San José State University
Social Sciences/Economics
ECON 103, Introduction to Econometrics, Section 1, Fall, 2019

Course and Contact Information

Instructor:	Dr. Sanchita Mukherjee
Office Location:	DMH 214
Telephone:	
Email:	sanchita.mukherjee@sjsu.edu
Office Hours:	M 2pm-3pm and by appointment
Class Days/Time:	M W 10:30am – 11:45am
Classroom:	DMH 161
Prerequisites:	ECON 3 or its equivalent

Course Description (Required)

This course is an introduction to applying statistical techniques to economic issues. The course will cover practical methods for organizing and analyzing economic data, testing economic hypotheses, and measuring economic relationships. Regression analysis is the main empirical method and topics we will cover include basic statistical and probability theory, simple and multiple regression models, dummy variables, multicollinearity and heteroskedasticity.

Course Learning Outcomes (CLO) (Required)

The five specific Course Learning Objectives for ECON 103 include:
CLO 1.) Explain core methods in econometrics and identify correct procedures. CLO 2.) Discuss advanced econometric topics at a conceptual level. CLO 3.) Access data and use computer software to estimate econometric models. CLO 4.) Interpret econometric models estimated with computer software. CLO 5.) locate data, format it to be read by regression software, and develop, estimate and interpret an original econometric model to shed light on a problem of social importance.

Upon successful completion of this course, students will be able to:

1) specify assumptions, formulate and estimate appropriate models, interpret the results and test their statistical significance
2) write a good quality undergraduate term paper in economics using the econometric methods taught in this class

Required Texts/Readings (Required)

Textbook

Introductory Econometrics: A Modern Approach by Jeffrey M. Wooldridge (6th Edition)
ISBN-13: 978-1111531041
ISBN-10: 1111531048

It is available at any of the online outlets (Amazon, for example). Used copies are fine, and the 3rd edition or above should be sufficient. Also, avoid getting the international edition, since it is different.

Other technology requirements / equipment / material

The class will use a computer program called STATA to gain practical experience in econometrics. The program will have limited availability on campus, though a small version of the program suitable for the course will be available for a small price. Details regarding how to purchase the program will be forwarded by email.

Course Requirements and Assignments (Required)

1) Problem Sets (40% of your grade, 10% each):

There will be 4 problem sets due, each of which involves empirical analysis. The data for the problem sets will be posted on Canvas. Please hand in assignments before class on the day they are due. Assignments handed in after answers are distributed will receive no credit.

2) Term paper/Project (20% of your grade)

One major goal of this course is to provide you with skills and knowledge of both the theory and the practical tools necessary to start your own research. The best way to achieve this goal is to write an original research paper. The paper will discuss why you chose the topic, economic model, econometrics specification, data and empirical finding. To avoid last minute chaos, a proposal (one page long) is required by **October 14, 2019**. The proposal should include why the topic is interesting, how you will obtain data, and how you estimate equations of interest.

Paper Structure:
I. Title page.
II. Abstract. This should be less than 50 words and summarize the topic, methodology, and main findings. It should appear on your title page.
III. Introduction. This section should state the nature and objectives of the project along with a brief review of any relevant literature. Make sure to provide some background or motivation for why your project is interesting.
IV. Description of the model. The model should be clearly stated and any equations carefully explained. You should write out the econometric model you plan to estimate, and discuss the expected impact of the exogenous variables in your model.
V. Data description and model estimation. You should use the techniques developed in class to analyze your data and estimate your model. Make sure to describe the dataset you are using by providing summary statistics of important variables. Your results should be reported and discussed in this section and could include: parameter estimates, standard errors, t-statistics, F-statistics, R-squared, tests for autocorrelation, heteroskedasticity, and possible multicollinearity, as appropriate.
VI. Conclusion. Review the major findings as well as possible extensions for future work. Make sure to mention any limitations of your approach as well as alternative explanations of your results. Policy implications, if any, could also be included in this section.
VII. Tables and graphs. Your paper must include at least one table and one graph. The tables and graphs should be well-labeled and accessible to the reader—do not merely print out your regression output with cryptic variable names.
Appendix If you have a lot of regression results or other details in your theoretical/statistical model that merit to be included yet, they may distract the reader, you may include them in an appendix.

