STAT201: STATISTICAL METHODS

Course Outline, Semester 131

Instructor: Esam Al-Sawi
Office: (5-310)
Telephone: 860 1887
Email: WebCT

Office Hours: SMW: 9:00 – 9:50 am and 11:00 AM – 11:50 AM or by appointment.

Text and Package:
The recommended textbook and software are:
(2) MINITAB.

Course Objectives:
STAT201 introduction to statistics is intended to be the first course in statistics for students. The emphasis is on understanding how to use statistics to solve real-world problems. Upon completion of this course you should:
• Be familiar with the techniques of data analysis studied;
• Understand the basic elements of probability studied;
• Understand the assumptions, methods, and implications associated with various methods of statistical inference studied; and
• Be proficient in using MINITAB and be able to interpret the associated output.

Assessment
Assessment for this course will be based upon homework, class work, attendance, quizzes, lab, two major exams and final exam (comprehensive), with the following weighting:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Quizzes, homework and class work</td>
<td>10%</td>
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<tr>
<td>Exam 1 (Chapters 1, 2, 3 and 4)</td>
<td>20%</td>
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<tr>
<td>Week 5, Monday September 30, 2013, 6:00 pm</td>
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<tr>
<td>Exam 2 (Chapters 5, 6 and 7)</td>
<td>20%</td>
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<tr>
<td>Week 10</td>
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<td>Lab reports and lab exam</td>
<td>10%</td>
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<tr>
<td>Final exam (comprehensive)</td>
<td>40%</td>
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<tr>
<td>Monday December 30, 2013, 7:00 PM</td>
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# Syllabus (Tentative)

<table>
<thead>
<tr>
<th>Week</th>
<th>Section</th>
<th>Topics</th>
<th>Reminders</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>1.1 -1.3</td>
<td>Introduction, the nature of statistics, populations and samples</td>
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<td>Week 2</td>
<td>2.1-2.5</td>
<td>Introduction, frequency tables &amp; graphs, histograms, stem-&amp;-leaf plot, set paired data Mean, median, mode</td>
<td>Thursday September 12 Last day for dropping course(s) without permanent record</td>
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<tr>
<td>Week 3</td>
<td>3.5-3.7</td>
<td>Variance &amp; standard deviation, empirical rule and sample correlation coefficient Probability: sample space &amp; events,</td>
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<td>Week 4</td>
<td>4.3-4.4</td>
<td>Properties, and equally likely outcomes</td>
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<tr>
<td>Week 5</td>
<td>5.1-5.2</td>
<td>Discrete random variables</td>
<td>Exam 1 (Chapters 1, 2, 3 and 4) Monday September 30, 2013, 6:00 pm</td>
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<td>Week 6</td>
<td>5.3-5.5</td>
<td>Expected value &amp; variance, binomial random variables</td>
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<td>Week 7</td>
<td>6.1-6.3</td>
<td>Continuous random variables, normal random variables</td>
<td>Monday October 21 Last day for dropping course(s) with grade of &quot;W&quot; thru Internet <a href="http://regweb.kfupm.edu.sa">http://regweb.kfupm.edu.sa</a></td>
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<tr>
<td>Week 8</td>
<td>6.4-6.7</td>
<td>Standard normal random variable, probabilities, additive property and percentiles</td>
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<td>Week 9</td>
<td>7.1-7.5</td>
<td>Sample mean, central limit theorem and sampling proportions</td>
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<td>Week 10</td>
<td>8.1-8.6</td>
<td>Point estimates of population mean, proportion &amp; variance and interval estimates of mean</td>
<td>Thursday November 14 Last day for withdrawal from all courses with grade of &quot;W&quot; thru the Univ Registrar Office</td>
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<td>Week 12</td>
<td>9.3-9.5</td>
<td>Hypotheses tests for mean and proportion</td>
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<td>Week 13</td>
<td>10.1-10.4</td>
<td>Testing equality of means: Large &amp; small sample</td>
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<td>Week 14</td>
<td>12.1-12.5</td>
<td>Simple linear regression</td>
<td>Thursday December 12 Last day for withdrawal from all courses with grade of &quot;WP/WF&quot; thru the University Registrar Office</td>
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<td>Week 15</td>
<td>12.6-12.9</td>
<td>Coefficient of determination and correlation coefficient</td>
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<td>December 22 – 24</td>
<td>Review</td>
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<td>Tuesday December 24 Normal Thursday Classes</td>
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Outfits
Students will be required to carry a calculator with statistical functions. A binder will also be an asset to organize yourself with selected lecture notes, handouts, solutions to homework, exams etc.

Notices:
Any notice about the course will be communicated to the instructors through the emails, or though hard copies in pigeonhole. Students will be communicated by the announcements by the instructor.

Homework and Tutorials
Students are required to do the homework problems at home. The first hour of the lab would be devoted to solve the tutorial problems, and to guide how to solve other problems. The second hour of lab would be devoted to show students how to use the MINITAB statistical package and to use it to solve real life problems.
Homework Problems
Chapter Two: 2.2.1, 2.2.9, 2.3.2, 2.3.5, 2.4.3.
Chapter Three: 3.2.6, 3.2.14, 3.3.2, 3.3.10, 3.3.1.4, 3.4.1, 3.5.2, 3.6.1, 3.6.10
3.7.3, 3.7.15.
Chapter Four: 4.2.3, 4.2.12, 4.3.2, 4.3.11, 4.4.2, 4.4.7, 4.5.4, 4.5.13.
Chapter Five: 5.2.6, 5.2.17, 5.3.4, 5.3.13, 5.4.8, 5.4.13, 5.5.5, 5.5.19.
Chapter Six: 6.2.3, 6.2.6, 6.3.2, 6.3.15, 6.4.2, 6.4.7, 6.5.3, 6.5.13, 6.7.4, 6.7.11.
Chapter Seven: 7.3.4, 7.3.6, 7.4.1, 7.4.4, 7.5.2, 7.5.7, 7.5.15
Chapter Eight: 8.2.4, 8.2.8, 8.3.4, 8.3.11, 8.4.2, 8.4.9, 8.5.3, 8.5.12, 8.6.2, 8.6.13, 8.7.3, 8.7.9.
Chapter Nine: 9.2.1, 9.2.3, 9.3.2, 9.3.11, 9.3.1.2, 9.4.3, 9.4.8, 9.5.2, 9.5.14.
Chapter Ten: 10.2.2, 10.2.7, 10.3.1, 10.3.10, 10.4.2, 10.4.9.
Chapter Twelve: 12.2.3, 12.3.3, 12.3.8, 12.4.6, 12.5.4, 12.5.12, 12.6.4, 12.7.3, 12.8.2, 12.9.1.