Statistics: Measurement in Economics
Econ 310, Fall 2015

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Course Overview

This course provides a semester long introduction to statistics. The material is organized into three sections. We begin with an overview of descriptive statistics and statistical terminology. Next we turn to probability, a branch of mathematics which provides us with the methods necessary to reason about uncertain environments. Finally, we turn to the bread and butter of statistics: estimation and inference. Particular attention will be paid to the application of these tools to the analysis of economic data.

Prerequisites

Prerequisites for this class include (a) an introductory economics course and (b) Math 211 or Math 221. Note that Econ 310 is an introductory statistics course, so it is not recommended for students who have already completed coursework in statistics.

Class Meetings & Office Hours

Lectures will be Tuesdays & Thursdays from 1:00 - 2:15 p.m. in Social Science 5208.

My office hours will be Mondays from 10:30 a.m. to 12:00 p.m. in Social Science 7321. Your TA will announce his or her office hours at your first discussion section.

Textbook (and other required materials)

A non-graphing scientific calculator is required for all exams. The textbook is:


Note that we’ll be using Aplia extensively for this class, so it is essential that you buy a “book plus Aplia” bundle, not simply the book alone. There are two options for obtaining an Aplia bundle:

- **Option 1** – If you are happy with electronic-only access to the textbook, when you log into your Aplia account you will be given an opportunity to buy a semester of access for $99.

- **Option 2** – If you prefer a physical textbook, University Bookstore sells an Aplia bundle that includes a loose-leaf edition of the text for $146.
As far as I know, these Aplia bundles are not available from other book sellers. If you do find it elsewhere at a better price, let me know and I'll spread the word.

NOTE: It is possible to access the Aplia website without payment until 9/20. So if you’re considering of dropping this course, I recommend holding off on purchasing anything until after you’ve make a final decision.

Aplia Registration

To register for Aplia, please follow the following instructions:

1. Go to http://login.cengagebrain.com/

2. Enter your course key and click the Register button. The course key for this class is: 57SZ-4BR4-WG2E

3. If you already have an Aplia account from a previous course, please log in. Otherwise enter an e-mail address and click the Create a New Account button. Continue to follow the on-screen instructions.

Course Webpage

We will not be using Learn@UW. Instead, lecture notes and other course material will be posted on the Aplia website: http://www.aplia.com/

Evaluation

Your final grade for the course will be based on three components:

- Midterm Exams: There will be two in-class midterms, each worth 20% of your overall grade for the course. See the exam dates in the course outline below. **Ensure that you are available these dates, as midterm exams will not be rescheduled for any student for any reason.** On a case by case basis, in the event of a truly unavoidable absence (submit a written statement in advance of the exam), I may elect to shift the weight of a missed exam to subsequent exams. Note, however, that I do not consider a cold or flu to constitute an unavoidable absence – illnesses must be severe enough to make attendance impossible and must be fully documented.

  After receiving your graded midterm, please compare it with the answer key. If you find a mistake or are otherwise unhappy with your grade, you have two weeks after exams were distributed in class to bring your complaint to me.

- Final Exam: The (cumulative) final for this class is worth 30% of your overall grade for the course. See the exam date in the course outline below. As with the midterms, in a class this size it is not possible to reschedule the final – even when
students have multiple exams in a 24 hour period. However, if you have another exam at exactly the same time, then I am willing to reschedule so long as you provide evidence of enrollment in a class with a conflicting final and notify me at least two weeks in advance.

- Aplia problem sets: These are worth 25% of your grade for the course, so completing them will be critical to your success. Problem sets must be completed on the Aplia website before the due date. Late problem sets will not be accepted for any reason, but your lowest two Aplia problem set grades will be automatically dropped.

- Stata problem set: There will be one Stata problem set, which will be worth 5% of your grade for the course. More details on this assignment will be provided later in the semester. You are encouraged to form a study group with your classmates, but you must write up your answers independently. Problem sets with identical answers will not be accepted (i.e., receive zero credit).

Finally, your overall grade for this class will be curved. This curve can help your grade, but cannot hurt it. For those who like the gory detail, I achieve this by computing your grade using two different methods. First, I assign grades according to a percentage scale, where A = [92,100], AB = [88,92), B = [82,88), BC = [78,82), C = [70,78), D = [60,70), F = [0,60). (In other words, if you receive a grade in the class of 92% or better, then you’ll receive an A.) Second, I assign grades according to a percentile scale, where A = [83,100], AB = [65,83), B = [45,65), BC = [25,45), C = [6,25), D = [3,6), F = [0,3). (In other words, if you perform better than 83% of the class, then you’ll receive an A). Your overall grade in the class is the higher of these two grades.

Students with Disabilities

If you have a documented requirement for accommodation, please bring me a photocopy of your McBurney Visa (not the original) at least two weeks before the first midterm.

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.

**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 Dept. of Economics will deal with these offenses harshly following UWS14 procedures (http://students.wisc.edu/saja/misconduct/UWS14.html):

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 could also
choose to contact our administrator (Tammy Herbst-Koel: therbst@wisc.edu) and your identity will be kept confidential.
Course Outline

These *readings are tentative* and represent a best guess of where we will be on any given date. Exam dates, however, are firm and will not be changed.

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<tr>
<th>Topic</th>
<th>(Tentative) Dates</th>
<th>Reading</th>
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<tbody>
<tr>
<td>Introduction–Graphing</td>
<td>9/3</td>
<td>Chapters 1 &amp; 2</td>
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<tr>
<td>Introduction–Descriptive Statistics</td>
<td>9/8</td>
<td>Chapters 3 &amp; 4</td>
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<tr>
<td>Introduction-Sampling</td>
<td>9/10</td>
<td>Chapter 5</td>
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<tr>
<td>Probability</td>
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<tr>
<td>Discrete Distributions</td>
<td>9/22, 9/24, 9/29</td>
<td>Chapter 7</td>
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<tr>
<td>Continuous Distributions</td>
<td>10/1</td>
<td>Chapter 8.1</td>
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<tr>
<td>Review Session</td>
<td>10/6</td>
<td>Chapters 1-8.1</td>
</tr>
<tr>
<td><strong>Midterm</strong></td>
<td><strong>10/8</strong></td>
<td><strong>Chapters 1-8.1</strong></td>
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<tr>
<td>Continuous Distributions (continued)</td>
<td>10/13, 10/15</td>
<td>Chapter 8.2 - 8.4</td>
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<td>Sampling Distributions</td>
<td>10/20, 10/22</td>
<td>Chapter 9</td>
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<td>Estimation</td>
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<td>Hypothesis Testing</td>
<td>11/3, 11/5</td>
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<td>Inference</td>
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<td>Chapter 12</td>
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<td>Review Session</td>
<td>11/17</td>
<td>Chapters 8.2-12</td>
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<tr>
<td><strong>Midterm</strong></td>
<td><strong>11/19</strong></td>
<td><strong>Chapters 8.2-12</strong></td>
</tr>
<tr>
<td>Comparing Two Populations</td>
<td>11/24, 12/1</td>
<td>Chapter 13</td>
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<tr>
<td>Analysis of Variance</td>
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<td>Chapter 14</td>
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<tr>
<td>Simple Linear Regression</td>
<td>12/8, 12/10</td>
<td>Chapter 16</td>
</tr>
<tr>
<td>Review Session</td>
<td>12/15</td>
<td>Cumulative</td>
</tr>
<tr>
<td><strong>Final Exam</strong></td>
<td><strong>12/19 2:45-4:45pm</strong></td>
<td><strong>Cumulative</strong></td>
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Note: The final is on a Saturday.