Econ 312

Introduction to Econometrics

Tues & Thurs, 2:10-4:00pm, HSS 147

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The syllabus and schedule are subject to change. If you are absent from class it is your responsibility to check online and with your peers about any announcements you may have missed.

Course Description: This class is meant to extend your data analysis and statistics toolbox to encompass such topics as simple linear regression, multiple linear regression, regression inference, nonlinear models, heteroskedasticity, and time series analysis. The tools and software demonstrated can be applied toward future academic research or occupations that involve data analysis. Since this is the first class in the econometrics sequence it will also focus on the underlying mathematics of the concepts studied. Although some of what we will cover is automated by statistical software, it is very important to establish a firm theoretical foundation so that students are aware of which tools to use in which situations, and the tacit assumptions that are made when using them.

Prerequisite: ECON 311 or MATH 124

Credit Hours: 3

Text: *Introduction to Econometrics*, Christopher Dougherty, Oxford University Press, USA; 4th Edition (2011), ISBN-13: 978-0199567089

Grade Makeup

Homework	20%
Project	20%
Exam 1	20%
Exam 2	20%
Final Exam	20%

Final Letter Grades

100 - 92.00	A	76.00 - 78.99	C+
89.00 - 91.99	A-	72.00 - 75.99	C
86.00 - 88.99	B+	69.00 - 71.99	C-
82.00 - 85.99	B	66.00 - 68.99	D+
79.00 - 81.99	B-	62.00 - 65.99	D
		0.00 - 61.99	F

Attendance:

While attendance is not regularly taken you are expected to come to every class. The material in each period builds off of the previous material, so missing even one class can make it very difficult to catch up. If you do miss class it is your responsibility to get notes from your classmates and check iLearn for any homework or exam announcements.

Homework:

There will be assignments nearly every week (consult the schedule at the end of the syllabus for tentative dates). All assignments can be found on iLearn and will be up around a week before they are due. Please take note that I **DO NOT** accept late homework. Therefore if you must miss a class when an assignment is due, it is up to you to either hand in your homework early or make sure there is another student who can hand it in for you. I understand that life gets hectic so at the end of the semester I will drop your lowest scoring homework. I encourage you to work on the homework in groups, but I expect each of you to do your final write-ups alone. Finally, although I do not currently require homework to be typed up, keep in mind that neatly typed homework makes happy graders which makes for happy scores. Furthermore, homework that is messy and illegible will not be accepted.

Project:

Each student will complete and turn in a typed 3-5 page analysis of an econometric model which will be done in parts over the course of the semester. The purpose of this project is to familiarize students with the research process as well as produce a model and report that can be referenced in resumes or used as a starting point for their work in ECON 690 . The project parts along with there deadlines are noted in the schedule. More details and guidance will be provided as we approach the due date for the first part of the project.

Exams:

Two midterms and the final exam make up sixty percent of your grade (see the schedule for exam dates). There are no make-ups unless you have documented extenuating circumstances or an emergency. The tests will only cover material that was discussed in class and the majority of the problems will be similar to the homework exercises and the in-class examples.

Contact:

My office hours will be every Friday from 1pm-3pm (in HSS 138) or by appointment if that time does not work for your schedule. Feel free to email me (esegarra@mail.sfsu.edu) with any questions or concerns. The phone number is only applicable during office hours and there is no voice mail so email is the preferred mode of contact. I'll do my best to respond within 24 hours, but please be patient as we all have busy lives.

Computer/Phone Use Policy:

A significant portion of the course will include interactive instruction on using the statistical software package STATA (hence us being in a computer lab). However when we are not working in STATA **computer monitors are to be turned off** to prevent any temptations to check sports scores, gmail, or facebook updates from Kim Kardashian. Similarly, all cellphones should either be put on silent or completely turned off. Playing around on your phone is not only disrespectful to the teacher, it is also disrespectful and distracting to your fellow classmates. **If computer use or cell phone use becomes a repetitive problem I reserve the right to drop your final grade by half a letter grade.**

School Policies:

Statement on Cheating and Plagiarism

Please note that cheating is not tolerated. The minimum penalty will be failure on the exam or assignment. Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an un-earned academic advantage by fraudulent or deceptive means. For more information on the University's policy regarding cheating and plagiarism, refer to the University Catalog ('Policies and Regulations').

Americans with Disabilities Act (ADA) Accommodations

The University is committed to providing reasonable academic accommodations to students with disabilities. The Disability Programs and Resources Center provides university academic support services and specialized assistance to students with disabilities. Individuals with physical, perceptual, or learning disabilities as addressed by the Americans with Disabilities Act should contact Services for Students with Disabilities for information regarding accommodations. Please notify your instructor so that reasonable effort can be made to accommodate you. If you expect Accommodation through the Act, you must make a formal request through Disability Programs & Resources Center in SSB 110, Telephone 338-2472.

Statement on Disruptive Classroom Behavior

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, and to develop and understanding of the community in which they live. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Tentative Course Schedule :

Day	Lecture Topics	Reading	Assignments
1/28/14	Introduction, random variables, expected values		
1/30/14	Sampling, estimators, unbiasedness, and efficiency		Diagnostic MC Test
2/4/14	More estimators, important distributions, testing	Ch. R	
2/6/14	Type I and II error, confidence intervals, power		HW 1 Due
2/11/14	One sided tests, t-tests, F-tests		
2/13/14	Simple linear model, least squares, coefficient estimates	Ch. 1	HW 2 Due
2/18/14	Regression interpretation, goodness of fit		
2/20/14	SLR Assumptions, unbiasedness	Ch. 2	HW 3 Due
2/25/14	Precision of coefficients, testing, F-test		
2/27/14	MLR and assumptions, Gauss Markov	Ch. 3	HW 4 Due
3/4/14	**Exam 1: Covers Ch R, 1, and 2**		
3/6/14	Unbiasedness, efficiency, and precision		
3/11/14	Testing coefficients, multicolinearity, joint significance	Ch. 3	Project Part 1 Due
3/13/14	Adjusted R^2, prediction		
3/18/14	Nonlinearity, log-log, semi-log models	Ch. 4	HW 5 Due
3/20/14	Quadratic terms, interaction terms, RESET		
3/25/14	Spring Break!		
3/27/14	Spring Break!		
4/1/14	Dummy variables and interpretation	Ch. 5	HW 6 Due
4/3/14	Slope dummy variable, Chow test		
4/8/14	TBD		HW 7 Due
4/10/14	Model specification, omitted variable bias	Ch. 6	Project Part 2 Due
4/15/14	**Exam 2: Covers Ch 3, 4, and 5**		
4/17/14	Proxy variables, linear restrictions, reparameterization	Ch. 6	
4/22/14	Heteroskedasticity, GQ test, White test	Ch. 7	HW 8 Due
4/24/14	Weighted least squares, respecification, HRSE		
4/29/14	Linear probability model, logit	Ch. 10	HW 9 Due
5/1/14	Tobit, selection bias		
5/6/14	Time series, assumptions, static models	Ch. 11	HW 10 Due
5/8/14	Lagged variables		
5/13/14	Autocorrelation	Ch. 12	HW 11 Due
5/15/14	TBD		
5/20/14	**Final Exam is Tuesday, May 20th from 1:30pm-4:00pm**		