

Economics 300-01
Quantitative Methods in Economics
Spring 2014
Tuesdays and Thursdays 10:30-11:50am in PAC107

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Office Hours: Tuesdays, Wednesdays, and Thursdays 1-2pm
TAs: Dana Louie (dlouie) and Kate Uthe (kutte)
TA Sessions: Sundays 7-9pm in PAC 107 except as indicated

General Course Information

Purpose: This course is designed to provide you with a foundation in probability and statistics, both to help you understand statistical phenomena in general and to serve you as a tool in the further study of economics. The emphasis is on learning techniques that are widely used by economists, including use of computers as research aids.

Assignments and Credit:

Class participation	5%
Problem Sets	10%
Midterm #1	15%
Midterm #2	20%
Research Paper	25%
- <i>Proposal</i>	5%
- <i>Paper</i>	20%
Final Exam	25%

Unexcused absences from exams or non-delivery of the final paper will result in a failing grade for the course.

Readings: The required text is Wonnacott and Wonnacott, *Introductory Statistics for Business and Economics, Fourth Edition*. Chapter numbers in the course schedule refer to this text. Additional short items will occasionally be handed out in class and/or made available on the course moodle.

Class Participation: Class attendance is expected, and you are expected to complete all assigned readings before class. You are responsible for all assigned reading whether or not the material is covered explicitly in class. Classes will focus on the most important or complex topics. Please ask questions as they arise during class.

I will give a *B* for class participation to a student who regularly gives the answers to my questions thereby demonstrating that s/he has read and understood the required materials. I will give an *A* for class participation to a student who regularly asks insightful questions as well as giving the answers to my questions. I will give a *C* or lower for class participation to students who never participate in class or who are often not able to answer questions. *If you are texting or using a computer at any time during a class, I'll mark you absent for that day even if you talk a lot during that day's class.*

Excessive absences, late arrivals or early departures will lead to a lower class participation grade.

Problem Sets: Problem sets are assigned regularly (nearly every week). They have several purposes: to review and extend concepts from lecture or the notes, to introduce related topics not covered in lecture, and to provide feedback on your comprehension of the material to date. *Note: problem sets will occasionally cover material before it is covered in class.* There will be eleven problem sets and your ten best problem set grades will be counted towards your course grade.

Your TAs are not allowed to ever answer any questions about the problem sets before they are submitted. Their weekly sessions will review the material by working with you to solve problems that have been assigned previously at the same juncture in this course. Thus, the material covered in the TA sessions will parallel and complement both what we do in class and what you do independently in the problem sets.

Problem sets will be due at 1pm on Wednesdays, and should be submitted via the Econ 300-01 slot in the departmental locked box. As the solutions to the problem sets will be posted promptly, late problem sets will receive a maximum grade of check-minus.

Grading will be on a check-plus, check, check-minus scale. *Seriously deficient problem sets will receive no credit.* The rough rubric for determining grades: all questions answered correctly or all questions answered using right strategies (but with possible computational errors) = check-plus; some questions skipped or many questions answered incorrectly = check-minus; and almost everything in between = check. Late assignments will only get a check-minus irrespective of quality as solutions will be available online as soon as the deadline for submission passes.

Up to three people may cooperate on each problem set; when students submit joint problem sets all students will get the same grade. All assignments will be returned via the student boxes in the alcove next to the economics department office. (When students cooperate on an assignment, the assignment will be returned to the box corresponding to the first student's surname.) Please do not list any students' name on the problem sets; instead, please put students' WesIDs.

You will need a calculator for the exams.¹ I therefore recommend you use a calculator for at least some of the problem sets so that you are comfortable on the exam days.

Computer work: Some of the homework assignments, as well as the course project, will involve the use of an electronic spreadsheet (Excel) and/or a statistical package (Stata). Both Excel and Stata are available on the network accessed by the PCs in the QAC and PAC labs. Wesleyan subscribes to an economic statistics database, DataInsight, which is available through Excel.

Instructional sessions are scheduled for this course as listed on the last page of the syllabus.

Exams: Midterm #1 will be held in class on Thursday, February 20. Midterm #2 will be held in class on Tuesday, April 8. The final exam will be held during the time slot set by the registrar: Thursday, May 13, 9am-12noon. *Exams will be given at these times only – no exceptions.* Please do not enroll for this course if you cannot attend the exams as scheduled. Optional review sessions are scheduled for 7-9pm on the nights before the two midterms, and a session will be scheduled before the final exam.

Research Paper: The research paper is intended for you to develop some “hands-on” experience with statistical techniques. A good paper will interest both you and me, utilize concepts learned in the course, and may lead to further work in other courses or an eventual thesis topic. I will not approve any papers on sports topics under any circumstances.

¹ If you do not already have a calculator, it is not necessary for you to buy a fancy calculator.

Evaluation: Grading is based primarily on the quality of your analysis. However, I expect your papers to be well-written and free of any grammatical, logical, or spelling errors. You are encouraged to take advantage of the writing workshop on campus.

Late papers: Late proposals and papers are penalized at the rate of one letter grade per day late.

Deadlines:

- Topic: A 1-2 sentence email with your topic and proposed source of data (loosely identified) must be sent by 1pm on Friday, March 28. Attachments will not be accepted.
- Proposal: 2-3 page document must be uploaded to the appropriate folder in moodle by 1pm on Monday, April 14.
- Paper: 10 page document (not including tables, charts, figures, and references) must be uploaded to the appropriate folder in moodle by 1pm on Monday, May 12.

