn't know like the fact that "==" checks whether values are equivalent while "=" assigns variables. However, it was hard to pay attention to specific coding methods taught during lectures, for coding the vast majority of things I learned while doing the homework, utilizing trial and error as well as the internet to figure out how to get the code to do what I wanted.
slides online so no need to attend useless lectures
Homeworks were good and so was the textbook. Classes were negligible.
Lectures were great at teaching me the new material (I didn't read the textbook or complete the labs, but I should have). The Jupyter notebooks we worked off of doubled as the lecture notes and were helpful for reviewing the material for the final.
Professor Kube has extremely high conscience, she offer spent hours after the lecture listening to our questions and answering them.
Labs were also really helpful for questions.
Textbook
labs and assignments are helpful

Comments
Lectures were helpful, but they did not cover all of the material that we needed to know for the class. I had to do a lot of looking online to understand how to solve the homeworks, midterm project, and labs.

**Please respond to the following:**

	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This course challenged me intellectually.	4.36	4.00	0.00%	0.00%	11.11%	41.67%	47.22%
I understood the purpose of this course and what I was expected to gain from it.	4.36	4.00	0.00%	0.00%	8.33%	47.22%	44.44%
I understood the standards for success on assignments.	3.81	4.00	5.56%	5.56%	19.44%	41.67%	27.78%
Class time enhanced my ability to succeed in graded assignments.	3.83	4.00	8.57%	5.71%	14.29%	37.14%	34.29%
I received feedback on my performance that helped me improve my subsequent work.	3.64	4.00	5.56%	8.33%	27.78%	33.33%	25.00%
My work was evaluated fairly.	3.92	4.00	2.78%	8.33%	11.11%	50.00%	27.78%
I felt respected in this class.	4.25	4.00	2.78%	0.00%	8.33%	47.22%	41.67%
Overall, this was an excellent course.	4.06	4.00	0.00%	2.78%	19.44%	47.22%	30.56%

**Additional comments about the course:**

Comments
Dr. Kube is a great presenter and is very knowledgeable about Python and data science as a discipline.
Fully manageable, even without any prior coding/Python experience
The course content is great. The class could be made sooo much better with one improvement: proofreading the homework assignments before they are released. I recognize going into CS/related courses that homework assignments can be vague sometimes and require clarification from the instructor. However,t this class took that to a whole new level. EVERY homework had numerous cases of vagueness or problems that were so frustrating for a student. Some of these felt like they would have been fixed with a quick review of the assignment and resulted in a student wasting hours to do questions that take minutes. Its a great course – with great Professors. I just wish they can improve on the clarity of the assignments even more because it can be very frustrating for students and leave a bad taste.
Moves very quickly Homeworks are significantly more difficult than anything we do in class. You feel very out of your depths when attempting homework.
Feedback on homework and midterm was terribly late, nor was it very helpful to develop my coding style, it simply evaluated my responses to the specific homework tasks.
Although this course is introductory and can be taken by those without coding experience, I found the pace of material covered and coding proficiency required quite difficult especially in the later half of the quarter.
Kind of disorganized
Very hard final and homeworks were not easy
The professors and TAs could really work on familiarizing themselves with the materials better. The TA and Professors from different sections frequently gave answers/feedback that were directly contradictory to each other.
Lectures were pretty disorganized, and there were too many TAs giving different information to students. Problem sets were very time-consuming.
I really enjoyed this course with this professor! I've learned a lot about python and even some more about probability. Honestly, I would take this course again if I could.
Some homework assignments are harder than others, this isn't the easiest class due to weekly homeworks, but it is not impossible even with no prior coding experience.
Rubric for assignment grading are clear but tough
Weekly homeworks, midterm project, final exam
This class is extremely TIME CONSUMING, I had to spend hours in lab daily just to know how to answer the hws.
what was that exam

## I would recommend this course to:

	No	Yes
Highly-motivated and well-prepared students	8.33%	91.67%
Anyone interested in the topic	11.43%	88.57%

