Course Information

Stat 1051-12, Intro to Statistics for Business & Economics, Spring 2015

Lectures: Tuesday, 6:10pm–8:00pm, Corcoran 111
Thursday, 6:10pm–7:00pm, Corcoran 111

Recitation: Thursday, 7:10pm–8:00pm, Corcoran 111

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

Course TA: Biao Yang
Email: yangbiao@gwu.edu
Office: Old Main, Room 301A
Office Hours: Wednesday, 3-5pm

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 apply 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 univariate 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, Quizzes, Projects and Exams

Homework problems will be assigned each week and you are expected to work through them. 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 section, 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 use SPSS to analyze data and answer questions about the datasets. Each project will consist of 2-3 problems, each with multiple parts.

Midterm Exam: Thursday, March 5 (tentative).
Final Exam: Tuesday, May 5, 7:40-9:40pm (tentative).

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. However, 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, but 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. Use graphical and numerical methods to summarize data.
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 carry out hypothesis tests to make inference about population parameters.

ACADEMIC INTEGRITY

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.

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/

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

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>
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</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Jan 13, 15</td>
<td>1.1-1.7</td>
<td>Types of data; Data collection; 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>Jan 20, 22</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>Jan 27, 29</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>Feb 3, 5</td>
<td>3.4-3.7</td>
<td>Multiplication Rule, Independence, Conditional Probability; Bayes Theorem</td>
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<td>5</td>
<td>Q4</td>
<td>Feb 10, 12</td>
<td>4.1-4.3</td>
<td>Discrete Random Variables. Binomial Distribution</td>
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<td>6</td>
<td>Q5</td>
<td>Feb 17, 19</td>
<td>4.3, 4.5</td>
<td>Binomial Distribution; Continuous Random Variables, Normal Distribution</td>
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<td>7</td>
<td>Q6</td>
<td>Feb 24, 26</td>
<td>4.6</td>
<td>Normal Distribution: z-scores; normal tables; normal percentiles</td>
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<td>8</td>
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<td>Mar 3, 5</td>
<td>4.6-4.7</td>
<td>More on the Normal Distribution; Midterm Exam, March 5</td>
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<td>Chapters 1-4</td>
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<td>9</td>
<td></td>
<td>Mar 17, 19</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>Mar 24, 26</td>
<td>6.1-6.4</td>
<td>Confidence Intervals: Population mean (z)</td>
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<td>Confidence Intervals: Population mean (t)</td>
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<td>11</td>
<td>Q8</td>
<td>Mar 31, Apr 2</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>Apr 7, 9</td>
<td>7.1-7.4</td>
<td>Intro to Hypothesis testing Hypothesis Testing: Population mean (z)</td>
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<td>13</td>
<td>Q10</td>
<td>Apr 14, 16</td>
<td>7.5-7.6, 7.3</td>
<td>Hypothesis Testing: Population mean (t)</td>
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<td>Hypothesis Testing: Population proportion</td>
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<td>14</td>
<td>Q11</td>
<td>Apr 21, 23</td>
<td>11.1-11.4</td>
<td>Simple linear regression; Regression and Correlation</td>
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<td>16</td>
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<td>May 5</td>
<td>Chpt. 1-7, 11</td>
<td>Final Exam, Tuesday, May 5.</td>
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