## San José State University

#### **Course and Contact Information**

Instructor: Dr. Sanchita Mukherjee

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Office Hours: M 2pm

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 (6

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3) Exams:

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- o 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.
- o 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.

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# **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) <b>Problem Set 1 Due</b>	
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	ı	

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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

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