## Thinking about your time in the class, what aspect of the instructor's teaching contributed most to your learning?

Comments
The walkthrough examples in class.
Use of specific examples within lectures
Prof. Kube was always good at answering questions and making sure everyone was comfortable with the material.
The instructor stayed behind after lecture and let students stay behind after lecture to go over concepts and problems.
being available on ED
I liked the in class quizzes and demonstrations. The jupyter slides were really really useful and the best way of learning to code that I've seen.
Homework and textbook references
explanations during lectures were concise. Prof Kube would always be willing to answer questions after class and go over things again in class if students were confused.
Professor Kube always made sure to clear up confusions that students may have had about the lecture material. She often also stayed after class to answer any lingering questions, which was very helpful in gaining clarification.
Her lecture style was good, very engaging voice.
The examples the professor gave in class were helpful for me to complete homework.
The lectures were very good, and she offered valuable help during office hours.
lectures.
Professor Kube was always really patient and detailed with her explanations. She was also always willing to answer any questions I may have had about the course or homework.
Lecture content and providing practice problems and going over them.
Her ability to communicate difficult and/or abstract concepts in an easily understandable manner.
She explained all of the Python functions very clearly and when she was teaching a large, multi-line code, she did a great job commenting on every line so that we understood what the code was doing. She also explained all of the statistical concepts very well. She also allowed for questions during class, which was very helpful.
I would say her engagement with students after lecture and her taking time to explain probability on the board / her assistance whenever needed.
I think attending the office hours and asking the instructor questions after class contributed most to my learning, as I was able to get help with specific things that I didn't understand.
Professor Kube is amazing at explaining statistical and programming concepts, both in class and during office hours.
Professor Kube is very helpful, she spent hours explaining more and answering our questions.
Examples were fantastic, Professor Kube is a great lecturer

## What could the instructor modify to help you learn more?

Comments
I think the old style of labs worked better, to be honest.
More quizzes in the second half of the class, and I think the lectures in the second half of the quarter dragged a little in terms of pacing , due to the planning for longer classes instead of the 50 minute blocks we had.
Give feedback on time and make it more substantive. Make the homework and labs more oriented to developing skills, rather than judging our ability to google syntax tricks.
provide more hands on coding exercises in class that will help for completing homeworks rather than only going over lines of pre-written code.
The professor could possibly make the lectures more interactive with coding examples for students to try on their own: the first few lectures had this component, but did not in later lectures (probably due to time constraints in covering all the material).
More interactive questions during lecture. We did this more at the beginning of the quarter but it was lessened as the quarter went on.
I hope the professor can check the slides more carefully before class, as sometimes there were mistakes in the slides, and the professor said the slides were from prior years.
More clarification on some things
give out clearer grading criteria
It would be helpful to have the answers to class practice problems and the homework afterward so that we can learn about the most elegant/efficient ways to code.
I cannot think of anything the professor could do better. In terms of the classroom, everything was perfect and the professor was terrific!
I thought the course felt a little fast-paced and for me, someone who had no coding/Python experience, keeping up with the material was a challenge at times. I would sometimes be stuck trying to understand a concept from a class or two prior when the material being taught was built off of that knowledge. One change I would make would be to cover less material during each class and spend more time on all of the concepts.
Nothing more. She was a perfect instructor. She knew the material very well. Provided leniency when needed and always were prepared for any question.
I think the instructor could possibly create a study guide for the final exam to help me prepare and review material learned in the course, I think that this would help me out.
Nothing, she was amazing.
Give more examples.
Help us prepare for final
Include more practice problems and feedback on homeworks.

