

## Special Topics: Introduction to Statistics and Econometrics

Lectures: M/W/F, 10:35am–11:30am, HGL 113  
Instructor: Prof. Yoonseok Lee (426 Eggers Hall, [ylee41@maxwell.syr.edu](mailto:ylee41@maxwell.syr.edu))  
Office Hours: Mon., 11:30am–12:30pm  
TA: Bin Peng ([bpeng01@syr.edu](mailto:bpeng01@syr.edu))  
(Office Hours: TBA)

### Course Description

As a special topics course, this course provides basic knowledge of probability, statistics and regression analysis for undergraduate economics majors. The course is intended for BA economic students and is not a substitute for ECN 521 and/or ECN 522. Upon completion of this course, students can read empirical literature in economics and carry out their own basic economic data analysis. No prior knowledge of statistics is assumed, though basic college-level calculus is expected. No credit is granted to those who have completed or are enrolled in ECN 521 and/or ECN 522. (*Prerequisites*: Art & Sciences core mathematics requirements)

The TA will hold weekly office hours and discussion sessions. Problem solving is essential for this course; the TA will go over problem sets and answer questions about materials covered in the class. The discussion session is scheduled on *every Friday during the regular lecture*.

The class web page is available at <http://blackboard.syr.edu>. Announcements, problem set questions and additional course materials are to be posted there, so make sure to visit the site frequently. Hard copies of these materials will *not* be distributed.

### Textbooks

The textbook for the course is:

Keller, G. (2014). *Statistics for Management and Economics*, 10th ed., Cengage Learning.

Many problem set questions are from this textbook. If you want more advanced (and more math-involved) textbook, the following one would be helpful, which is not required for this course though:

Hogg, R.V., E.A. Tanis, and Zimmerman (2014). *Probability and Statistical Inference*, 9th ed., Pearson.

## Organization and Evaluation

Grade is based on class attendance and three in-class quizzes. The grading breakdown is as follows:

Class Attendance 20%; Quizzes 80%.

Class attendance is to be checked on random dates. Note that there are three problem sets: each problem set roughly covers the class materials over four weeks. Students do not need to turn in the problem sets; instead, the quizzes are to be quite similar to the problem set questions and thus the quizzes naturally check whether students have worked on the problem sets or not. The in-class three quizzes are scheduled on the following Fridays:

Oct. 3; Oct. 31; Dec. 5

All quizzes are closed-book. No makeup quizzes nor early quizzes will be given for any reason, so please plan your travels smartly. *Students are required to take all the quizzes to pass this course.*

Problem sets will be posted on the class Blackboard web site, so please make sure to visit the site frequently. Do attend the TA sessions diligently; the TA will go over the problem sets as well as other important questions during the discussion sessions. Students are encouraged to form study groups and collaborate with other students to work on problem set questions.<sup>1</sup>

## Course Outline

### I. Probability

1. Introduction and Descriptive Statistics (Ch 1 - 4)
2. Probability Theory (Ch 6)
3. Random Variables and Distribution Theory (Ch 7.1 - 7.3)
4. Important Distributions (Ch 7.4 - 7.5, 8)

### II. Statistical Inference

1. Sampling Distribution (Ch 5, 9)
2. Point Estimation (Ch 10)
3. Interval Estimation (Ch 10)
4. Hypothesis Testing (Ch 11 - 13)

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<sup>1</sup>A word of advice: When you write the solution, provide the major steps of your calculation as you are taking exams. It is a good training for organizing and explaining your idea. When you are taking the quizzes, you will not be able to get the full credit if you simply write down the final answers without providing details.

### III. Regression Analysis

1. Linear Regression Model (Ch 16)
2. Least Squares Estimation (Ch 16)
4. Multiple Regression (Ch 17; if time permits)

**Academic Integrity** Syracuse University's Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the policy and know that it is their responsibility to learn about course-specific expectations, as well as about university policy. The university policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same written work in more than one class without receiving written authorization in advance from both instructors. The presumptive penalty for a first offense by an undergraduate student is course failure, accompanied by a transcript notation indicating that the failure resulted from a violation of Academic Integrity Policy. The standard sanction for a first offense by a graduate student is suspension or expulsion. For more information and the complete policy, see <http://academicintegrity.syr.edu>.

**Accommodations for Students with Disabilities** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. For more information, see <http://disabilityservices.syr.edu/faculty-staff/contact-us/>.