BUSA 3110 – Fall 2017 – Melton Section
Statistics for Business – Full Syllabus
3 semester hours

Professor: Dr. Kim Melton
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Office Hours 8:25 – 8:55 MWF; 9:55 – 10:55 MWF; 1:25 – 2:55 MWF
Other times by appointment (or by chance—just drop by)

Meeting Location: Traditional Classroom on Monday and Friday; Lab (NOC 109) on Wednesday

Prerequisites: Admission to Upper Division and MATH 2400 with a grade of at least C.

Course Description: A second course in statistical methods with special orientation to applications in business. Emphasis will be placed on application of statistical techniques, assessing their appropriateness, and communicating results to various audiences. Topics include data collection, sampling, data visualization, data analysis, model building using regression, and other statistical techniques. Statistical software is used extensively in the course. This course should be taken as soon as the prerequisites are satisfied.

Course Objectives: Upon completion of this course, students should be able to:

- select appropriate statistical methods to guide *decision-making*
- generate and use statistical output to analyze data
- identify the limitations of the statistical methods covered
- communicate how statistical studies were conducted and the results of those studies
- recognize ethical issues related to the collection and analysis of data and the communication of the results of the analysis

Time Commitment: You should expect to spend approximately 2 hours out of class for each hour in class.

Texts and Other Required Support Material

1 and 2) Textbook and MyStatLab: These come together in a custom package available from the Campus Bookstore. The package includes selected chapters from *Business Statistics*, 3rd Edition by Sharpe, De Veaux, and Velleman in loose-leaf format and access to MyStatLab. MyStatLab provides electronic access to the entire textbook. MyStatLab recommends using the Chrome browser. Directions for accessing MyStatLab for your specific course and alternative ways to obtain these required materials are posted at the following website: http://faculty.ung.edu/kmelton/busa3110.html.

3) Access to the web (for download of software and access to other resources)

4) Access to JMP Statistical Discovery Software (JMP Pro version 13). This software is available for you to install on your own computer (Windows or Mac) and is included in your fees. This software is available at software.ung.edu. Mac users click on "Initial download of Mac JMP Pro Version" to install the software. Windows users, open the "Instructions for downloading" and follow these instructions. If you do not want to download JMP to your personal machine, you can use the Virtual Lab (see item 7 below) or JMP is loaded on some computers on campus.

5) Access to Desire2Learn (D2L) e-Learning site for this course. During the first week of the semester, all material will be posted on a publicly accessible website (http://faculty.ung.edu/kmelton/busa3110.html). Starting the second week of class, all of my sections of BUSA 3110 for Fall semester will use the D2L site listed as Statistics for Business Section DA Fall 2017. D2L identifies Firefox and the preferred browser. Note: I have not integrated MyStatLab into D2L (i.e., these will require separate logins and I do not use the email within D2L).

6) Access to Microsoft Office. (For the link to install Office without additional cost to you, see the right side of: https://my.ung.edu/departments/information-technology/Pages/default.aspx).
7) (recommended for backup): Access to the Virtual Lab at: https://my.ung.edu/departments/information-technology/Pages/Remote-Access.aspx When you are having problems using JMP on your own machine or having browser issues with MyStatLab this allows you to remote in to a computer configured like the ones in the labs on campus.
8) A stand-alone calculator (i.e., not the one on your phone or connected to a device that has internet access). The calculator should be able to do basic arithmetic and statistics (mean and standard deviation for one variable).

Methods of Instruction

- Class will meet in a traditional classroom on Mondays and Fridays. These classes will use a combination of presentation of situations where the theory applies, interactive lectures to present theoretical material, small group exercises, and interpretation of output from previous labs sessions. On Wednesdays, class will meet in NOC 109 for hand-on instruction. Regardless of the location, you will be expected to actively engage in the class through asking and answering questions. Although correct answers are desired, sometimes we learn more when we explore wrong answers—and I learn where you are struggling when I "see" your thought processes.
- Computation is a key part of any statistical analysis; but in today's environment, most of the calculations can be done by a calculator or computer. JMP Statistical Discovery Software will be used for most of the analysis in the course.
- Working out of class graded and ungraded assignments provide the experience necessary to think statistically and apply statistical techniques appropriately.

