

# Econometrics

ECO 321

Department of Economics

Stony Brook University

FALL 2025

## **General Information:**

**Instructor:** Aneesh Arora

**Office:** SBS N618

**E-mail:** Aneesh.arora@stonybrook.edu

**Website:** <https://econaneesharora.com/>

**Office Hours:** Monday 10 AM - 12:00 PM by appointment or through Zoom

<https://stonybrook.zoom.us/j/92127361117?pwd=qmFOIsK4zQCoLbMNKRat59D4i9zjRQ.1>

*(Please feel free to email me or schedule a Zoom meeting during the week; you do not need to wait for my scheduled office hours if you need help)*

**Graduate TA:** Xin Liu

**Office:** SBS N604

**E-mail:** xin.lu.2@stonybrook.edu

**Office Hours:** Mondays 2:50PM- 4:50 PM by appointment or through Zoom.

<https://stonybrook.zoom.us/j/96912227961?pwd=QzCguSl4J0LTuaMqDqBawSSNcNMQnz.1>

**Lectures:** Mondays/Wednesdays from 5:00PM - 6:20PM, Melville Library **E4330**

**Recitation:** R03 Mondays from 6:30 PM - 7:25 PM, Melville Library **N4072**

R04 Wednesdays from 6:30 PM - 7:25 PM, Melville Library **N4006**

**Undergraduate inquiries:** Undergraduate coordinator is Victoria Judd: 631-632-7540, SBS Room 601-S, or [ugeconomics@stonybrook.edu](mailto:ugeconomics@stonybrook.edu)

**Prerequisite(s):** C or higher in ECO 320 or AMS 310; C or higher in ECO 108.

You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken any anti-requisite courses. Lack of prerequisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed.

If you find that you do not have the course prerequisites, it is in your best interest to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will ensure that spaces become available for students who require the course in question for graduation.

## **Course Description:**

This course is an **introduction to the theory and application of statistics to economic problems**. It focuses on the techniques used in empirical research, with a particular emphasis on **intuitive understanding** and interpretation.

Students will learn how to estimate and interpret economic models, understand the assumptions behind regression analysis, and critically evaluate empirical research. **Problem sets will introduce real-world applications** and teach you the **fundamentals of statistical programming**.

We will also briefly touch on the **practical aspects** of applying what we learn to real data and performing basic regression analysis. To do so, students will be introduced to **basic coding in Python** for data manipulation, visualization, and econometric analysis. No prior coding skills are required, but they are beneficial.

**Recitations** will be devoted primarily to reviewing basic math skills and working through homework problem sets to reinforce concepts covered in lecture.

## **Textbook(s) and Course Materials:**

**Textbook:** While a textbook is not required, I highly recommend reading one of the following for a deeper understanding:

- Introductory Econometrics: A Modern Approach by Jeffrey M. Wooldridge
- Introduction to Econometrics by James H. Stock and Mark Watson

**Slides/Handouts:** I will use slides based on the Stock and Watson textbook, which will be available on Brightspace.

**In-Class Notes:** Taking good notes during class is crucial for success, as they will cover key examples and concepts essential for the exams.

**Recitations:** During recitations, students will go over practice problems and homework problem sets with the teaching assistant that will help tremendously with preparing for the assignments, midterms and the final project.

## **Course Schedule:**

*(This schedule is tentative and may be adjusted based on the class'pace to ensure a thorough understanding of the material).*

Week	Topic
Week 1: 08/25 – 08/29	Introduction and Statistics review
Week 2: 09/01 – 09/05	Labor day break and Simple Linear Regression
Week 3: 09/08 – 09/12	Simple Linear Regression
Week 4: 09/15 – 09/19	Simple Linear Regression
Week 5: 09/22 – 09/26	Introduction to Python and Multiple Regression
Week 6: 09/29 – 10/03	Multiple Regression
Week 7: 10/06 – 10/10	Project discussion/Midterm Review
Week 8: 10/13 - 10/17	Fall Break and Midterm
Week 9: 10/20 – 10/24	Inference/Hypothesis testing
Week 10: 10/27 – 10/31	Inference/Hypothesis testing
Week 11: 11/03 – 11/07	Asymptotics and Dummy variables
Week 12: 11/10 – 11/14	Dummy variables and IV Regression
Week 13: 11/17 – 11/21	IV Regression
Week 14: 11/24 – 11/28	Second Midterm review and Thanksgiving break
Week 15: 12/01 – 12/05	Second Midterm.