## The Instructor . . .

	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Organized the course clearly.	4.13	4.00	0.00%	3.03%	18.18%	39.39%	36.36%	3.03%
Presented lectures that enhanced your understanding.	4.12	4.00	3.03%	3.03%	15.15%	36.36%	42.42%	0.00%
Facilitated discussions that were engaging and useful.	3.56	4.00	3.03%	12.12%	15.15%	39.39%	12.12%	18.18%
Stimulated your interest in the core ideas of the course.	3.94	4.00	0.00%	12.12%	15.15%	39.39%	33.33%	0.00%
Challenged you to learn.	4.12	4.00	0.00%	9.09%	6.06%	48.48%	36.36%	0.00%
Helped you gain significant learning from the course content.	4.09	4.00	0.00%	6.06%	12.12%	48.48%	33.33%	0.00%
Was available and helpful outside of class.	4.24	4.00	0.00%	6.06%	9.09%	39.39%	45.45%	0.00%
Motivated you to think independently.	4.03	4.00	0.00%	6.06%	24.24%	30.30%	39.39%	0.00%
Worked to create an inclusive and welcoming learning environment.	4.12	4.00	3.03%	9.09%	6.06%	36.36%	45.45%	0.00%
Overall, this instructor made a significant contribution to your learning.	3.97	4.00	3.03%	9.09%	12.12%	39.39%	36.36%	0.00%

**Please include the name of the TA/CA/Intern you are evaluating. What aspects of the TA's teaching contributed most to your learning? What could the TA modify to help you learn more? Please include any additional feedback for the TA/CA/Intern.**

Comments
several TAs were present at each lab section. The expectations for extra credit were shifted several times throughout quarter, which was frustrating. some ta s were more helpful than others in lab sections, but were definitely outnumbered by people with questions, made it hard to get help without feeling like an imposition.
There's a bunch, not sure who exactly is my TA even.
I didn't really go to that many TA office hours.
One of the TAs this quarter was Andrew. He was very helpful during the lab/TA office hour times, as he would try and explain how to conceptually approach problems I was struggling with. He always tried to make sure that everyone was understanding the material and provided helpful insight.
Taewan. He was very patient and helpful during lab sessions.
andrew
N/A
Avery Schoen. She was a very helpful TA. I went to every lab session, and she did a great job helping me work through any code I had trouble with without giving away the answer. She offered advice about different ways to attack the problem, which often helped me arrive at the solution. She was very helpful and influential in my learning of the material.
The TAs were helpful in answering posts on Ed Discussion; however, some were more organized and on top of the material we learned in class than others were.
Taewan, Ethan and Andrew were really helpful and facilitated our learning.

## The TA/CA or Intern. . .

	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Facilitated discussions that supported your learning.	3.77	4.00	0.00%	6.67%	20.00%	46.67%	13.33%	13.33%
Gave you useful feedback on your work.	3.92	4.00	0.00%	6.67%	13.33%	46.67%	20.00%	13.33%
Stimulated your interest in the core ideas of the class.	3.67	3.50	0.00%	6.67%	33.33%	20.00%	20.00%	20.00%
Challenged you to learn.	3.77	4.00	0.00%	6.67%	26.67%	33.33%	20.00%	13.33%
Helped you succeed in the class.	4.00	4.00	0.00%	6.67%	13.33%	40.00%	26.67%	13.33%
Was available and helpful outside of class.	3.92	4.00	0.00%	6.67%	20.00%	33.33%	26.67%	13.33%
Overall, this individual made a significant contribution to your learning.	3.62	4.00	0.00%	13.33%	26.67%	26.67%	20.00%	13.33%

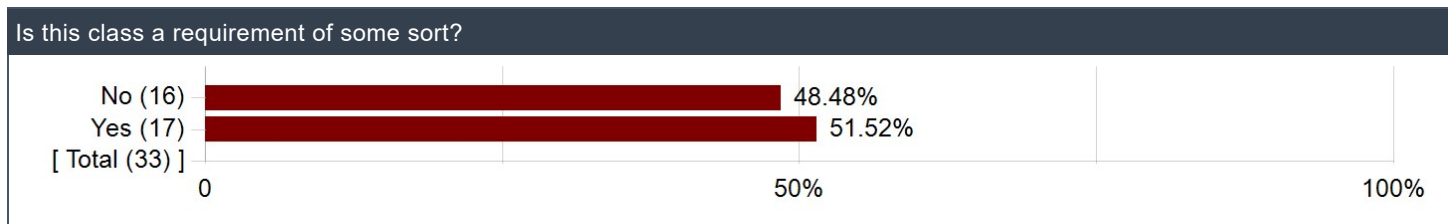
## How much did the following elements of the course contribute to your learning gains?

