

College Course Evaluations

ECON 21410: Computational Methods in Economics

Section 1 - Spring 2019

Instructor(s): Bejarano, Jeremiah; Boyarsky, Ariel

Number Enrolled: 24

Number of Responses: 13

The Course

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

- Monte Carlo sims and applications of python in economics
- Jeremy makes the course run like clockwork. I liked Markov Chains because they were applicable to Google's PageRank algorithms. I was familiar with all the Python used in this course coming in, and found the first couple weeks a bit slow. The course picks up though, and I appreciated the IPUMS data assignment and Monte Carlo lectures. I never really got around to understanding Maximum Likelihood Estimation, but it seems useful.
- Probably the biggest takeaway for me was developing a working knowledge of Python. We covered many different applications of computational techniques in economic research, including optimization, Monte Carlo, MLE, time series, and dynamic programming.
- How to solve various economic problems in practice using python and its different libraries(pandas, numpy). Might be the most real-life useful ECON course I have taken.
- Ability to work with a variety of python programs related to economics with a decent degree of fluency and also to implement economic models in python
- Basic Python! So useful
- Python coding, Python packages (Pandas, Numpy, matplotlib, etc.), translating economic models into code and simulating them
- Python techniques, applications of Python through economic and statistical modeling.
- Python and Econ
- Introduction to Python, elaboration on specific processes in Economics.
- Markov Chain, Maximum likelihood estimation, Scipy, Mccall research
- Learned a lot of useful libraries

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

- The lectures were all well organized; as were the homeworks. I always felt like I knew exactly what I was expected to learn from the time spent on task, which was much appreciated.
- I think the classroom should be inverted. Have students go through the lecture notes at home, and then use classroom time to let students work collaboratively on the assignments and ask questions. Assignments were way too long in my personal opinion.
- Lectures were good, they drew heavily from the QuantEcon project. The assignments corresponded closely with the lecture material, and usually involved walking through some sort of optimization problem or replicating results/visualizations. Both lectures and assignments were useful in developing an understanding of the course material.
- Assignments were the most useful since we had to code them ourselves, rather than just read through the already-written code.
- Lectures and homeworks were essential
- Doing the homework with guidance from Jeremy and Ari and with other people in my class was most helpful
- The assignments were just the right amount of challenging and key to understanding and learning the skills taught in class. Lecture notes that were posted on the class github were also very thorough and easy to understand.
- Lectures, assignments, everything was well done. Very thorough and interesting course.
- Lectures were highly informative: large emphasis on assignments.
- It really helps me to apply python in a practical setting
- lectures helped give me a general idea of how to complete the assignments

| | N/A | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|-----|-------------------|----------|---------|-------|----------------|
| This course challenged me intellectually. | 0% | 0% | 0% | 0% | 39% | 54% |
| I understood the purpose of this course and what I was expected to gain from it. | 0% | 0% | 0% | 0% | 15% | 77% |
| I understood the standards for success on assignments. | 0% | 0% | 0% | 0% | 23% | 69% |

| | | | | | | |
|---|----|----|----|----|-----|------------|
| Class time enhanced my ability to succeed in graded assignments. | 0% | 0% | 0% | 8% | 39% | 46% |
| I received feedback on my performance that helped me improve subsequent work. | 0% | 0% | 0% | 8% | 23% | 62% |
| My work was evaluated fairly. | 0% | 0% | 0% | 8% | 15% | 69% |
| I felt respected in this class. | 0% | 0% | 0% | 0% | 23% | 69% |
| Overall, this was an excellent course. | 0% | 0% | 0% | 0% | 31% | 62% |

Additional Comments about this course:

- This is a solid class that I would recommend to anyone who wants to get introduced to python or topics of how python is used in intermediary econometrics
- Probably one of the most useful courses you'll take if you want to go into Economics Research.
- Special thanks for using Python!
- This was the most practically useful economics class I've taken at UChicago.