Course Format

The presentation of this course recognizes that Statistic involves collecting **data**, transforming that data into **information** to describe situations, and using the information to develop **knowledge** (insight) so we can **understand** (explain) how and why outcomes vary. Throughout this process of going from data to information to knowledge and understanding, we will explore the **wisdom** required to use the tools ethically, to evaluate the effectiveness of various options, to understand assumptions made, and to communicate the analysis to various audiences.

<u>Sequence of topics and supporting coverage</u>

- Data - What is it, Types of data, How can we use it (Chapters 1 and 24)
- Preparing Data for Analysis – supplemental tutorials (to introduce JMP and data cleansing in general)
- Summarizing Data – Highlights of Visual Tools (Chapters 2, 3, and 4)
- Summarizing Quantitative Data – For Samples and for Populations
  (Chapters 3, 6*, and 9 [one variable], and Chapters 4 and 15 [multiple variables])
  *Chapter 6 is not included in the custom text but is available through MyStatLab
- Simple Linear Regression as a descriptive technique (Chapter 4)
- Statistical Inference – Hypothesis testing (p value approach) and Confidence Intervals (Chapters 10–12)
- Simple Linear Regression for inference (Chapters 15 and 16)
- Multiple Regression and Model Building (Chapters 17 and 18) plus supplemental tutorials
- Summarizing Data – Selecting the appropriate Visual Tool (Chapters 2, 3, 4) plus supplemental tutorials
- Collecting "Good" Data (Chapter 8) plus supplemental tutorial

Practice Problems

To learn statistics, you must practice. Practice comes from attempting to work problems (from start to end), identifying what you don't understand, and dealing with the areas where you are struggling. The Study Guide identifies specific practice problems from the end of the chapters in the book along with some additional locally provided practice problems that will help you develop knowledge and skills related to the specific topic covered in class. You are encouraged to work together on these assignments and to seek detailed assistance via email or

during office hours if you have questions. These problems are not graded during the semester, but provide a way to prepare for graded assignments. The purpose of these problems is to help you learn the material so that you can apply the same concepts to new / similar problems. To use a sports analogy, you must practice before games (to improve the chances of winning)! The problems in the Study Guide are the practice and the graded assignments are the games.

Course Blog

A Course Blog will be available on D2L. This is your "Go to place" for staying up-to-date on course expectations. The blog will include reading assignments, links to Preparation Assignments, announcements of Quiz dates (usually at least a week in advance), announcement of MyStatLab assignments, and identification of Study Guide problems that relate to the material for each day. The entries for a stated date describe the topics covered that day in class and the homework that should be completed ***following*** that class day. Unless otherwise stated, all homework assignments should be completed prior to the next class period.

Grading

Your grade will come from a combination of three different types of assignments—1) Preparation, 2) MyStatLab (basic learning), and 3) Quizzes and In-class Exercises (understand and communicate learning)

Preparation	20 points
MyStatLab	20 points
Quizzes and In-class exercises	60 points (at least 10 of the 60 comes from the final)
MAX possible points =	100 points

You must earn at least 90 points to receive an A; 80 for a B; 70 for a C; and 60 for a D.
Remember that all BBA students must earn a grade of C or higher in this course to graduate.

