STAT211: BUSINESS STATISTICS I
Course Outline for Semester 093

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Text and Package:
2. MINITAB Statistical Package will be used.
3. Scientific calculator with statistical functions

Course Objectives:
Introducing basic concepts of probability and statistics to business students. Emphasis will be given on the understanding of the nature of randomness of real world problems, the formulation of statistical methods by using intuitive arguments and thereby making meaningful decisions.

Assessment
Assessment for this course will be based on home work, lab, attendance, quizzes, two major exams and a comprehensive final exam, as in the following:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes¹, attendance, homework and Lab work</td>
<td>(7%+3%+3%+7%)</td>
</tr>
<tr>
<td>Exam 1 (Chapters 1, 2, 3, 7.1-7.2)</td>
<td>20%</td>
</tr>
<tr>
<td>Tuesday Jul 27, 2010</td>
<td></td>
</tr>
<tr>
<td>Exam 2 (Chapters 4, 5 &amp; 6)</td>
<td>20%</td>
</tr>
<tr>
<td>Tuesday Aug 10, 2010</td>
<td></td>
</tr>
<tr>
<td>Final Exam (Comprehensive)</td>
<td>40%</td>
</tr>
<tr>
<td>Thursday Aug 26, 2010 (8:00 AM)</td>
<td></td>
</tr>
</tbody>
</table>

General Note on Problem solving in Homework, and Exams:
Students are required to carry pens and a calculator with statistical functions to EVERY lecture, quizzes, and exams. Students are also expected to take class notes and organize their learning material in a binder for easy retrieval to help them study and review for class, exams, etc.
To effectively learn statistics, students need to solve problems and analyze data. The selected assigned problems are specifically designed to prepare you for class quizzes, lab, majors and final exam. So, it is expected that you complete these problems step-by-step and with comprehension.
Never round your intermediate results to problems when doing your calculations. This will cause you to lose calculation accuracy. Round only your final answers and you should not round less than 4 decimal places unless required otherwise.
It is to the student’s advantage to keep a binder for storing class notes, homework, and other graded assignments. Students who are organized will find it easier to find important materials when studying for exams.
A formula sheet and statistical tables will be given for you in every exam, so you only need to bring with you pens, pencils, a sharpener, an eraser, and a calculator.

¹ Once a chapter is completed, you should expect a class quiz.
## Tentative Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections</th>
<th>Topics</th>
<th>University dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1 – 1.6 &amp; 7.1 &amp; 7.6</td>
<td>What is Business Statistics, Tools for Data Collection, Populations, Samples, Data Types and measurement levels, Sampling Techniques.</td>
<td>Sat, July 10 Last day for dropping course(s) without permanent record</td>
</tr>
<tr>
<td>2</td>
<td>2.1 - 2.3 &amp; 3.1 &amp; 3.3 &amp; 3.4</td>
<td>Graphs, Charts and Tables Measures of Location</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3.1 - 3.5</td>
<td>and Measures of Variation, Coefficient of Variation, Empirical Rule, Tchebycheff’s Inequality and Standardized Data Values</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5.1 - 5.5 &amp; 6.1 - 6.5</td>
<td>Probability Distributions. The Binomial and Other Discrete Distributions, The Normal Distribution. Other Continuous Distributions (Exponential &amp; Uniform)</td>
<td>Wed, Aug 4 Last day for dropping course(s) with grade of ‘W’ thru Internet <a href="http://regweb.kfupm.edu.sa">http://regweb.kfupm.edu.sa</a></td>
</tr>
<tr>
<td>6</td>
<td>7.2 - 7.5</td>
<td>Sampling Error, Sampling Distributions of the Mean and Proportion</td>
<td>2nd Exam Aug 10.</td>
</tr>
<tr>
<td>7</td>
<td>8.1 - 8.5</td>
<td>Point and Confidence Interval Estimation of the Mean Sample Size Determination for Estimating the Mean and Estimating a Population Proportion</td>
<td>Wed, Aug 18 Last day for major exams, Last day for withdrawal from all courses with grade of ‘WP/WF’ thru the University Registrar Office</td>
</tr>
<tr>
<td>8</td>
<td>Parts of 10.1-10.2 Part of 10.3</td>
<td>Estimation for Two Population Means and Estimation of Two Population Proportions</td>
<td>Mon, Aug 23 Last day of classes</td>
</tr>
</tbody>
</table>

**Important Notes:**
We will explain the MINITAB commands in the class and the student free to do his homework any were he likes.

In accordance with University rules, nine unexcused absences will result in a grade of DN.

Attendance on time is very important. Therefore, $\frac{1}{2}$% will be deducted for each one absence.

Mostly, attendance will be checked within the first five minutes of the class. Entering the class after that, is considered as one late, and every two times late equals to one absence.

All contacts or announcements between the instructor and the students are supposed to be held on the WebCT, so the student must check his WebCT inbox at least once a day.

**Home Work Problems:**

- Handout problems will be posted on the WebCT towards the end of each chapter.
- The **Homework** should be submitted in the first Saturday after completing the chapter and no need for an announcement in advance.
- No late homework will be accepted.

**Learning Objectives:** By completing this course, students should be able to

- Distinguish between a sample and a population
- Distinguish between a statistic and a parameter
- Design a business data collection effort by using the most appropriate data sampling strategy
- Classify business data into the most appropriate type and measurement levels
- Distinguish between continuous and discrete data

- Calculate summary descriptive statistics manually and by MINITAB
- Interpret the correct meaning of summary statistics for particular real-life business problems
- Graph a correct graphical display for the correct type of data manually by MINITAB
- Interpret the correct meaning of graphical display for a particular real-life business problems
- Choose the correct graphical display for a particular business decision
- Choose the correct summary statistics for a particular business application

- Assess the correct probability for a particular business application manually and by MINITAB
- Calculate probability for different types of regular business events (marginal, conditional, and joint events) and for updated posterior business events
- Calculate expected values of future business events
- Recognize and use the correct probability distribution model for a particular business application manually and by MINITAB
- Distinguish between continuous and discrete probability distribution model
- Distinguish between distribution for sample data, distribution for population data, and distribution for sample statistics
- Understand the role of central limit theorem in the distribution of sample statistics

- Evaluate the correctness and error levels of a procedure for estimating a population parameter
- Design a business data collection effort by finding the minimum necessary sample sizes manually and by MINITAB
- Estimate parameters of a business population of interest manually and by MINITAB
- Choose the most appropriate statistical procedure for a particular type and measurement level of business data