Economics 103,   *Introduction to Econometrics*, Section 1, SP 15

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Office Hours** / Location:	Tuesday and Thursdays, 3 - 4:00p.m./ DMH 131
Lecture Room/ Day/Time:	DMH 358 / Tuesdays and Thursdays / 1:30 to 2:45p.m.
Lab Rooms/ Days/Time:	*Stata Lab*: DMH 236 / Tuesdays and Thursdays / 3:00 to 4:15p.m. *Laptop Lab*: DMH 358 / Tuesdays and Thursdays / 3:00 to 4:15p.m. *R Lab*: DMH 339 / Tuesdays and Thursdays / 3:30 to 4:45p.m.
Prerequisites:	Econ 3 or equivalent

*Email is my preferred form of communication. ** If I am not in my office during office hours, it is because I am in one of the three labs; I will post notes on my door regarding my whereabouts. Also, during final exam week, office hours are by appointment only.

Faculty Web Page and Canvas

Canvas is the Learning Management System at SJSU and is where you will be submitting assignments and I will make announcements. Please be sure you can log in and you are receiving my announcements by email. See my Econ 1B syllabus for information on accessing Canvas, or click https://sjsu.instructure.com/ .

Course Description

This course is designed to give students marketable skills in core econometric analysis, while providing a survey of advanced topics in econometrics. A key structural feature of this class is designed to accomplish this: both midterms focus intensely on a relatively small amount of important topics, including estimating simple and multiple regression models, conducting hypothesis tests, and nonlinear models, while the final exam focuses rather lightly on a wide range of topics, including panel data methods, qualitative choice models, experiments and quasi-experiments, instrumental variables, and time series topics. Lectures are Tuesdays and Thursdays from 1:30 to 2:45p.m., followed by a computer lab. Students can choose to attend one of three labs: The "STATA lab", "R lab" or "Laptop lab". The first two meet in the computer labs listed above whereas the "Laptop lab" meets in the classroom, at the times indicated.   During the lab time students will complete assignments that will be announced in class and on Canvas, and which are usually due on Thursdays.

Course and Program Learning Objectives (CLOs and PLOs)

This course emphasizes two of the five Program Learning Objectives for our BA and BS programs: *research methods* (ECON PLO3) and *area of specialization: quantitative methods* (ECON PLO4d). The five specific Course Learning Objectives for ECON 103 include: CLO1.) Explain core methods in econometrics and identify correct procedures. CLO2.) Discuss advanced econometric topics at a conceptual level. CLO3) Access data and use computer software to estimate econometric models. CLO4) Interpret econometric models estimated with computer software. 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. CLOs 1, 2 and 4 will mainly be assessed through exams, while CLOs 3 and 5 will mainly be assessed through "lab" assignments.

Required Textbook

Stock, J.H. & Watson, M.W. 2011. Introduction to Econometrics. Pearson 3rd ed. (*Ask me about other editions*)

Recommended Textbook

Angrist, J. D. and Pischke, J. 2014. *Mastering Metrics,* Princeton University Press, Princeton, N.J. (You can download the Introduction and Chapter 1 here: http://press.princeton.edu/titles/10363.html)

Required Computer Software

At a minimum, all students should have installed on their home machines 1.) A spreadsheet program (preferably MS Excel or Open Office Calc) and 2.) A statistical software package. For statistical software packages, I recommend you purchase (through www.stata.com/order/new/edu/gradplans) a six-month license for Small Stata 13 for $35. Another option is to install GRETL or R, both of which are free. GRETL is easy to use but R is more widely used in industry. From the standpoint of succeeding in this class, STATA is preferred, mainly because the textbook publisher provides presentation slides and sample code for STATA but not for GRETL or R. However, I will try to accommodate all three of these programs because students have different constraints and goals for this course. For more information see www.sjsu.edu/economics/computerlabs .

Assignments

Total points on all assignments sum to 100.

Assignment	Points	Due Dates
Midterm and Final Exams	**55** (20, 20 and 15 points)	2/24, 3/19 and 5/21
Weekly Lab Assignments	**15** (1-2 points each)	Weekly, usually on Thursdays
Lecture Notes	**10**	2/19 and 3/17
Pop Quizzes	**10**	Unannounced
Final Project	**10**	5/21

Below you will find an explanation for each of these assignments.

Exams

There will be two midterms and one final exam. Students are not allowed the use of any aids on the midterms, although they may use their notes during the final. All of these exams will be multiple choice exams. One-third of the questions will be similar to the Practice Quiz questions found here: http://wps.aw.com/aw_stock_ie_3 . Another third of the exam questions will be multiple choice questions based on the Weekly Lab Assignments. The final third will be based on Lecture Notes submitted by students.

Weekly Lab Assignments

The Lab Assignments are designed to give you experience using computer software and managing data. In addition, hands on experience with the data will reinforce the statistical and econometric theory and methods and thus help to prepare you for taking the exams. This is especially true given one third of the exam questions are based upon the weekly lab assignments. Points on these Lab Assignments are easy to earn; if you work on them during lab and submit them on time, you will earn full points. However, if you skip lab you will have to complete the weekly homework assignments on your own before the deadline. Late assignments will not be accepted. These weekly assignments are due at 11:59p.m. every Thursday from now until May 8, except during Spring Break, and Descriptions for individual assignments can be found on Canvas.