Preparation Assignments (20 percent): These are related to reading materials or assignments to create specific documents (e.g., JMP output, a JMP data table for use in class) that prepare you for the topics to be covered in class. Most of these assignments will be submitted to D2L with a due time of 11:30pm (and most will be on a Sunday night). Each assignment will be assigned a point value (typically 1 – 3 points). Part of the grade for these assignments comes from demonstrating that you have attempted to respond to the assignment; and part of the grade ties to the correctness of your answers. Your Preparation Grade will be determined by calculating the total number of points earned divided by the total points available; then multiplying this by 100. [Example: If you earned 15 or 24 points, your Preparation Grade would be (15/24) * 100 = 62.5]

MyStatLab Assignments (20 percent): These assignments help you develop the basic skills to transform Data into Information. During the semester, there will be 10 – 15 graded MyStatLab assignments. You may use your notes and textbook. These are designed to take approximately 20-30 minutes to complete. The problems are algorithmic versions of the identified problem printed in the textbook. Typically, these assignments will be released at least a week before they are due, and you will have a maximum of three of attempts to complete the assignment. The highest grade from your three attempts is recorded. Attempting the assignment near the time it becomes available is recommended. This alerts you to the kind of material that will be covered, provides a grade in case "life happens" before the deadline, and lets you go back and change the answers closer to the deadline. Most deadlines will be 11:30pm (and most will be due on Tuesday nights). Each assignment will be graded on a 0-100 scale and graded in MyStatLab. Your MyStatLab grade will drop the two lowest MyStatLab grades and average the remaining grades.

Quizzes and In-class Exercises (60 percent): These assignments require you to go beyond the Data/Information level of data analysis and address analysis issues related to Knowledge, Understanding, and Wisdom. Most of these assignments will be completed in class and will be announced at least a week in advance. Quizzes will be individual assignments; and in-class exercises will be completed in small groups. Quizzes will be designed to be 20 – 30 minutes; and in-class exercises could be up to the full class period. During the semester, there will be 8 assignments with each graded out of 10 points. Two of these will be on December 13 ("the Final"). Your points will be determined from the sum of 6 of the 8 assignments. One of the Final assignments will be designated as "required." The other five grades will be the highest grades of the remaining 7 assignments.

[Example: If you earned a grade of 8 on the required final problem and the top five of your other grades add up to 41, then you would have earned 49 of the 60 points possible for quizzes or 81.66)]

Course Grade (100 max): To determine your course grade, you find the weighted average of your grades: Final grade = .2(Prep grade) + .2(MyStatLab grade) + .6(Quiz grade).. [Example: Using each of the examples above and assuming the average for MyStatLab was a 90, the course grade would be .2(62.5) + .2(90) + .6(81.66) = 12.5 + 18 + 48.996 = 79.496 -- thus a C in the course.]

Final Exam: As noted above, your Final Exam will consist of two Quizzes with the grade for Quiz 7 included in your final grade. The final will be administered in the lab based on the schedule provided by the university.

Class time	**Final Time and Day**
9:00 – 9:50 MWF	8:00 – 10:00 Wednesday, December 13, 2017
11:00 – 11:50 MWF	10:20 – 12:20 Wednesday, December 13, 2017
2:00 – 2:50 MWF	12:40 – 2:40 Wednesday, December 13, 2017

General Expectations 1. Be in Class … 2. On Time … 3. Prepared … 4. Engaged

Attendance: Attendance refers to being present and engaged in class (i.e., you are present in mind and body)! You are expected to attend class each day. Students who miss 5 regularly scheduled class sessions will be considered to have violated the attendance policy. Missing too many classes may result in a grade of WF. Any time you miss class, you are absent. See the section on Make-ups for the implications of excused vs. unexcused absences.

Preparation: Students should arrive on time, stay for the entire class, and be prepared for class. "Prepared" means that each student should have read the assigned material, attempted all practice problems, and submitted all Preparation assignments. Students who are unable to complete a practice problem should seek help during office hours, via e-mail prior to class time, or at the start of class.

Participation and Engagement: Statistics is like a foreign language; and, like learning a foreign language, learning statistics requires active involvement on your part. Part of the process of learning statistics involves new ways of thinking. You are expected to attempt to answer questions in class and to ask questions as they arise. Answers that appear to be "common sense" can be misleading when variation is taken into account. As a consequence, often you will be asked to explain the thought process that you used to reach an answer. Sometimes the greatest steps in learning come from understanding when/why a specific answer is not appropriate in a given setting.