I would recommend this course to:**highly motivated and well-prepared students**

| | |
|-----|----------|
| Yes | 12 / 92% |
| No | 1 / 8% |

anyone interested in the topic

| | |
|-----|----------|
| Yes | 11 / 85% |
| No | 2 / 15% |

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

- Professor Bejarano is very well organized and has a solid understanding of both the computational + economic aspects of the course.
- Jeremy is one of the best instructors I've had in terms of how willing he is to respond to e-mails and help students take early exams to make it to their internships/graduations. He's a very clear lecturer and he is able to explain complex topics in an amazingly accessible way. Truly 5 stars. Loved how he could code up formulas in class.
- Jeremy was a great instructor, super knowledgeable about both economics and CS, engaging, cared about students learning the material, and devoted a lot of time to the class and answering questions online. I thought the course was well thought-out and loved the wide range of topics we covered. He also did a good job of making the material accessible for people with minimal background in programming, while still keeping it interesting for people with more experience.
- The office hours and the assignments were the most helpful.
- Great job choosing lecture material and making good assignments. Also very available out of class
- First half of the class was amazing! I learned so much useful and interesting stuff, and Jeremy did a great job teaching so much python to people who don't have previous coding experience in just a week or two
- Jeremy's awesome! He lectures very clearly and always does his best to help students to understand class material and navigate the homework assignments both within and outside the classroom (he always stays after class to answer questions and replies to emails quickly and thoroughly). He's definitely one of the best professors I've had at this school and is extraordinarily dedicated to helping his students.
- Jeremy was excellent. He worked hard to make sure we understood the material, and he was well-respected, and respected his students. Very happy to learn with him.
- Amazing guy. So nice. Just the best honestly
- Professor Bejarano went highly in depth and was always open to discussion.
- He's very nice and helpful both in and outside class
- The lectures were useful in understanding the material

What could she/he modify to help you learn more?

- Nothing much, he is great.
- I think maybe cutting down the length of the homeworks. I spent most of my time doing them, and not nearly enough reviewing class notes.
- I would have liked to spend more time discussing interesting applications or the motivation behind what we're learning in class, instead of reading through every detail of the lecture notes, which can get a bit boring.
- Possibly, post the lecture notebooks prior to the lectures so it's easier to follow the material.
- Jeremy is not a good lecturer. Not engaging etc. make the class fun and engaging instead of reading off of a projected lecture
- The second half of the class was way too difficult for people with no coding experience, and I felt I only gained a superficial understanding of most concepts in the second half.
- Discussion during class (i.e. asking a question for the class to answer) could be smoother and lively (though I wouldn't know how to fix that).
- N/A, just do this again
- N/a
- I wish he could make the lectures more interesting, engage with students in a more interesting way, and just in general talk more energetically.
- It was hard to connect the theoretical things we learned in class with the actual programming, it would be useful to make it more explicit

| | N/A | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|-----|-------------------|----------|---------|-------|----------------|
| Organized the course clearly. | 0% | 0% | 0% | 0% | 15% | 77% |
| Presented lectures that enhanced your understanding. | 0% | 0% | 0% | 8% | 23% | 62% |
| Facilitated discussions that were engaging and useful. | 8% | 8% | 0% | 8% | 31% | 39% |
| Stimulated your interest in the core ideas of the course. | 0% | 0% | 0% | 0% | 31% | 62% |
| Challenged you to learn. | 0% | 0% | 0% | 0% | 31% | 62% |
| Helped you gain significant learning from the course content. | 0% | 0% | 0% | 0% | 15% | 77% |
| Was available and helpful outside of class. | 0% | 0% | 0% | 0% | 23% | 69% |
| Motivated you to think independently. | 0% | 0% | 0% | 0% | 23% | 69% |
| Worked to create an inclusive and welcoming environment. | 0% | 0% | 0% | 0% | 23% | 69% |
| Overall, this instructor made a significant contribution to your learning. | 0% | 0% | 0% | 0% | 23% | 62% |

The Teaching Assistant, Course Assistant, Intern

Did this class include instruction by a TA, CA or Intern?

| | |
|-----|----------|
| Yes | 10 / 77% |
| No | 1 / 8% |

What aspects of the TA's teaching contributed most to your learning?

- His problem sessions to debug aspects of the homeworks were invaluable. He cares a lot about his students and frequently stayed past the end of the TA session to answer questions on until everyone felt they were in a good place for the assignment. I think the only time he didn't stay past the end of the TA session was when he had a plane to catch.
- Ari did a good job in the TA sessions. His review office hours were poorly aligned with my schedule though, and I never found the time to make them.
- His TA sessions were useful and covered several topics we didn't go over in class, including introductions to R and SQL.
- Ari was so helpful. Could not have done the class without him
- Ari was very nice and helpful, especially with homework assignments.
- Willingness to help
- He's very helpful during office hours

What could she/he modify to help you learn more?

