Econ 3640-001

Probability and Statistical Inference

Spring 2013

3.0 credit hours
Time: M, W; 3:00pm to 4:20pm
Venue: BUC 203

Instructor

Doyoun Won, Graduate Student instructor
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Office: OSH 357
Office hour: By appointment

Textbook (available at the U of U Bookstore)

- David S. Moore; George P. McCabe; Layth C. Alwan; Bruce A. Craig; William M. Duckworth, *The Practice of Statistics for Business and Economics*, 3rd ed., W. H. Freeman, 2011.
- I will be teaching from the newest edition (3rd) but the used 2nd edition will be okay if you want to use.

Canvas

This course also is supported on Canvas at: http://learn-uu.uen.org
- Official announcements, links and other class materials will be posted in Canvas so please check periodically for messages pertaining to the course.

Course Introduction & Learning Objective

- The objects of an economist's interest are real world phenomena. We, however, reason about the world through abstract models. In order to blend the two, we are in need of a bridge. This is the role of probability and statistics. Probability and statistics are fundamentally two sides of the same coin, and they are the means by which we try to rationalize *hypotheses* with noisy data that describe actual *behavior*.

- Statistics is not often perceived as the students' most exciting subject. Yet, as they spend more time with this subject, statistics in their environment will take on new meaning to them. They will start to notice statistical concepts in other textbooks, in the news, and in discussions with others about the world around them. As those things in which we are involved become more noticeable in our environment, so will statistical ideas come to their attention as they proceed through this course. An effective way to do this is by presenting living ideas, by using things in their world to illustrate statistics concepts, and by allowing them to collect and analyze their own data in a hands-on fashion.

- The main objective of this course is to provide students with the foundations of statistical inference. Topics include basic probability models; random variables; discrete and continuous probability distributions; statistical estimation and testing; confidence

intervals. This is a fairly rigorous introduction to statistical methods and concepts that are needed in much of modern econometrics and economics. We will keep close to the topics and level of coverage given in the first 8 chapters of the textbook.

Course Work

1) Quizzes
There will be **four in-class (open book) quizzes** (two quizzes before the mid-term and the other two after the mid-term). The average score of those four quizzes will be counted for 20% of your final grade. **Each quiz has 20 multiple choice questions; you have 60 minutes to complete each quiz. We will go over those in the review session right before each exam.**

2) Exams
There will be two exams, mid-term and final, which are **a closed book examination** and will cover chapters prior to each exam. It consists of **1) multiple choice questions; 2) short answer questions.**

3) A Short Essay for Extra Credit
Specific information will be announced after the mid-term exam.

Grading Policy

Your final grade in the course will be based on your attendance, class participation, and your results on both exams and four quizzes. Students can check their scores on Canvas. It is calculated as follows:

Total: 100% = Four (in-class) Quizzes 20% + Mid-term: 40% + Final Exam: 40%

Your final grade will be determined by the following scale:

A = 90-100	B+ = 80-84	C+= 65-69	D = 45-54
A- = 85-89	B = 75-79	C = 60-64	E = 44 and below
	B- = 70-74	C- = 55-59	

Note: This tentative grading scale may be adjusted by class statistics.

Make-up Policy

If students know that they will not be able to take an exam, they must submit a written request/email the instructor with acceptable reasons for a previous or late exam one week in advance. If students do not make prior such arrangements, exams taken late will receive only 75% of the full grade points. A medical emergency requires a letter from a physician. Students must contact the instructor within one week after the exam; otherwise, no makeup will be given.

University Policies

- ADA (Americans With Disabilities Act) Statement:
"The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162

Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations." The complete policy can be found here: http://www.hr.utah.edu/oeo/ada/guide/faculty/

- Accommodations Policy:
"Some of the readings, lectures, films, or presentations in this course may include material that may conflict with the core beliefs of some students. Please review the syllabus carefully to see if the course is one that you are committed to taking. If you have a concern, please discuss it with me at your earliest convenience. For more information, please consult the University of Utah's Accommodations Policy, which appears at: www.admin.utah.edu/facdev/accommodations-policy.pdf."