	Mean	Median	No Gain	A Little Gain	Moderate Gain	Good Gain	Great Gain	N/A
Laboratory Experience	3.22	3.50	10.00%	15.00%	20.00%	35.00%	10.00%	10.00%
Field Trips	2.00	2.00	0.00%	5.26%	0.00%	0.00%	0.00%	94.74%
Library Sessions	2.00	2.00	0.00%	5.26%	0.00%	0.00%	0.00%	94.74%
Review Sessions	3.55	4.00	0.00%	15.79%	5.26%	26.32%	10.53%	42.11%
Writing Seminars	2.00	2.00	0.00%	5.26%	0.00%	0.00%	0.00%	94.74%

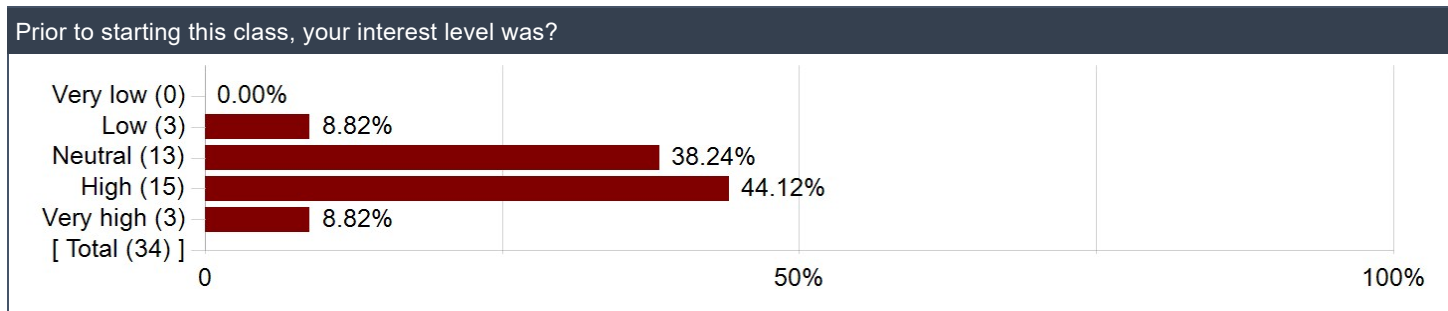
## Other course elements not mentioned above:

Comments
The lab sections were optional, and it would be more accurate to label them as "TA office hours"
N/A
n/a

