MBA 633: Statistics for Business Decision Making  
Section 001 (Monday, CRN 71915)  
Fall 2013 Course Syllabus

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Fax: 703-993-1809  
E-mail: h singer@gmu.edu (preferred mode of contact)  
Class Times: Monday from 6:30 to 10:05 PM in Founders Hall 113, Arlington (ARLFH 113)  
Office Hours: Monday before class (from 5:00 to 6:00 PM) and by appointment  
Prerequisites: Admission to the MBA program and College Mathematics  

Course Website: Log in to Blackboard on myMason using your GMU email ID and password.

MBA Program Learning Goals (Goals addressed in this course are in bold)  
The MBA program focuses on the following program learning goals:

- Teaming & Leading - Our graduates will demonstrate the team leadership and interpersonal skills needed to form, lead, and work effectively on diverse organizational teams.
- Analytical Decision Making - Our students will demonstrate the ability to analyze uncertain complex management situations using appropriate tools, techniques, and information systems for decision-making.
- Knowledge of Functional Business Disciplines- Our graduates will demonstrate the ability to integrate knowledge from all functional areas of business into a meaningful firm-level perspective.
- Global Understanding - Our graduates will demonstrate a perspective on how businesses operate in the global environment.
- Communication Skills - Our graduates will demonstrate written, oral and presentations skills necessary to explain problems and solutions effectively and persuasively.
- Ethics and Social Responsibility - Our graduates will have a sense of professional and social responsibility in the conduct of managerial affairs.
Course Objectives:
The main objectives of this course are to provide the student with the ability to:
1. learn and apply the basic statistical techniques used to present and summarize data.
2. learn and apply the basic statistical techniques for inference, prediction.
3. understand and detect flaws in statistical reports and analysis;
4. identify the statistical tools to address specific managerial applications and business problems.
5. Use MS-Excel to perform statistical analysis.

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Harvard Excel Exam</td>
<td>5%</td>
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<tr>
<td>Mid term (in class)</td>
<td>30%</td>
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<tr>
<td>Two take home exams (group)</td>
<td>30%</td>
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<tr>
<td>Final exam</td>
<td>35%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Excel exam: Pass = 5%, Fail = 0%. Exam to be completed prior to first day of class. *There are no ‘extra credit’ assignments or other mechanisms for increasing grades.*

Final Exam: Saturday October 26, 2013 from 9:00 to 11:45 AM.

Practice Problem Sets
A list of practice problems from each of the Chapters covered from the textbook will be posted on Blackboard, along with solutions. It is your responsibility to work the problems in a timely manner and check your solutions against the posted ones. You are not required to submit these practice problems. However, working problems is key to mastering the material and doing well on exams. You should complete the practice problems each week and discuss any difficulties with me. Do NOT wait till exam time to work problems.

Keys to doing well in the course
- Course grade will be determined by the level of mastery of the subject matter as demonstrated through the exams. Mastery implies being able to (a) identify the statistical problem embedded in a given business problem (b) apply appropriate techniques to solve the statistical problem and (c) interpret the statistical results and identify their implications for the business problem. Mastery also implies that one is able to do these three things in a reasonable amount of time.
- Problem solving is the key to achieving mastery of the subject matter. If you feel you will learn better by working the practice problems in groups, by all means do so. However, and I cannot emphasize this more strongly, you must also practice problems completely on your own. This is what you will have to do on the exams. Only when you test yourself in this manner will you get a realistic idea of how well you have mastered the subject.
- I recommend bringing your textbook and a laptop to every class. We will work problems regularly in class.
- Statistics is in use all around you. Keep a lookout for applications of statistics in what you read and hear on a daily basis. This will strengthen your understanding of core concepts.
- Keep up with readings and assignments. Concepts will build on one another rather rapidly.
PLANNED COURSE SCHEDULE  
(ACTUAL PACE OF COVERAGE MAY VARY)

