

Econ 709
Econometrics I, Part I
Fall 2020

Course Time: Live office hour on BB Collaborate Ultra at 2:30PM - 3:45PM US Central Time.
Location: online.
Webpage: <https://canvas.wisc.edu/courses/208719>

Instructor: Xiaoxia Shi, xshi28@wisc.edu

TAs: **Hyun Lim** hyunkyeong.lim@wisc.edu
Jian Zhang <jzhang648@wisc.edu>

Professor Shi will teach the first half of the semester (until October 23).
Professor Porter will teach the second half of the semester, covering linear regression.

This course is designed for first-year Economics PhD students. The course prerequisites intermediate calculus and linear algebra.

Learning outcome: Students will gain an introductory familiarity to probability theory and statistical inference that will be useful for further econometrics study.

This 4-credit course has two 75 min lectures and a 50 min discussion section per week. Students are expected to work approximately 8 hours per week outside of class to complete assignments and learn the relevant material. Pre-recorded videos roughly equal to two 75 min lectures will be uploaded at the beginning of each week.

Class assignments will be passed out approximately every week. The assignments will be graded by the teaching assistant and will be reviewed in the discussion sections.

There will be a midterm exam on October 23 at class time.

Grading for the first half of the semester will be: Assignments: 20%. Exam: 80%.
The grades from the two halves will be averaged to obtain the semester grade.

The textbook for the first half is here <https://www.ssc.wisc.edu/~bhansen/probability/Probability.pdf>

Some alternative texts are:

Statistical Inference, 2nd Edition by George Casella and Roger Berger.

Less Advanced:

Arthur S. Goldberger, *A course in Econometrics*

Robert Hogg and Elliot Tanis, *Probability and Statistical Inference*

Similar Level:

Robert Hogg and Allen Craig, *Introduction to Mathematical Statistics*

Oliver Linton, *Probability, Statistics, and Econometrics*

More Advanced:

Erich Lehmann and George Casella, *Theory of Point Estimation*

Erich Lehmann and Joe Romano, *Testing Statistical Hypotheses*

Topics and Readings (subject to change):

- Probability Theory
- Transformations and Expectations
- Common Families of Distributions
- Multiple Random Variables
- Properties of a Random Sample
- Point Estimation
- Hypothesis Testing
- Confidence Intervals
- Introduction to Maximum Likelihood Estimation

The textbook goes into many topics in more depth than we will have time to investigate during the half semester. Our treatment will be a bit narrower and more focused.

Proctoring

Instructors have the authority to decide whether to proctor their tests, quizzes or other course assessments whether the courses is delivered in-person or remotely. Failure to use the proctoring service assigned will result in zero on the exams.

Misconduct Statement

Academic Integrity is critical to maintaining fair and knowledge-based learning at UW Madison. Academic dishonesty is a serious violation: it undermines the bonds of trust and honesty between members of our academic community, degrades the value of your degree and defrauds those who may eventually depend upon your knowledge and integrity.

Examples of academic misconduct include, but are not limited to: cheating on an examination (copying from another student's paper, referring to materials on the exam other than those explicitly permitted, continuing to work on an exam after the time has expired, turning in an exam for regrading after making changes to the exam), copying the homework of someone else, submitting for credit work done by someone else, stealing examinations or course materials, tampering with the grade records or with another student's work, or knowingly and intentionally assisting another student in any of the above. Students are reminded that online sources, including anonymous or unattributed ones like Wikipedia, still need to be cited like any other source; and copying from any source without attribution is considered plagiarism.

The Department of Economics will deal with these offenses harshly following UWS14 procedures:

1. The penalty for misconduct in most cases will be removal from the course and a failing grade,
2. The department will inform the Dean of Students as required and additional sanctions may be applied.
3. The department will keep an internal record of misconduct incidents. This information will be made available to teaching faculty writing recommendation letters and to admission offices of the School of Business and Engineering.

If you think you see incidents of misconduct, you should tell your instructor about them, in which case they will take appropriate action and protect your identity. You can also choose to contact our department administrator, Tammy Herbst-Koel (therbst@wisc.edu), and your identity will be kept confidential. For more information, refer to <https://www.students.wisc.edu/doso/academic-integrity/>

Grievance Procedure

The Department of Economics has developed a grievance procedure through which you may register comments or complaints about a course, an instructor, or a teaching assistant. The Department continues to provide a course evaluation each semester in every class. If you wish to make anonymous complaints to an instructor or teaching assistant, the appropriate vehicle is the course evaluation. If you have a disagreement with an instructor or a teaching assistant, we strongly encourage you to try to resolve the dispute with him or her directly. The grievance procedure is designed for situations where neither of these channels is appropriate.

If you wish to file a grievance, you should go to room 7238 Social Science and request a Course Comment Sheet. When completing the comment sheet, you will need to provide a detailed statement that describes what aspects of the course you find unsatisfactory. You will need to sign the sheet and provide your student identification number, your address, and a phone where you can be reached. The Department plans to investigate comments fully and will respond in writing to complaints.

Your name, address, phone number, and student ID number will not be revealed to the instructor or teaching assistant involved and will be treated as confidential. The Department needs this information, because it may become necessary for a commenting student to have a meeting with the department chair or a nominee to gather additional information. A name and address are necessary for providing a written response.