## Is this class a requirement of some sort?

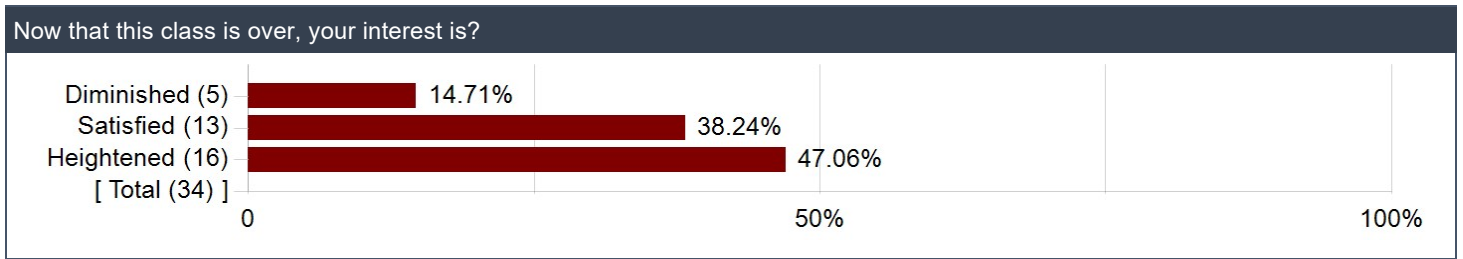


## Prior to starting this class, your interest level was?

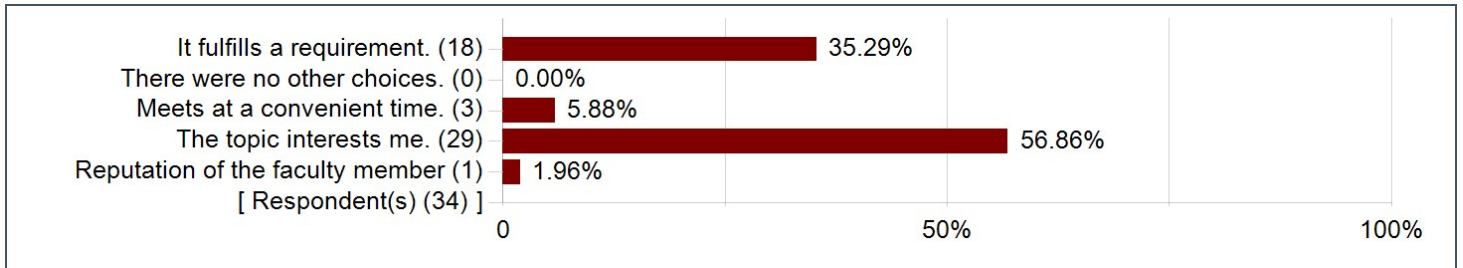




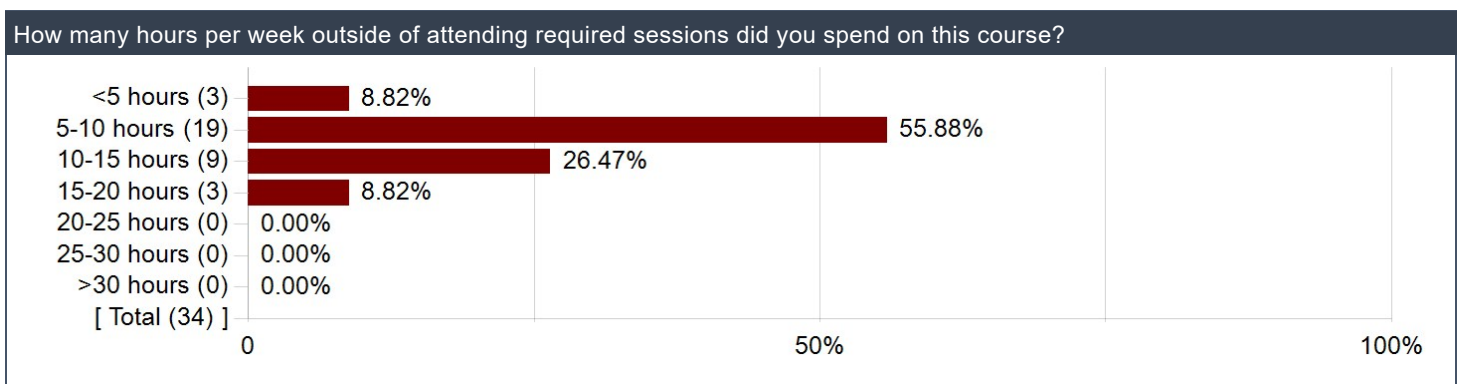
## Now that this class is over, your interest is?



