

UPenn – Fall 2016
ECON 103 – Statistics for Economists

Course Description: Probabilities are used to describe risk and uncertainty in economic models. Statistics provides a bridge between models and reality. This class will cover basic probability theory in a first part and basic statistical theory in a second part, with an emphasis on practical implementation using the R programming language.

Course Instructor: Benjamin Connault

Recitation Instructors: Rodrigo Azuero-Melo, Rossa O’Keeffe-O’Donovan.

Office Hours:

- Benjamin Connault: Wednesdays 9-10am and 12.30-1.30pm (518 McNeil).
- Rodrigo Azuero-Melo: Fridays 1-3pm (417 McNeil).
- Rossa O’Keeffe-O’Donovan: Thursdays 9-10am and 11am-12pm (430 McNeil).

Course Website: piazza.com/upenn/fall2016/econ103. We will use Piazza for posting lecture slides and other material; announcements; and answering questions about course material and logistics. Please use Piazza for all your questions, so that everyone can benefit from the discussion. To encourage asking questions and giving answers, 10 % of the grade will be a Piazza participation grade (see “Grading” below for details). The instructors will moderate Piazza both to answer questions and approve (or correct) answers written by you and your classmates.

Course Email: Please use Piazza for all questions about class material or logistics. For strictly personal issues, please email upenn103@gmail.com.

Prerequisites: Math 104 followed by Math 114 or Math 115. Parts of the course will be taught in a formal mathematical style.

Required Software: We will use the programming language R. If you do not know R already, you will have to learn it for the class. Learning material will be provided on Piazza and instructors will answer questions. R examples will be provided in lectures, including commands. Midterms and final may include R questions related to the class.

Departmental Course Policies: All Economics Department course policies are in force in Econ 103 even if not explicitly listed on this syllabus. See: <http://economics.sas.upenn.edu/undergraduate-program/course-information/guidelines/policies> for full details.

Academic Integrity: All suspected violations of the code of academic integrity as set forth in the Pennbook will be reported to the Office of Student Conduct. Confirmed violations will result in failure for the course. We will check identification cards at exams so please be sure to bring yours.

Class Material and Class Textbook: Lecture slides are the final authority on course material. The class textbook is *Introductory Statistics for Business and Economics*, 4th edition, Wonnacott and Wonnacott. I will keep a list of textbook recommended readings updated to go along with the lectures. Textbook readings are provided for a complementary perspective on lecture material. You are not responsible for material in the textbook beyond what is covered in lecture. You are responsible for lecture material even when it is not covered in the textbook.

Homework: Problem sets will be posted on the course website, together with solutions. Homework will neither be collected nor graded, but keeping up with the homework on a weekly basis is crucial if you want to be successful in the class.

Grading: Grades for this course will be determined based on two in-class midterms, a final examination, a Piazza participation grade, and recitation quizzes, as follows:

$$\begin{aligned} \text{Overall Score} = & (20\% \times \text{Midterm 1}) + (20\% \times \text{Midterm 2}) + (30\% \times \text{Final}) \\ & + (10\% \times \text{Piazza Participation}) + (20\% \times \text{Quizzes}) \end{aligned}$$

Course Curve: Following departmental policy, overall course scores may be curved so that approximately 20-30% fall in the A-range, 40-50% fall in the B-range, and the bulk of the remaining 20-40% fall in the C-range. I will only curve the course in your favor, so that the following grade boundaries are guaranteed: A-range = 90-100, B-range = 80-89, C-range = 70-79 (a 95 score guarantees a A, while you may obtain a A with an 85 score in case of upward curving). Grades below C-minus are reserved for students falling far below the class minimum standard, instructors will do their best to send a course problem notice to a student in risk of falling behind this standard.

Exams: There will be two 70-minute in-class midterm exams and a 2-hour final exam, scheduled as followed:

- Midterm 1: Wednesday, September 28, 2-3.30pm (in-class). Material: lectures 1 to 7.
- Midterm 2: Monday, November 7, 2-3.30pm (in-class). Material: lectures 8 to 17.

- Final: Wednesday, December 21, 6-8pm. Material: all lectures.

Attendance at all exams is *mandatory* and there will be no makeup midterms. The makeup final will take place at the beginning of next semester and is outside of the instructor's control: eligibility as well as the time and date are determined by the Economics Department. Exam regrade requests must be made in writing within a week of receiving your graded exam. As we re-grade the entire exam, your score could rise or fall. It is compulsory to have attended the recitation where the midterm is solved (recitation at the end of the week of the midterm) in order to submit a regrade request. You may not discuss your answers with an RI or the instructor before submitting a regrade request. Exams will be photocopied before being returned and you may write in pencil or pen. Personal "cheat-sheets" of up to 15 single pages in the letter format will be allowed. Calculators will also be allowed. All other material will be prohibited. We will check ID cards at each exam.

Piazza Participation Grade: Piazza participation will contribute 10% of your final score. It will be fairly easy to obtain full score by asking genuine questions which help your studying, and/or by contributing answers. No need to spam Piazza with low-quality contributions as those will not go towards your score and may even be penalized in extreme cases. Exceptional participation, such as high quality answers or expository contributions, may be rewarded with up to 5% bonus points.

Quizzes: Your RIs will administer a number of short quizzes in recitation over the course of the semester. Each quiz will cover basic material from the most recent lectures since the last quiz or midterm. When calculating your quiz average, I will drop your two lowest scores and weight the remaining quizzes evenly. No makeup quizzes will be given so use your two "free skips" carefully. Quizzes will not be returned and answers will not be posted but the RI's will go over each quiz in recitation. Quiz dates will be announced on Piazza.