- Responsibilities:
"All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee."

"Faculty… must strive in the classroom to maintain a climate conducive to thinking and learning." PPM 8-12.3, B.

"Students have a right to support and assistance from the University in maintaining a climate conducive to thinking and learning." PPM 8-10, II. A.

"The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification."

"Attendance requirements & excused absences: The University expects regular attendance at all class meetings. An instructor may choose to have an explicit attendance requirement. Physical attendance may be used as a criterion in determining the final grade only where it indicates lack of participation in a class where student participation is generally required or as required by accrediting bodies. Any particular attendance requirements of a course must be available to students at the time of the first class meeting."

"Students absent from class to participate in officially sanctioned University activities (e.g., band, debate, student government, athletics) or religious obligations, or with instructor's approval, shall be permitted to make up both assignments and examinations. The University expects its departments and programs that take students away from class meetings to schedule such events in a way that will minimize hindrance of the student's orderly completion of course requirements. Such units must provide a written statement to the students describing the activity and stating as precisely as possible the dates of the required absence. The involved students must deliver this documentation to their instructors, preferably before the absence but in no event later than one week after the absence."

Spring 2013 Class Schedule: this can be changed depending on progress.

Week	Date	Outline	Assignment
1	1/7 (M)	Course Introduction	
	1/9 (W)	Ch 1. Examining Distribution	Reading Ch 1.
2	1/14 (M)	Ch 1. Examining Distribution	Reading Ch 1.
	1/16 (W)	Ch 1. Examining Distribution	Reading Ch 1.
3	**1/21 (M)**	**No Class: Martin Luther King Jr. Day**	
	1/23 (W)	Ch 2. Examining Relationships	Reading Ch 2.
4	1/28 (M)	Ch 2. Examining Relationships	Reading Ch 2.
	1/30 (W)	1st Quiz	
5	2/4 (M)	Ch 3. Producing Data	Reading Ch 3.
	2/6 (W)	Ch 4. Probability & Sampling Distributions	Reading Ch 4.
6	2/11 (M)	Ch 4. Probability & Sampling Distributions	Reading Ch 4.
	2/13 (W)	Ch 4. Probability & Sampling Distributions	Reading Ch 4.
7	**2/18 (M)**	**No Class: Presidents' Day**	
	2/20 (W)	2nd Quiz	
8	2/25 (M)	Ch 5. Probability Theory	Reading Ch 5.
	2/27 (W)	Ch 5. Probability Theory	Reading Ch 5.
9	3/4 (M)	Review Session/ Mid-term Exam	
	3/6 (W)	**Mid-term Exam**	
10	**3/10 ~ 17**	**No Class: Spring Break**	
11	3/18 (M)	Ch 6. Introduction to Inference	Reading Ch 6.
	3/20 (W)	Ch 6. Introduction to Inference	Reading Ch 6.
12	3/25 (M)	Ch 6. Introduction to Inference	Reading Ch 6.
	3/27 (W)	3rd Quiz	
13	4/1 (M)	Ch 7. Inference for Distributions	Reading Ch 7.
	4/3 (W)	Ch 7. Inference for Distributions	Reading Ch 7.
14	4/8 (M)	Ch 7. Inference for Distributions	Reading Ch 7.
	4/10 (W)	Ch 7. Inference for Distributions	Reading Ch 7.
15	4/15 (M)	Ch 8. Inference for Proportions	Reading Ch 8.
	4/17 (W)	Ch 8. Inference for Proportions	Reading Ch 8.
16	4/22 (M)	4th Quiz	
	4/24 (W)	Review Session/ Final Exam	
17	**4/30 (Tuesday)**	**Final Exam**	**1:00pm to 3:00pm, BUC 203**