MBA 633-Sec 001: Statistics for Business Decision Making
Thursday 7:20-10:00 pm, ARLFH 113
(Syllabus – Spring 2012)

Instructor: Prof. Sid Das
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Fax: 703-993-1809
E-mail sdas@gmu.edu
Office Hours: Thursday: 6:00 p.m. - 7:00 p.m.
Prerequisites: Admission to the MBA program and College Mathematics
Textbook: Statistics for Business & Economics, 11th Revised Edition,
By David R. Anderson, Dennis J. Sweeney, and Thomas A. Williams,
Thompson/South-Western, 2010.

Course Website gmu.blackboard.com
Web URL (Interactive Statistics Problems):
http://mason.gmu.edu/~sdas/stats600/content1.htm

MBA Program Learning Goals

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. Understand and apply statistical techniques in describing and analyzing data;
2. Apply statistical analysis for inference, prediction, and decision making;
3. Understand and detect flaws in statistical reports and analysis;
4. Identify statistical tools for specific managerial applications
5. Use MS-Excel to perform statistical analysis.
Grading Scheme:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Case Study 1 (To be done individually)</td>
<td>15%</td>
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<td>Case Study 2 (To be done individually)</td>
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<td>Group Case 1</td>
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<td>Group Case 2</td>
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<td>Final exam</td>
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<td>Assignments</td>
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<td><strong>Total</strong></td>
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Assignments/Case Analysis:

There will be several home assignments (to be done individually), and mini-case studies (both group and individual) assigned in class. Students are expected to solve all assigned problems and case studies, which will be collected and graded. Both class assignments and case analyses are an important component of the learning process, and each assignment/case must be turned in no later than its due date. Group cases will have internal group evaluations. Individual assignments are to be solved individually with no assistance from anyone.

Recommendations

- This course has a large amount of quantitative content. The best way to master the material is to solve as many problems as you can.
- Bring your textbook and laptops to every class. We will work lots of problems in class and you will learn more from those exercises if you have the software to handle the number crunching.
- Be sure to compare your homework answers to the solutions provided in class and understand any mistakes you may have made.
- Statistics is in use all around you. Keep a lookout for applications of statistical concepts and data in what you read, hear and do on a daily basis. This will strengthen your understanding of core concepts.
- Keep up with readings. Concepts will build on one another rather rapidly.

Course Grading

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<tr>
<th>Percentage</th>
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<td>90% and above</td>
<td>A/A- (split to be decided by instructor based on clustering)</td>
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<td>80% to &lt; 90%</td>
<td>B+/B/B- (split to be decided by instructor based on clustering)</td>
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<td>70% to &lt; 80%</td>
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Academic Integrity

GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process.

The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else’s work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.
GMU Email Accounts
Students must use their Mason email accounts—either the existing “MEMO” system or a new “MASONLIVE” account to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

Other Useful Campus Resources:

OFFICE OF DISABILITY SERVICES
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 993-2474. All academic accommodations must be arranged through the ODS. http://ods.gmu.edu

OTHER USEFUL CAMPUS RESOURCES:

WRITING CENTER: A114 Robinson Hall; (703) 993-1200; http://writingcenter.gmu.edu

UNIVERSITY LIBRARIES “Ask a Librarian”
http://library.gmu.edu/mudge/IM/IMRef.html

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS): (703) 993-2380;
http://caps.gmu.edu