- N/A
- I don't know who writes the assignments (Jeremy or Ari?), but I think sometimes the question is so open-ended that it's not clear how to even begin answering a question. The first few homeworks had nice templates you could use, but these quickly disappeared and I found myself spending a ton of time struggling to implement/debug some library function I hadn't used before.
- He already did a lot of work, but it would have been cool if he had a second set of office hours during the week. The course was a lot of work that was very difficult so it would have been nice to get his feedback both at the beginning and end of working on a project
- Felt like he went through material at a bit of a faster pace, which was hard to follow at times. Very friendly though.

The TA/CA or Intern...

| | N/A | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|-----|-------------------|----------|---------|-------|----------------|
| Facilitated discussions that supported your learning. | 31% | 0% | 0% | 15% | 8% | 23% |
| Gave you useful feedback on your work. | 8% | 0% | 0% | 8% | 23% | 39% |
| Stimulated your interest in the core ideas of the course. | 15% | 0% | 0% | 8% | 15% | 39% |
| Challenged you to learn. | 15% | 0% | 0% | 8% | 23% | 31% |
| Helped you succeed in the class. | 8% | 0% | 0% | 8% | 0% | 62% |
| Was available and helpful outside of class. | 8% | 0% | 0% | 8% | 0% | 62% |
| Overall, the TA/CA made a significant contribution to your learning. | 8% | 0% | 0% | 15% | 15% | 39% |

Additional feedback to the TA/CA/Intern:

- Nice person and great instructor!

Additional Course Elements

Did this course include special design elements (labs, field trips, extra sessions, writing seminars)?

| | |
|-----|----------|
| Yes | 2 / 15% |
| No | 10 / 77% |

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

| | NA | No Gains | A Little Gain | Moderate Gain | Good Gain | Great Gain |
|-----------------------|-----|----------|---------------|---------------|-----------|------------|
| Laboratory Experience | 46% | 0% | 0% | 8% | 0% | 0% |
| Field Trips | 54% | 0% | 0% | 0% | 0% | 0% |
| Library Sessions | 54% | 0% | 0% | 0% | 0% | 0% |
| Review sessions | 46% | 0% | 0% | 0% | 8% | 8% |
| Writing Seminars | 54% | 0% | 0% | 0% | 0% | 0% |

Other course elements not mentioned above:

- The labs were not necessary, but usually interesting.

Student Information**Is this class a requirement of some sort?**

| | |
|-----|---------|
| Yes | 9 / 69% |
| No | 4 / 31% |

Prior to starting the class, my interest level was?

| | |
|-----------|---------|
| Very Low | 0 / 0% |
| Low | 0 / 0% |
| Neutral | 2 / 15% |
| High | 6 / 46% |
| Very High | 4 / 31% |

Now that the course is over, my interest is?

| | |
|------------|---------|
| Diminished | 0 / 0% |
| Satisfied | 4 / 31% |
| Heightened | 8 / 62% |

Why, primarily, did you take this course over others?

| | |
|----------------------------------|---------|
| It fulfills a requirement | 9 / 69% |
| There were no other choices | 1 / 8% |
| Meets at a convenient time | 2 / 15% |
| The topic interests me | 8 / 62% |
| Reputation of the faculty member | 3 / 23% |

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

| | |
|------------|---------|
| < 5 Hours | 0 / 0% |
| 5-10 Hours | 5 / 39% |
| 10-15 | 5 / 39% |
| 15-20 | 0 / 0% |
| 20-25 | 2 / 15% |
| 25-30 | 0 / 0% |
| > 30 | 0 / 0% |

What proportion of classes did you attend?

| | |
|------|---------|
| None | 0 / 0% |
| 25% | 0 / 0% |
| 50% | 0 / 0% |
| 75% | 4 / 31% |
| All | 8 / 62% |

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

- Significantly easier than the CMSC 120s, but slightly harder than the average econ class. It hit the right balance.
- If you've done any Python programming with Numpy/Pandas, you'll be fine.
- Not very difficult as a fourth-year econ major who had previously taken some CS classes. However, the psets were fairly time-consuming, and the exams were a test of your coding skills under pressure which was a bit stressful.
- Easier side for ECON w/ Data Science major.