Course Information

STAT 1051-11 – Intro to Statistics for Business & Economics --Fall 2014

Lectures: Tuesday & Thursday, 11:10am–12:25pm, Corcoran 106

Recitation: Section 35: Tuesday, 2:20-3:10pm, Rome 204
Section 36: Tuesday, 3:55-4:45pm, 1957 E 212

Instructor: Jonathan Stroud, Associate Professor of Statistics
Email: stroud@gwu.edu
Office: 551 Rome Hall
Phone: (202) 994-6689
Office Hours: Wednesday, 4-6pm and by appointment.

Course TA: Biao Yang
Email: yangbiao@gwu.edu
Office: Old Main 301A, 1922 F Street
Office Hours: Monday, 2-4pm

Course Website

Course materials will be posted on Blackboard.

Course Description

The course will cover the basics of statistics and probability and their applications in business and economics. We will not do any specific applications but do problems from the book that applies the concepts to real situations. We will cover chapters 1-7 and 11 from the textbook. The main topics to be covered include: descriptive statistics for single variable and bivariate data; probability and random variables; Binomial and Normal distributions; confidence intervals and hypothesis testing; and simple linear regression.


Software: SPSS, Version 18 or higher (we will be using the software to do some problems in class and on the data analysis projects). The software is available for purchase at the bookstore, and for free at all computer labs on campus.
Homework problems will be assigned each week and you are expected to work through these problems. The problems will not be graded but are intended to help reinforce the material from lecture. There will also be a ~20 minute quiz during each recitation, typically based on the previous week’s homework assignment. The quizzes will be graded and will count towards the final grade. The lowest two quiz scores will be dropped. There will be a midterm and a final exam.

There will be two projects where you will use SPSS to analyze data and answer questions about the datasets. Each project will consist of 2-3 problems with multiple parts.

**Midterm Exam**: Thursday, October 16 (in class).
**Final Exam**: Thursday, December 11, 12:40-2:40.

**Grading Policy**

The final grade is computed as follows:

- Quizzes: 30%
- SPSS Projects: 10%
- Midterm Exam: 30%
- Final Exam: 30%.

**Class Policies:**

- Stat 1051, 1053, 1091, 1104, 1111, and 1127 are related in their subject matter, and credit for only one of the six may be applied toward a degree.

- No make-up quizzes or exams are allowed (except under extraordinary circumstances in which a written request and related documentation must be submitted to me as early as possible).

- The midterm and final will be closed book. You are allowed a one-page handwritten note sheet for the midterm, and a two-page note sheet for the final.

- The final exam will be cumulative; however, it will strongly emphasize material from the second half of the course.

- You will need a calculator to do the quizzes, exams, and in-class problems, so please bring a calculator to class and recitation.

- Students are not allowed to use laptops or other electronic devices during lecture unless asked to.
LEARNING OUTCOMES

As a result of completing this course, students will be able to:

1. Summarize data using graphical and numerical methods.
2. Calculate probabilities of events given assumptions on the population.
3. Use the binomial and normal distributions to calculate probabilities.
4. Construct confidence intervals and hypothesis tests to make inference about population parameters.

ACADEMIC INTTEGRITY

Students are expected to abide by the GW Code of Academic Integrity, which states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one’s own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see: [http://www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html).

SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM

Disability Support Services (DSS)

Please inform the instructor if you have a documented disability and need special arrangements for tests or quizzes. To establish eligibility and coordinate reasonable accommodations for exams, please contact the Disability Support Services Office (202-994-8250), in the Marvin Center, Suite 242, or at [http://gwired.gwu.edu/dss/](http://gwired.gwu.edu/dss/).

University Counseling Center (UCC)

The University Counseling Center offers 24/7 assistance and referral to address students’ personal, social, career, and study skills problems. Services for students include: Crisis and emergency mental health consultations, and confidential assessment, counseling services (individual and small group), and referrals: [http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices](http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices).

SECURITY

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a predetermined rendezvous location.
<table>
<thead>
<tr>
<th>Wk</th>
<th>Quiz</th>
<th>Dates</th>
<th>Sections</th>
<th>Material Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Aug 26, 28</td>
<td>1.1-1.7</td>
<td>Types of data; Collecting data; Graphical methods for qualitative, quantitative data</td>
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<td>2.1-2.3</td>
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<tr>
<td>2</td>
<td>Q1</td>
<td>Sep 2, 4</td>
<td>2.4-2.8</td>
<td>Measures of centrality, variability; Measures of relative standing, boxplots, scatter plots</td>
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<tr>
<td>3</td>
<td>Q2</td>
<td>Sep 9, 11</td>
<td>3.1-3.4</td>
<td>Intro to Probability; unions, intersections; Addition Rule, Mutually exclusive events</td>
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<td>4</td>
<td>Q3</td>
<td>Sep 16, 18</td>
<td>3.4-3.7</td>
<td>Multiplication Rule, Independence, Conditional Probability; Bayes Theorem</td>
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<tr>
<td>5</td>
<td>Q4</td>
<td>Sep 23, 25</td>
<td>4.1-4.3</td>
<td>Discrete Random Variables. Binomial Distribution</td>
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<tr>
<td>6</td>
<td>Q5</td>
<td>Sep 30, Oct 2</td>
<td>4.3, 4.5</td>
<td>Binomial Distribution; Continuous Random Variables, Normal Distribution</td>
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<tr>
<td>7</td>
<td>Q6</td>
<td>Oct 7, 9</td>
<td>4.6</td>
<td>Normal Distribution: z-scores; normal tables; normal percentiles</td>
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<tr>
<td>8</td>
<td></td>
<td>Oct 14, 16</td>
<td>4.6-4.7 Chapters 1-4</td>
<td>More on the Normal Distribution; <strong>Midterm Exam, October 16</strong></td>
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<td>9</td>
<td></td>
<td>Oct 21, 23</td>
<td>5.1-5.4</td>
<td>Sampling distributions for sample mean and sample proportion, Central Limit Theorem</td>
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<tr>
<td>10</td>
<td>Q7</td>
<td>Oct 28, 30</td>
<td>6.1-6.4</td>
<td>Confidence Intervals: Population mean (z) Confidence Intervals: Population mean (t)</td>
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<td>11</td>
<td>Q8</td>
<td>Nov 4, 6</td>
<td>6.4-6.5;</td>
<td>Confidence Intervals: Population proportion Sample Size Determination</td>
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<td>12</td>
<td>Q9</td>
<td>Nov 11, 13</td>
<td>7.1-7.4</td>
<td>Intro to Hypothesis testing Hypothesis Testing: Population mean (z)</td>
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<tr>
<td>13</td>
<td>Q10</td>
<td>Nov 18, 20</td>
<td>7.5-7.6, 7.3</td>
<td>Hypothesis Testing: Population mean (t) Hypothesis Testing: Population proportion</td>
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<td>14</td>
<td>Q11</td>
<td>Nov 25</td>
<td>11.1-11.4</td>
<td>Simple linear regression</td>
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<td>15</td>
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<td>Dec 2</td>
<td>11.5-11.6</td>
<td>Regression and Correlation</td>
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<td>16</td>
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<td>Dec 11</td>
<td>Chpt. 1-7, 11</td>
<td><strong>Final Exam, December 11.</strong></td>
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