Lecture Notes

Taking notes during lectures is not merely a good idea, it is essential to engaging with and learning the material. Therefore, students are required to submit typed class notes before each midterm. After taking careful notes by hand in class (students may not generally use laptops or similar devices during lecture) students will type them up using a word processing program of their choice, and submit them to Canvas as a PDF or DOC file *before class* on 2/19 and 3/17. (You may think that this would be easier if you just scanned in the hand written notes and you would be correct, but requiring students to type their notes forces them to recall the discussion from class, serves as a valuable study aid, and provides the source for 1/3rd of all exam questions.)

Pop Quizzes

Pop Quizzes will be based on the required readings and other homework assigned in class that does not require a submission. The readings listed as "Required Readings" on the Course Schedule (see next page) are not optional. To make sure students stay on top of reading assignments, I will give about 6 pop quizzes at various, unannounced times throughout the semester, and drop your lowest score (so you can miss up to one without penalty.) The other homework assignments include tasks such as downloading data, installing software, etc. Although you will not be submitting anything directly, you may be tested on these tasks on a Pop Quiz.

Final Project

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. Your submission must include: 1.) a carefully considered statement of the research question, not to exceed one paragraph in length, 2.) variable descriptions, summary statistics and regression results tables, and 3.) a three-paragraph interpretation of the results. In your interpretation, you must critically evaluate your models, based on the discussion in SW Ch 9. In addition, there are some constraints on the models you must develop. You must present six specifications in your table of regression results. One of these specifications must contain at least four distinct variables (e.g a polynomial specification of one variable does not count as more than one), and two of these four variables must be continuous. Finally, you must estimate at least one nonlinear model, i.e. include polynomial, logarithmic, and/or interaction variables.

Course Schedule

Date	Topic of lecture	Required Readings**
22-Jan*	Intro to Course	
27-Jan	Intro to Empirical Economic Research	SW Ch 1, and Angrist and Pischke, Introduction
29-Jan*	Probability and Statistics	SW Sections 3.4 & 3.5 (review Ch 2 & 3 as needed)
3-Feb	Mastering Inference	Angrist and Pischke, Chapter 1 Appendix
5-Feb*	Mastering Metrics and Randomized Trials	Angrist and Pischke, Chapter 1
10-Feb	Simple Linear Regression	SW Sections 4.1-4.3
12-Feb*	Simple Linear Regression	SW Sections 4.4-4.6
17-Feb	Inference for Simple Linear Regression	SW Sections 5.1-5.3
19-Feb*, ***	Inference for Simple Linear Regression	SW Ch 5.4 & 5.7
24-Feb	**Midterm**	**Covers SW Ch 1, Sec 3.4-3.5, Ch 4, Sec 5.1-5.4 & 5.7, & Angrist and Pischke, Introduction and Chapter 1**
26-Feb*	Multiple Regression	SW Sections 6.1-6.4
3-Mar	Multiple Regression	SW Sections 6.5-6.8
5-Mar*	Inference for Multiple Regression	SW Ch 7.1-7.2
10-Mar	Inference for Multiple Regression	SW Ch 7.5-7.7
12-Mar*	Nonlinear Regression Models	SW Ch 8.1-8.2
17-Mar***	Nonlinear Regression Models	SW Ch 8.3-8.5
19-Mar*	**Midterm**	**Covers SW 6-8**
24-Mar	*Spring Break – No Class*	
26-Mar	*Spring Break – No Class*	
31-Mar	*Caesar Chavez Day – No Class*	
2-Apr*	Critical Evaluation of Econometric Models	SW Ch 9
7-Apr	Critical Evaluation of Econometric Models	SW Ch 9
9-Apr*	Panel Data Methods	SW Ch 10
14-Apr	Panel Data Methods	SW Ch 10
16-Apr*	Categorical Dependent Variables	SW Ch 11
21-Apr	Categorical Dependent Variables	SW Ch 11
23-Apr*	Instrumental Variables	SW Ch 12
28-Apr	Instrumental Variables	SW Ch 12
30-Apr*	Experiments and Quasi-Experiments	SW Ch 13
5-May	Experiments and Quasi-Experiments	SW Ch 13
7-May*	Time Series Methods	SW Ch 14
12-May	Time Series Methods	SW Ch 14
21-May	**Final Exam** Thursday, May 21 at 12:15p.m.	**Covers SW Ch 9-14**

*Indicates lab assignment due to Canvas by 11:59p.m. ** Required readings must be completed *before* the start of class.

***Indicates lecture notes due to Canvas by 1:30p.m. (Although not indicated on this schedule, notes are also due on 5/19.)

Reference for further reading

To find examples of econometric research, consult the textbook's bibliography. To see many more examples of applied research, search the JSTOR database. http://library.calstate.edu/sanjose/databases/alphabetical?alpha=J, limit your search to Econ journals, and search using a keyword in your area of interest.

Course-Specific Policies

- Students are not allowed the use of laptops during lectures. They distract you and others. At times we may discuss computer software and you may be allowed the use of it for that purpose only, but unless this is announced the rule is NO LAPTOPS.

- The Weekly Lab Assignments must be your own work. You may discuss the problems with your classmates but each student must produce their own results and answers.

University Policies

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/.

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. 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 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.