ALL THREE EXAMS WILL REQUIRE USE OF A LAPTOP WITH WIRELESS CONNECTIVITY AND EXCEL. YOU MAY USE YOUR TEXTBOOK AND ONE PAGE OF NOTES. NOTHING ELSE IS PERMITTED.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics &amp; Reading Assignments</th>
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| Aug 19    | Descriptive Statistics: Tabular and Graphical Methods  
(Read: Ch. 1, Sec 1.2; Sec 2.1, 2.2\textsuperscript{a}, 2.3\textsuperscript{b}, 2.4\textsuperscript{c})  
Descriptive Statistics: Numerical Measures  
(Read: Ch 3, Sec 3.1\textsuperscript{d}, 3.2, 3.3\textsuperscript{e}, 3.5)  
Introduction to Probability & Random Variables  
(Read: Ch.4, Sec 4.1, 4.2, 4.3, 4.4)  
\textsuperscript{a}exclude dot plot & stem leaf display; \textsuperscript{b}exclude Simpsons paradox; \textsuperscript{c}exclude stacked bar  
\textsuperscript{d}exclude geometric mean; \textsuperscript{e}exclude z scores. |
| Aug 26    | Discrete Probability Distributions, Binomial and Poisson  
(Read: Ch.5, Sec5.1, 5.2, 5.3, 5.5, 5.6)  
Continuous Probability Distributions  
Uniform Distribution, Normal Distribution  
(Read: Chapter 6, Sections 6.1 and 6.2) |
| Sep 06 *  | Take Home 1 distributed electronically on Tuesday, Sep 2  
Sampling Distributions  
Point Estimation, Central Limit Theorem  
(Read: Chapter 7, Sections 7.2 to 7.6)  
Interval estimation  
Confidence Intervals for Population Means & Proportions  
(Read: Chapter 8, Sections 8.1 to 8.4) |
| Sep 09    | Take Home 1 due  
Interval Estimation (cont’d.)  
Sample Size Determination  
(Read: Chapter 8, Sections 8.1 to 8.4)  
Hypothesis Testing  
Null and Alternative Hypotheses, One and Two-Tail tests  
(Read: Chapter 9, Sections 9.1 to 9.5) |
| Sep 16    | Hypothesis Testing (contd.)  
(Read: Chapter 9, Sections 9.1 to 9.5) |
| Sep 23    | Mid Term Exam (2 hour covers Chapters 1 through 8)  
Inferences about Means/Proportions with Two Populations  
(Read: Ch. 10, Sec 10.1, 10.2, 10.4) |
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<tr>
<th>Dates</th>
<th>Topics &amp; Reading Assignments</th>
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<tbody>
<tr>
<td>Sep 30</td>
<td><strong>Take home 2 handed out</strong>&lt;br&gt;Inferences about Population Variances&lt;br&gt; (Read: Ch. 11, Sec 11.1, 11.2)&lt;br&gt;<strong>Analysis of Variance</strong>&lt;br&gt; (Read: Ch. 13, Sec 13.1, 13.2)</td>
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<td>Oct 07</td>
<td><strong>Take Home 2 due</strong>&lt;br&gt;<strong>Analysis of Variance(contd.)</strong>&lt;br&gt; (Read: Ch. 13, Sec 13.1, 13.2)</td>
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<td>Oct 15 **</td>
<td><strong>Simple Linear Regression and Correlation (Cont’d)</strong>&lt;br&gt; (Read: Ch. 14, Sec 14.1 to 14.9)</td>
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<td>Oct 21</td>
<td><strong>Multiple Regression</strong>&lt;br&gt;Interpretation of Excel output, Testing for Significance&lt;br&gt; Multi-Collinearity, Estimation and Prediction&lt;br&gt; (Read: Ch 15, Sec 15.1 to 15.6)</td>
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<td>Oct 26</td>
<td><strong>Final exam: (2hr 45 min. covers chapters 8, 9, 10, 11, 13, 14, 15)</strong>&lt;br&gt;<strong>Location: regular classroom</strong>&lt;br&gt;<strong>Time, Date:</strong> Saturday 10/26/2013, from 9:00 to 11:45 AM.</td>
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* Online class on Thursday because of the Monday observance of Labor Day.
** By university policy, Monday classes meet Tuesday because of Columbus Day.