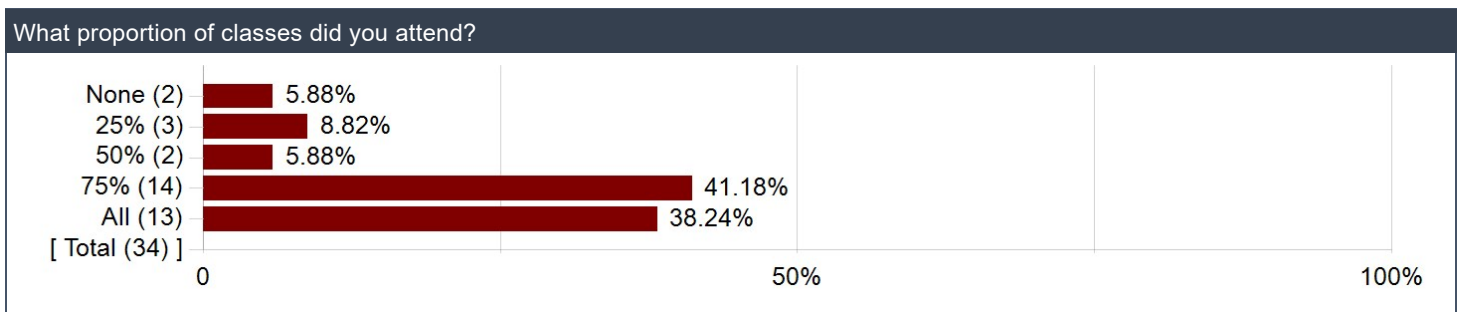
## Why did you choose to take this course? (Select all that apply)



## How many hours per week outside of attending required sessions did you spend on this course?



## What proportion of classes did you attend?



**Please comment on the level of difficulty of the course relative to your background and experience.**

Comments
I had no coding experience, but Python was pretty easy to pick up in the first 3 weeks. My biggest learning curve was with functions.
Although I didn't have any experience in either coding or statistics prior to this course, I found it to be manageable.
While I found the course to definitely be challenging at times as a beginner coder, I felt that the instructor did a great job of teaching the more computational aspects of the course in a way that was beginner-friendly. I feel like I learned a ton about how to use Python, but it never felt overwhelming or like the course was moving too fast. Regarding some of the more conceptual elements, I already had experience when it came to statistics and data analysis, so it felt fine to me.
No coding or stat background — definitely a learning curve, and can be super overwhelming as there is limited "intro" information
Difficulty was very reasonable as somebody who has seen a little bit of python before, and I thought that the class would be a great introduction for people that haven't used python in the past.
I had learned R before, so understanding programming was simple. Biggest challenge was understanding what the assignments wanted from me.
I had no coding experience prior to the class but the programming assignments were manageable especially in the beginning although they did get more challenging later on. As long as you start your homework early and use be resourceful, it is not too bad.
This course was difficult, as someone without any prior coding experience. It took a substantial amount of time to complete each homework assignment but became overall more manageable as I got more used to coding.
It wasn't that difficult given past class experiences during high school
Manageable for students with limited Python background.
I had no background in programming. The first two classes may seem intimidating, but later on, it is acceptable difficulty.
Mostly easy without coding background but does get harder after a few weeks
I had no experience with programming before joining the course, so for me the course was very hard.. The final was very difficult;.
moderate to hard
Medium
As someone with no previous coding experience, I thought the difficulty level of the coding aspects of the course was very reasonable, and with some work and trial and error, the problem sets all felt pretty doable.
So time-consuming.
N/A
I had experience in statistics (AP stats in high school) but no experience in coding/Python. I thought the class was challenging, but I expected it to be. I loved the challenge of it and it excited me every day. My only suggestion would be about the pace of the class that I made before.
I took 141 before this and this course wasn't difficult compared to 141. Of course they did have similarities, but I also just really enjoy data analysis more than software dev
As someone inexperienced in coding , the course was definitely challenging, but not impossible to do. Homeworks could be a struggle to complete but not impossible.
Doable
This course was very approachable as someone who has taken Stat 234 and CS 141.
This class is extremely DEMANDING. I spent hours and hours trying to solve just the hws. The ideas in the hw were not covered in class so I had to spend more hours searching on it
What was that final
Level of difficulty low but the grading was inconsistent and not clear at times.