***PLEASE NOTE THAT I WILL DO MY BEST TO STICK TO THIS SCHEDULE BUT I WILL NOT TRADE-OFF STUDENT LEARNING FOR SAVING TIME.***

### **Assessments and Grading:**

*All assessments will be based on the lecture material. The breakdown of the grades are as follows:*

Assessment	Description	% of Grade
Assignments (x3-4)	Practice problems from lectures and recitations.	20%
Attendance/Quizzes	Students are expected to attend at least 80% of the lectures. Attendance may also be complemented by active participation in class and/or regular attendance at recitations. I may give surprise quizzes; if so, they will carry substantial weight in the attendance grade.	10%
Midterm 1	Covers everything we do <b>before</b> the midterm.	25%
Midterm 2	NOT CUMULATIVE and covers everything after midterm 1.	25%
Final Project	You will be given a project after the first midterm. I will provide more details about the project during the class.	20%

### **Examinations:**

You may use a calculator during the exam, as long as it does not have internet access. You may not share calculators during an exam. Any and all incidents of academic dishonesty, cheating, etc. on exams will be taken to the appropriate administration official.

### **Missing Examinations:**

If you do not come to a midterm exam without justification or a valid reason, you will get a zero in that exam. No make-up exams will be offered. If you miss both midterms, you will not be able to pass the course, and will have to retake it in a later semester. Exams will not be returned. However, you can always come during office hours to discuss your grades and how you can improve on the material.

### **Assignments**

Each assignment will consist of questions related to the relevant topics. Students are encouraged to work in groups for the assignments, but students must turn in individual submissions.

### **Submitting Assignment:**

Each assignment should be uploaded onto Brightspace. Please adhere to the following procedures:

- Assignments should be submitted by **11:59PM of the due date**. No late submissions will be accepted!
- Students should upload each assignment as **one single pdf document**. Alternate file formats (JPG, JPEG, PNG, etc.) will not be accepted!
- If the homework involves a code file, submit the executed Jupyter notebook file (.ipynb) with results as a separate file.

### **Attendance**

Your attendance grades will be based on your attendance in both lectures and recitations. Attendance during recitation will be recorded via attendance sheets that will be administered randomly throughout the semester. No attendance will be taken on days surprise quizzes are conducted.

**Quizzes:** Surprise quizzes will span around 15-20 min and will be in class. It may be Multiple Choice Questions or short answers.

### **Grading Scale:**

The top 10% of students get an A, the next top 10% of students get an A-, the next top 10% get a B+, and so on. The only exception is 20% of students get a B.  
(This can change depending on how the overall class performs)

### **AI POLICY:**

**Students must obtain pre-approval for any use of AI tools. Unauthorized use of AI on assignments will be considered academic dishonesty.**

If you use AI tools in preparing your work, you must disclose:

- Which tool(s) you used.
- How you used them.

Acceptable uses include brainstorming research ideas and polishing self-written text. Generative AI may not be used to replace student reasoning or analysis, or to complete homework problems.

**Tips on How to Be Successful in this Class:**

Students in this class should understand the level of autonomy and self-discipline required to be successful:

- Attend lectures and recitations.
- Complement the lectures and recitations with reading the textbook.
- Rectify misunderstandings by reaching out to the instructor or teaching assistant via office hours or email.
- Make it a daily habit to ensure you have seen everything posted to help you succeed in this class.
- Connect with others. Try forming an online study group and meet on a weekly basis for study and peer support.
- **Do not be afraid to ask questions.** If you have questions or are struggling with a topic, contact your instructor(s) and/or teaching assistant(s). We are here to help!

**Student Accessibility Support Center Statement:**

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at [sasc@stonybrook.edu](mailto:sasc@stonybrook.edu). They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website:

<https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guidepeople-physical-disabilities> and search Fire Safety and Evacuation and Disabilities.

**Academic Integrity Statement:**

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at [http://www.stonybrook.edu/commcms/academic\\_integrity/index.html](http://www.stonybrook.edu/commcms/academic_integrity/index.html)

**Important Note:** Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

## **Critical Incident Management:**

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

## **COURSE POLICIES:**

### **Understand When You May Drop This Course:**

If you need to drop or withdraw from the course, it is your responsibility to be aware of the tuition liability deadlines listed on the registrar's [Academic Calendar](#). Before making the decision to drop/withdraw you may want to [contact me or] refer to the University's policies:

- [Undergraduate Course Load and Course Withdrawal Policy](#)
- [Graduate Course Changes Policy](#)

### **Incomplete Policy:**

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible. You should also read the University's policies that apply to you:

[Undergraduate Bulletin](#)  
[Graduate Bulletin](#)

### **Course Materials and Copyright Statement:**

Course material accessed from Brightspace, Zoom, Echo 360, VoiceThread, etc. is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.