Graded Assignments and Deadlines: MyStatLab assignments must be submitted prior to the posted deadline—late MyStatLab submissions will receive a grade of 0. Preparation assignments submitted between the announced deadline and the 9:00am the next morning will receive a 10% grade penalty. For assignments submitted after 9:00am, a grade of 0 will be recorded. Most Quizzes and all In-class Exercises will be administered in class. When the assignment is announced, you will be given additional information about the length of the assignments and the support materials allowed during the assignment. All students in the class will have the same "start" and "end" times for the assignments—therefore, if you come in late or leave early, you will not have as long to complete the assignment. Any quiz administered out of class that is submitted after the deadline will be subject to a penalty of 10% per day (or fraction of a day—e.g., an assignment submitted 2 hours late will have a 10% penalty and one submitted 25 hours late will have a 20% penalty). Unless otherwise specified, electronic submission should be in a format readable by MS Office for Windows or JMP Pro 13. FAXed assignments are not accepted without prior approval. Some graded assignments may be copied for assessment purposes. Once grades (or answers to the questions) have been provided, late assignments will not be graded, and a grade of 0 will be recorded.

Make-ups: If a student will miss an In-class assignment due to an excused absence, arrangements for a make-up should be made ***prior to the time of the assignment***. If the absence is unplanned, timely notification and

documentation will be required to consider a make-up. No make-ups will be given for unexcused absences and a grade of 0 will be recorded. Also, no make-ups will be provided after graded assignments (or answers) have been released to students. As a general rule, make-ups for out of class assignments and for in-class exercises will not be provided.

Individual and Collaborative Work: Students may collaborate on practice problems in the Study Guide. This means that students may work together; this does not mean that students may divide an assignment so that each student does separate parts. Remember learning how to work the type of problem provided is more important than getting the answer to an individual problem.

All work on assignments that are submitted for grading is to be completed by the individuals named on the submitted assignment. If an assignment is listed as individual (or to be done independently), **no conversation** about the assignment may take place between individuals; for graded group assignments, the submitted work must be completed by the individuals in the group submitting the paper without conversation with individuals outside of that group. Inappropriate communication (virtual or otherwise) will be treated as Academic Dishonesty and a violation of the Academic Integrity Policy (as described in the Student Handbook-under Code of Conduct). Internet search engines or plagiarism detection software may be used to determine if students have plagiarized material and violated this policy.

Calculator: Each student is expected to have (and know how to use) a calculator with statistical mode. Calculators on cell phones may not be used for quizzes.

Extra Credit: The grading approach provides the possibility to drop some grades. Effectively, this provide extra credit. In addition, some graded assignments will include an extra credit question. The only other kind of extra credit will come when a student reports a significant mistake in support material provided on D2L or in other course material. The first student to report the error will be eligible for the extra credit.

Telephones: North Georgia uses Blackboard Connect Emergency Notification System to communicate emergency messages to the university community. If you have not already gone to your Banner account and registered your number(s), please consider doing so. During class, please set your phone to vibrate, put your phone away, and refrain from answering calls or checking text messages if your phone is the only one "ringing." *Telephones must be put away during class*.

Supplemental University Information:
Please see http://ung.edu/academic-affairs/policies-and-guidelines/supplemental-syllabus.php for university policies related to the following plus more:

• Disability Services	• Academic Exchange
• Academic Integrity	• Inclement Weather*
• Disruptive Behavior	• Course Grades
• Class Evaluations	• Withdrawal Process

Also, see https://ung.edu/academics/academic-calendars/2017-fall.php for important dates for the semester (drop/add, withdrawal, breaks, etc.).

New University Policies Since Last Spring

Roll verification: The Registrar's Office will withdraw (W grade on transcript) students whose names are marked as non-attending by faculty during the Roll/Attendance Verification periods. In the past, students reported as non-attending at Roll Verification were dropped (the course disappeared from the transcript and from the financial obligations of the course).

Course repeats (attempts): Students may only attempt a course three times at UNG regardless of whether a "W" or a grade was assigned to the course (except for Learning Support and ESL courses).