BUS 310: Business Analytics II
(Syllabus - Summer A, 2016)

Instructor:  Prof. Sid Das
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Course Website:  Blackboard
Office Hours:  12:00 - 1:00 p.m., Mon – Wed - Fri, OR by appointment

University Catalog Description:
This course introduces the concepts of modeling relationships contained in data and the use of linear models to make predictions in business. Topics include estimation, hypotheses testing, statistical inference, analysis of variance and linear regression techniques. The course also introduces students to fundamentals of linear programming to solve optimization problems in business.

Prerequisites:
1.  BUS 210 or equivalent with a grade of C or better
2.  Essential and expected knowledge: Proficiency in elementary algebra and geometry. Familiarity with recent versions of MS Word, PowerPoint, and Excel. Deficiencies in any of these areas should be self-remediated.

Required Texts and Learning Materials:

Undergraduate Program Learning Goals (Goals addressed in this course are in bold)
1.  Our students will be competent in their discipline.
2.  Our students will be aware of the uses of technology in business.
3.  Our students will be effective communicators.
4.  Our students will have an interdisciplinary perspective.
5.  Our students will be knowledgeable about global business and trade.
6.  Our students will recognize the importance of ethical decisions.
7.  Our students will be knowledgeable about the legal environment of business.
8.  Our students will be knowledgeable about team dynamics and the characteristics of effective teams.
9.  Our students will understand the value of diversity and the importance of managing diversity in the context of business.
10.  Our students will be critical thinkers.

NOTE: THERE WILL BE NO CELL-PHONE USE IN CLASS. 1% POINT WILL BE DEDUCTED FROM THE STUDENT’S FINAL SCORE FOR EVERY TIME CELL-PHONE IS USED IN CLASS.
Course Objectives:
The basic learning objectives of this course are for students to:
1. Understand and apply statistical methodologies and techniques to solve typical business problems.
2. Understand a business situation and recognize the type of problem, to formulate the problem quantitatively, and to associate the appropriate probabilistic model and statistical technique.
3. Master the essentials of the concepts and tools of data representation, probability models, and statistical inference, emphasizing business applications through problems.
4. Develop the critical thinking and independent problem solving skills necessary to independently analyze business data and model business situations.
5. Use software tools (MS-Excel) to perform statistical analysis.
6. Foster the communication and presentation of statistical results and inferences.

Approach to Learning:
This course is geared towards the future business professional engaged in decision making or decision support. The emphasis is on business applications, and not mathematics. Lectures are the formal presentation and teaching of the material and basic problem solving skills; discussions and questions are highly encouraged.

Grading Scheme:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Mid-Term Exam</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
</tr>
<tr>
<td>Homework (2)</td>
<td>20% (10% each)</td>
</tr>
<tr>
<td>Excel Assignments</td>
<td>10%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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EXAMS: Exam dates are provided in the schedule. No make-up exams will be given except in extreme emergency.

Attendance: Class attendance is essential part of learning for this course. If you have to miss any lecture, you are responsible for obtaining any information given in the class. I will take attendance on random days.

Exams:
1. Two (2) mandatory exams will be given, as announced in the syllabus. The exams will be comprehensive of the topics they cover. All together, the exams count for 70% of the final course average.
2. Exams are based upon the class lectures, textbook material, and discussion of the material covered.
3. All examinations and homework are to be by individual effort as they will be graded. NO collaboration of any kind is permitted. See the honor code paragraph below. Any collaboration will be treated as an Honor Code violation.
4. All exams given in class are closed book.
5. Exams may be made up only under extreme emergencies AND at the sole discretion of the instructor. A penalty for lateness may be assigned. Missed exams will be assigned a score of zero.

Homework:
1. There are two homework assignments. The homework will together count for 20% of the final course grade. Each homework will consist of a major homework and some minor homework(s).
2. It is in the best interest of the student to complete each and every homework assignment. Homework is for the student’s benefit; it is a diagnostic tool by which the student may assess their understanding and performance. Failure to do so will adversely affect performance, and will negatively impact exam and course grades.
3. Homework assignments will be posted on the website.
4. Homework problems, both their assignment and solution, are the sole responsibility of the individual student.
Excel Assignments:
These will be assigned and graded. Due dates will be given in class.

Class Participation:
1. Performance is highly associated with class attendance and participation.
2. Students are expected to attend all scheduled classes. Attendance may be taken periodically.
3. Class participation consists of active engagement in the presentation of material and through questions and discussions. Students may be asked to solve problems on the board.
4. The student is solely responsible for all assignments and material presented in class even if missed due to absence.

Honor Code: Students are obligated to strict adherence to the University honor system and code, as described in the 2016 George Mason University catalog.

Course Grade:
1. Students must be officially registered in this section to receive a grade. It is the sole responsibility of the student to verify their own registration status. (I will not verify your registration.) Specifically, you will not receive a grade if your name does not appear on the official class list. (Don’t wait until the end of the semester to be surprised.) Registration problems should be directed to either the SOM Office of Student Services or the Registrar’s Office.
2. Whole letters, (No pluses and minuses), will be assigned as the final course grades.
3. The final letter grade is assigned objectively and strictly according to the WEIGHTED average of the numerical scores of all exams and quizzes.
4. Final course letter grade assignments:

<table>
<thead>
<tr>
<th>COURSE AVERAGE</th>
<th>COURSE GRADE</th>
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<tbody>
<tr>
<td>90.00 to 100</td>
<td>A</td>
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<tr>
<td>80.00 to 89.99</td>
<td>B</td>
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<tr>
<td>70.00 to 79.99</td>
<td>C</td>
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<tr>
<td>60.00 to 69.99</td>
<td>D</td>
</tr>
<tr>
<td>≤ 59.99</td>
<td>F</td>
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Website Contents:
1. The BUS 310 course website on Blackboard consists of separate categories containing this syllabus, Lecture Notes, and student scores.
2. The Blackboard website will be updated continually. During the semester, new documents may be created and existing documents may be modified as appropriate.
3. Students will be informed beforehand of the pertinent documents for the next class. It is recommended that students download the relevant documents prior to class. A suggested use of the documents, especially the lecture notes is to annotate them with their own personal notes during class.
4. The Blackboard website is not a substitute or replacement for classroom instruction. It is provided solely to augment classroom presentation and discussion of the material.
5. Download the pertinent course documents before class and well before exams and assignment due dates. Bring these to class as your notes for annotation.
6. The Blackboard website is an electronic medium to facilitate the transfer and dissemination of the course content. It is not a replacement or substitute for attending class.
7. For technical help with Blackboard, contact ITU Support Services.
Connectivity/Computer/Software/Email:
1. Every GMU student is provided with e-mail account. I sometimes e-mail course announcements to the class list. It is the student’s responsibility to activate and routinely check their GMU e-mail account.

2. Access to the internet and a computer is required. Most of the course material is available on-line from my Blackboard course website and is accessible for download over the Internet.

3. Communication will be via Blackboard and/or your GMU e-mail only. It is the student’s responsibility to have reliable and adequate Internet connectivity and access. This includes the use of GMU computers available on campus. Further, the student must be familiar with Internet browsers and navigation.

4. The PC version of Microsoft Excel 2013 will be used in this class. The student is required to bring a laptop to class with Excel.

5. Microsoft Excel 2013 is available for download for GMU students. The software may run only on a computer with the appropriate Microsoft Windows operating system. During this class, we are unable to provide advice and support for the use of Macintosh computers and other versions of this software.

6. It is a student’s responsibility to make sure your assignments meet the required PC standards. If you have a Mac, you may need to have a dual-booting or virtual machine to run the Microsoft Excel program correctly.

7. For technical help with your personal computing systems, call the GMU support center at 703-993-8870 or send e-mail to support@gmu.edu. However, it is the student’s responsibility to work with their ISP or personal consultant to determine and resolve connectivity and other problems.

8. The student must be familiar with the basics of the recent versions of MS Office products, especially MS Excel, MS Word and PowerPoint.

Disability: All academic accommodations due to disability must be arranged through the Office of Disability Services (ODS). If you are a student with a disability and you require academic accommodations, please contact ODS at 703-993-2474. I will cooperate fully with the ODS to accommodate a student’s special needs.

Schedule:
1. Some sections in text chapters will be skipped, as announced. Some material not contained in the text may be presented in class, as will be noted.

2. There will be no classes or office hours on Monday, May 30, 2016.

   NOTE: The schedule given in the next page is tentative and may be subject to change.
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<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>5/16</td>
<td>Course Overview</td>
<td>ES Chapter 7</td>
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<tr>
<td></td>
<td>Sampling Distributions</td>
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<tr>
<td>5/18</td>
<td>Interval Estimation <strong>Homework-1 ASSIGNED, (Due 5/27)</strong></td>
<td>ES Chapter 8</td>
</tr>
<tr>
<td>5/20</td>
<td>Interval Estimation (Continued) Hypothesis Testing</td>
<td>ES Chapter 8, ES Chapter 9</td>
</tr>
<tr>
<td>5/23</td>
<td>Hypothesis Testing (Continued)</td>
<td>ES Chapter 9</td>
</tr>
<tr>
<td>5/25</td>
<td>Comparisons Involving Means</td>
<td>ES Chapter 10</td>
</tr>
<tr>
<td>5/27</td>
<td><strong>Homework 1 is due today</strong></td>
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<tr>
<td></td>
<td>Exam 1 Review</td>
<td></td>
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<tr>
<td>5/30</td>
<td><strong>MEMORIAL DAY (MONDAY)</strong></td>
<td><strong>NO CLASS</strong></td>
</tr>
<tr>
<td>6/01</td>
<td><strong>EXAM - 1</strong></td>
<td>Exam covers all material covered until end of Chapter 10</td>
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<tr>
<td>6/03</td>
<td>Comparing Population Variances</td>
<td>ES Chapter 10</td>
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<tr>
<td></td>
<td>Analysis of Variance (ANOVA)</td>
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<tr>
<td>6/06</td>
<td>Inferences for Proportions</td>
<td>ES Chapter 11</td>
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<td></td>
<td>Simple Linear Regression</td>
<td>ES Chapter 12</td>
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<tr>
<td>6/08</td>
<td>Multiple Linear Regression</td>
<td>ES Chapter 13</td>
</tr>
<tr>
<td>6/10</td>
<td>Linear Programming</td>
<td>BA Chapter 8</td>
</tr>
<tr>
<td>6/13</td>
<td>Optimization</td>
<td>BA Chapter 8</td>
</tr>
<tr>
<td>6/15</td>
<td><strong>Homework 2 is due today</strong></td>
<td></td>
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<tr>
<td></td>
<td>Final Exam Review</td>
<td></td>
</tr>
<tr>
<td>6/17</td>
<td><strong>FINAL EXAM (7:30 am – 10:15 am)</strong></td>
<td>Exam is on all material covered after Exam 1</td>
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