3) Exams:

There are 2 in-class Midterm exams (20% total, 10% each) and 1 comprehensive final exam (20% of your grade). All of these exams will be multiple choice problems.

Grading Information (Required)

Your grade will be based upon:

Assignments	% of your grade	Due Dates
4 Problem Sets	40% total, 10% each	PS 1: Mon 9/9 PS 2: Wed 9/25 PS 3: Wed 10/23 PS 4: Mon 11/18
Midterm 1	10%	Wed, 10/2 (in class)
Midterm 2	10%	Wed, 11/6 (in class)
Term Paper	20%	Wed, 12/4 (submit at the end of the class)
Final Exam	20%	Thu, 12/12, 9:45 am – 12 noon (in class)

You will find the Final Exam schedule for Fall 2019 at:
http://info.sjsu.edu/static/catalog/final-exam-schedule-fall.html

There will be no makeup exams. Please make your travel plans accordingly.

Classroom Protocol

In consideration to your classmates and me, be on time, stay for the duration of the class and avoid any disruptive activities within the classroom (cell phones, side conversation, newspaper reading, etc.)

University Policies (Required)

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor's permission to record the course.

- "Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings

are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material."
    - It is suggested that the green sheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
    - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.

- "Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent."

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Integrity Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

In 2013, the Disability Resource Center changed its name to be known as the Accessible Education Center, to incorporate a philosophy of accessible education for students with disabilities. The new name change reflects the broad scope of attention and support to SJSU students with disabilities and the University's continued advocacy and commitment to increasing accessibility and inclusivity on campus.

ECON 103 / Intro to Econometrics, Fall 2019, Course Schedule

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/21	Introduction, Syllabus, Basics
2	8/26	Review of Statistical Concepts, What is Econometrics? Understanding Key Terms
2	8/28	Review of Statistical Concepts, Basic Probability
3	9/2	Labor Day (No Class)
3	9/4	Probability and distribution
4	9/9	Simple Linear Regression (Intro, real world example, causality, data, an example) **Problem Set 1 Due**
4	9/11	Simple Linear Regression with One Regressor (Assumptions with Examples)
5	9/16	Least Squares Regression (Derivations)
5	9/18	Simple Regression Model (Diagnostic Measures, interpreting coefficients in non-linear regressions)
6	9/23	Simple Regression Model (Biased or Unbiased, Estimating Variance)
6	9/25	Running Regression in STATA **Problem Set 2 Due**
7	9/30	Review
7	10/2	**Midterm 1 (in class)**
8	10/7	Inference
8	10/9	Inference
9	10/14	Goodness of fit, R-squared **Term Paper Proposal Due**
9	10/16	Omitted Variable Bias => Multivariate Regression
10	10/21	Intro to Multivariate Regression
10	10/23	Inference **Problem Set 3 Due**
11	10/28	Multivariate Regression: Linear Combinations of Parameters
11	10/30	Multivariate Regression: Multiple Restrictions, Examples
12	11/4	Review
12	11/6	**Midterm 2 (in class)**
13	11/11	Nonlinear regression in STATA
13	11/13	Quadratics, Dummy Variables

Week	Date	Topics, Readings, Assignments, Deadlines
14	11/18	Interaction Terms, Endogeneity **Problem Set 4 Due**
14	11/20	Panel Data
15	11/25	Panel Data
15	11/27	Panel Data
16	12/2	Handling Panel Data in STATA
16	12/4	Final Review **Term Paper Due**
17	12/9	Final Review
Final Exam	**12/12**	**DMH 161, 9:45 am – 12 noon**