UNIVERSITY POLICIES
The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.
<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
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<tbody>
<tr>
<td>Jan-26</td>
<td><strong>Introduction to Course</strong></td>
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<td>Course Overview</td>
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<td><strong>Descriptive Statistics:</strong></td>
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<td>Tabular and Graphical Methods</td>
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<td><em>(Read: Chapter 1, all sections; Chapter 2, Sections 2.1, &amp; 2.2)</em></td>
<td>Chapter 2</td>
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<td>Measures of Location and Measures of Variability</td>
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<td><em>(Read: Chapter 3, Sections 3.1, 3.2)</em></td>
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<td><strong>Individual Case Study-1: Case-Pelican Stores (pp.71-72), AND</strong></td>
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<td>Pelican Stores (p.138 - Q1 only); Due Date (2/02)</td>
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<td>Feb-02</td>
<td><strong>Descriptive Statistics: Numerical Measures</strong></td>
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<td>Measures of Relative Location</td>
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<td>z-scores</td>
<td>Chapter 3</td>
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<td>Chebyshev's Theorem and Empirical Rule</td>
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<td>Exploratory Data Analysis</td>
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<td><em>(Read: Chapter 3, Sections 3.1, 3.2, 3.3 and 3.4)</em></td>
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<td><strong>Individual Assignment-1: To be assigned in class; Due Date (2/09)</strong></td>
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<td>Feb-09</td>
<td><strong>Introduction to Probability</strong></td>
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<td><strong>Random Variables</strong></td>
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<td><strong>Discrete Probability Distributions</strong></td>
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<td>Expected Value and Variance</td>
<td>Chapter 5</td>
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<td><em>(Read: Ch. 4, Section 4.1; Chapter 5, Sections 5.1, 5.2, &amp; 5.3)</em></td>
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<td><strong>Individual Assignment-2: To be assigned in class, Due Date (2/16)</strong></td>
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<td>Feb-16</td>
<td><strong>Binomial &amp; Poisson Probability Distributions</strong></td>
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<td><em>(Read: Chapter 5, Section 5.4, 5.5)</em></td>
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<td><strong>Continuous Probability Distributions</strong></td>
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<td>Uniform Distribution</td>
<td>Chapter 6</td>
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<td><em>(Read: Chapter 6, Sections 6.1)</em></td>
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<td><strong>Individual Assignment-3: To be assigned in class, Due Date (2/23)</strong></td>
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<td>Feb-23</td>
<td><strong>Continuous Probability Distributions (contd.)</strong></td>
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<td>Normal Distribution</td>
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<td><em>(Read: Chapter 6, Sections 6.2)</em></td>
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<td><strong>Group Case-1: Case-Specialty Toys (pp.261-262), Due Date (3/01)</strong></td>
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<td>Mar-01</td>
<td><strong>Sampling Distributions</strong></td>
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<td>Point Estimation</td>
<td>Chapter 7</td>
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<td>Central Limit Theorem</td>
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<td><em>(Read: Chapter 7, Sections 7.1 through 7.6)</em></td>
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<td><strong>Individual Assignment-4: To be assigned in class, Due Date (3/04)</strong></td>
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<td>Mar-8</td>
<td><strong>Interval Estimation</strong></td>
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<td>Confidence Intervals for Population Means,</td>
<td>Chapter 8</td>
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<td>Confidence Intervals for Population Proportions</td>
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<td>Sample Size Determination</td>
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<td><em>(Read: Chapter 8, Sections 8.1 through 8.4)</em></td>
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<td><strong>Individual Assignment-5: To be assigned in class, Due Date (3/22)</strong></td>
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<td>Mar-22</td>
<td>Hypothesis Testing</td>
<td>Chapter 9</td>
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<td>Null and Alternative Hypotheses, One-Tail and Two-Tail tests</td>
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<td>Significance Levels, p-values</td>
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<td>(Read: Chapter 9, Sections 9.1 through 9.8)</td>
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<td><strong>Individual Assignment-6:</strong> To be assigned in class, Due Date (3/29)</td>
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<td>Mar-29</td>
<td>Inferences about Means/Proportions with Two Populations</td>
<td>Chapter 10</td>
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<td>(Read: Chapter 10, Sec 10.1, thru 10.4)</td>
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<td><strong>Individual Assignment-7:</strong> To be assigned in class, Due Date (4/05)</td>
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<td>Apr-5</td>
<td>Inferences about Two Population Variances</td>
<td>Chapter 11</td>
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<td>(Read: Chapter 11, Section 11.2)</td>
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<td><strong>Analysis of Variance</strong></td>
<td>Chapter 13</td>
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<td>(Read: Chapter 13, Sections 13.1 through 13.3)</td>
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<td><strong>Individual Case Study - 2 Assigned; (Due by 4/12)</strong></td>
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<td>Apr-12</td>
<td>Simple Linear Regression and Correlation</td>
<td>Chapter 3</td>
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<td>Correlation Coefficient</td>
<td>Chapter 14</td>
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<td>Computer Solution</td>
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<td>(Read: Chapter 3, Section 3.5; Chapter 14, Sections 14.1 through</td>
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<td>Apr-19</td>
<td>Simple Linear Regression and Correlation (Cont’d)</td>
<td>Chapter 14</td>
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<td>Testing for Significance, Model Verification</td>
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<td>Residual Analysis, Estimation and Prediction</td>
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<td>(Read: Chapter 14, Sections 14.4 through 14.9)</td>
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<td><strong>Multiple Regression</strong></td>
<td>Chapter 15</td>
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<td>Interpretation of computer output</td>
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<td>Testing for Significance</td>
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<td>Multi-Collinearity, Estimation and Prediction</td>
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<td>(Read: Chapter 15, Sections 15.1 through 15.6)</td>
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<td><strong>Group Case-2: To be assigned in class, Due Date (5/03)</strong></td>
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<td>Apr-26</td>
<td>Multiple Regression (Cont’d)</td>
<td>Chapter 15</td>
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<td>Qualitative Independent variables</td>
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<td>Residual Analysis</td>
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<td>(Read: Chapter 15, Sections 15.7 and 15.8)</td>
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<td>May-03</td>
<td>Test of Goodness of Fit, Tests of Independence</td>
<td>Chapter 12</td>
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<td>(Read: Chapter 12, Sec 12.1, and 12.2)</td>
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<td>May-10</td>
<td><strong>Final Exam</strong></td>
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