**Class Administrative Rules**

1. All course material will be made available through Blackboard. The username and password are the same as what you use for your GMU email.
2. **Honor Code:** GMU Honor code [www.gmu.edu/departments/unilife/honorcode](http://www.gmu.edu/departments/unilife/honorcode) applies to all activities related to this course. Please note: Faculty are obligated to submit any Honor Code violations or suspected violations to the Honor Committee without exception.
3. All electronic communication to the class from me, individually or as a group, will be sent only to your GMU email address. Similarly, all electronic communication directed to me should be from your GMU email address only.
4. **Disability:** If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 703-993-2474. All academic accommodations must be arranged through the ODS. **Please take care of this within the first week of the semester.**
5. Students can sign up for the Mason Alert system to provide emergency information of various sorts at [https://alert.gmu.edu](https://alert.gmu.edu).
6. An emergency poster exists in each classroom explaining what to do in the event of crises and that further information about emergency procedures exists on [http://www.gmu.edu/service/cert](http://www.gmu.edu/service/cert).
7. Cell phones & beepers: Please disable all audible signals when you are in the classroom.
**SOM Standards of Behavior**
The mission of the School of Management at George Mason University is to create and deliver high quality educational programs and research. Students, faculty, staff, and alumni who participate in these educational programs contribute to the well-being of society. High quality educational programs require an environment of trust and mutual respect, free expression and inquiry, and a commitment to truth, excellence, and lifelong learning. Students, program participants, faculty, staff, and alumni accept these principles when they join the SOM community. In doing so, they agree to abide by the following standards of behavior:
- Respect for the rights, differences, and dignity of others
- Honesty and integrity in dealing with all members of the community
- Accountability for personal behavior

Integrity is an essential ingredient of a successful learning community. Ethical standards of behavior help promote a safe and productive community environment, and ensure every member the opportunity to pursue excellence. SOM can and should be a living model of these behavioral standards. To this end, community members have a personal responsibility to integrate these standards into every aspect of their experience at the SOM. Through our personal commitment to these Community Standards of Behavior, we can create an environment in which all can achieve their full potential.

**Missed Exam Policy**
Note the date/time of all in class exams, particularly the final, and make arrangements ahead of time to avoid conflicts with these exams. Absence from an exam will result in a score of zero. A student who misses an exam due to an emergency may petition for a makeup exam. The petition must be in writing and be accompanied by appropriate documentation about the emergency. Petitioning for a makeup exam does not guarantee that one will be offered. That decision is at the sole discretion of the instructor who will determine whether the evidence offered by the student justifies the absence.

**Late Submission Policy for Take Home Exams**
25% penalty up to 24 hrs, 50% up to 48 hrs late, 100% thereafter.

**Course Grading Scheme**

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<tr>
<th>Grade Range</th>
<th>Letter Grade</th>
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<tr>
<td>90% and above</td>
<td>A/A-</td>
</tr>
<tr>
<td>80% to &lt; 90%</td>
<td>B+/B/B-</td>
</tr>
<tr>
<td>70% to &lt;80%</td>
<td>C</td>
</tr>
<tr>
<td>&lt;70%</td>
<td>F</td>
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**Grading criteria for exams**
Numerical problems involving statistical calculations generally have precise answers. Grading will be based on correctness of answers and demonstration of relevant intermediate steps. Correct final answers without intermediate steps will not receive full points. For any assignments where interpretation of statistical analyses and narratives are required, evaluation will depend on both numerical correctness as well as the quality of the arguments made or conclusions that are drawn from the statistical analyses. For such problems, the absence of numerical mistakes does not, by itself, result in a high score. **Higher quality narratives will receive higher scores.**