Turnitin: In addition to submitting your papers directly to me, the final paper must also be submitted by you to the class folder on turnitin.com by midnight on the appropriate due date. I have already set up a folder for these papers. (Obviously, if you have non-computer-readable attachments, you will not need to upload those into the system.)

For instructions on how to use turnitin.com, follow the instructions for students on the Wesleyan library website at <http://www.wesleyan.edu/libr/turnitin/>. Once you have set up your account, “enroll” in this course – the class ID number is 7489888 and the password is “econ300”.

Honor Code: All work submitted for a grade in this course must be your own original work. You are encouraged to discuss your work with your fellow students, but in accordance with the Honor Code, submitting another person’s work as your own would constitute plagiarism and will not be tolerated. The research paper cannot be submitted in another course without express prior permission from both me and the instructor of the other course. If you propose a topic that is related to a topic that you wrote about in a prior semester, you must seek express prior permission from me. If you have any questions about the application of the honor code, please contact me.

Missed Assignments: Should a personal emergency necessitate missing a scheduled exam or not delivering an assignment on time, contact me as soon as possible **ahead of time** to make alternative arrangements. Any such absence requires written certification from the Deans’ Office.

Students with Disabilities: It is the policy of Wesleyan University to provide reasonable accommodations to students with documented disabilities. Students, however, are responsible for registering with Disabilities Services, in addition to making requests known to me in a timely manner. If you require accommodations in this class, please make an appointment with me as soon as possible, so that appropriate arrangements can be made. The procedures for registering with Disabilities Services can be found at <http://www.wesleyan.edu/studentaffairs/disabilities/>.

Contact: Email is my preferred way of being contacted. Normally I will respond within a day, excluding illness and travel; response times are likely to be faster on weekdays. Placing in the subject of your email the phrase “ECON 300” plus a description of your message will likely result in a faster reply than a blank or generic subject.

Course Schedule

Below is an approximate schedule for the material. All readings are from the textbook. All assignments are due by 1 pm on the date indicated. Midterm exams will be given in class.

Lesson #	Date	Topic	Readings	Assignment
<i>Unit 1: Probability</i>				
1	Thurs. Jan. 23	Random sampling, Descriptive statistics	Ch. 1, 2	
2	Tues. Jan. 28	Descriptive statistics, Probability	Chs. 2 & 3	PS1 (due 1/29)
3	Thurs. Jan. 30	Probability	Ch. 3	
	Thurs. Jan. 30	Computer Session 1: Introduction to Excel and Data Insight with Manolis Kaparakis – 2:40-4 in PAC 100 or 4:10-5:30 in Allbritton 204		
4	Tues. Feb. 4	Probability distributions	Ch. 4	PS2 (due 2/5) ²
5	Thurs. Feb. 6	Probability distributions	Ch. 4	
6	Tues. Feb. 11	Two random variables	Ch. 5	PS3 (due 2/12)
7	Thurs. Feb. 13	Two random variables	Ch. 5	
<i>Unit 2: Statistics</i>				
8	Tues. Feb. 18	Sampling	Ch. 6	PS4 (due 2/19)
	Thurs. Feb. 20	Midterm #1 (Chs. 1-5)		
9	Tues. Feb. 25	Point estimation	Chs. 6 & 7	PS5 (due 2/26)
10	Thurs. Feb. 27	Point estimation, Confidence intervals	Chs. 7 & 8	
	Thurs. Feb. 27	Computer Session 2: Introduction to Stata with Manolis Kaparakis – 2:40-4 in PAC 100 or 4:10-5:30 in Allbritton 204		
11	Tues. Mar. 4	Confidence intervals	Ch. 8	PS6 (due 3/5)
12	Thurs. Mar. 6	Hypothesis testing	Ch. 9	
13	Tues. Mar. 25	Hypothesis testing	Ch. 9	PS7 (due 3/26) ²
14	Thurs. Mar. 27	Least squares estimation	Ch. 11	Paper topic email (due 3/28)
	Thurs. Mar. 27	Computer Session 3: Regression analysis in Stata with Manolis Kaparakis – 2:40-4 in PAC 100 or 4:10-5:30 in Allbritton 204		
15	Tues. Apr. 1	Simple regression	Ch. 12	PS8 (due 4/2)
16	Thurs. Apr. 3	Simple regression	Ch. 12	
	Tues. Apr. 8	Midterm #2 (Chs. 6-9, 11-12)		
<i>Unit 3: Regression</i>				
17	Thurs. Apr. 10	Multiple Regression	Ch. 13	Paper proposal (due 4/14)
18	Tues. Apr. 15	Multiple Regression	Ch. 13	PS9 (due 4/16)
19	Thurs. Apr. 17	Correlation	Ch. 14	
20	Tues. Apr. 22	Correlation, Time Series Analysis	Chs. 14 & 15	PS 10 (due 4/23)
21	Thurs. Apr. 24	Time Series Analysis	Ch. 15	
22	Tues. Apr. 29	Topics in Regression Analysis	TBA	PS11 (due 4/30)
23	Thurs. May 1	Topics in Regression Analysis	TBA	
24	Tues. May 6	Topics in Regression Analysis	TBA	
	Mon. May 12	Research Paper due by 1pm		Research paper
	Thurs. May 15, 9am-12noon	Final Exam (covers all material)		

² These TA sessions are on Monday night (instead of the usual Sunday night) due to conflicts with the Super Bowl and Spring Break, respectively.
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