

BUAL 2600: Business Analytics I

Fall 2014

Class Meetings: T/Th 9:30-10:45; Lowder 19

Professor: Dr. Jones-Farmer; Office, 420 Lowder; Phone: 844-6513; email: ajones@auburn.edu

Office Hours: 11:00-12:00 T/Th
2:00- 3:00 T/Th

GTA: Nicholas Billiris; email: nmb0006@tigermail.auburn.edu

GTA Office: 425 Lowder

GTA Office Hours: 1:30-3:00 M/W

Prerequisites: MATH 1680 or equivalent; COMP 1000 (may be taken as a co-requisite)

Required Course Materials:

1. Access to McGraw Hill Connect and LearnSmart, an online smart e-book. These materials are being tested in this class and are available to you free of charge with the login that I will provide you through Canvas.
2. Lecture notes. These are available for download via the link from the course Canvas site
3. Additional reading materials provided via Canvas.

This course will cover eight modules briefly described below:

Module 1: Why Business Analytics? (1.25 hours) Students will be exposed to the reasons that many companies use analytics to create and sustain a competitive advantage.

Module 2: What is data? (1.25 hours) Students will learn how data are stored, the difference between structured and unstructured data, the difference between time series and cross sectional data, the difference between qualitative and quantitative data, and learn the different scales of measurement for data.

Module 3: Data Visualization (2.5 hours) Students will learn to summarize and display data graphically. Discussion will include important design aspects that should be present in graphical summaries of data.

Module 4: Summarizing Data (2.5 hours) Students will review the basic numerical summaries of data (mean, median, mode, range, mean absolute deviation, standard deviation, percentiles). In addition, students will learn to construct and interpret boxplots and calculate the correlation coefficient between two quantitative variables.

Module 5: Probability (5.0 hours) Students will learn to apply basic probability rules and to calculate empirical probabilities. They will learn the difference between “odds” and “probability” and learn to summarize data in contingency tables.

Module 6: Discrete Probability Distributions (5.0 hours) Students will be introduced to probability distributions of discrete random variables. They will learn to compute the

expected value and variance/standard deviation of a discrete random variable. Basic known distributions such as the geometric, binomial, and Poisson distribution will be introduced.

Module 7: Continuous Probability Distributions (7.5 hours) Students will be introduced to the probability distributions of continuous random variables. Emphasis will be given to the normal distribution. Students will learn to compute probabilities and inverse probabilities for normally distributed random variables using both tables and software.

Module 8: Sampling and Sampling Distributions (5.0 hours) Students will learn when and why to sample, along with different sampling methods. Students will be introduced to the sampling distribution of the sample mean and the Central Limit Theorem. Students will learn to apply the Central Limit Theorem to compute probabilities from the normal distribution. The Central Limit Theorem will also be applied to the sampling distribution of the sample proportion.

REQUIREMENTS AND GRADING

Comprehensive Exam 1 (Following Module 4).....	20%
Comprehensive Exam 2 (Following Module 6).....	20%
Comprehensive Exam 3 (Following Module 8).....	20%
Mini Case Studies.....	10%
Pre-lecture assignments (LearnSmart)	10%
Homework from Connect System.....	10%
Daily Attendance.....	10%

Computing: We will use Excel and Minitab for all computing in the course. Both are available in the COB computing labs. You may download Minitab for home use at no charge from the AU Office of Information Technology site by logging into AU Install on the following website: <http://www.auburn.edu/oit/students/>

Exams: Three comprehensive exams will be given during the semester. Exams will cover material in the assigned readings, homework, lecture and lecture slides. **Please refer to the calendar for exam dates.** Students should bring an 8.5 X 11 blue scan sheet, #2 pencil, calculator, eraser, and Student ID to all exams.

Make up exams: In the event that a student misses an exam and provides a University approved excuse in accordance with the following guidelines, the student will be given the opportunity to makeup the missed exam. Lack of preparation for an exam is not a valid excuse and students should not be tempted to "fake" a doctor's excuse due to lack of preparation. The penalty for this is severe and could affect you for the rest of your career.

This makeup exam will cover the same material that was covered on the missed exam. **If a student fails to provide sufficient documentation of the absence or the absence is not a University approved excused absence, the student will receive a zero for the missed exam. ALL STUDENTS MUST TAKE ALL EXAMS.**

Pre-lecture Assignments and Homework: A pre-lecture assessment will be given prior to most lectures using the LearnSmart system through McGraw-Hill Connect. In addition, small problem sets will be assigned following most every class using the McGraw Hill Connect system. The pre-lecture assessments and homework assignments will be graded and will count towards the final grade. **Completing these assignments is a requirement of the course.**

Attendance: Attendance will be recorded daily. This will count towards 10% of your final grade. You will be given four “free” absences, whereby your grade will not be affected if you miss class.

Communication: I will use your Auburn University e-mail address (userid@auburn.edu) for course communication. It is your responsibility to contact the Information Technology Help Desk to have this address forward mail to the e-mail address that you regularly check.

Academic Honesty: All portions of the Auburn University student academic honesty code (Title XII) found in the Tiger Cub will apply to university courses. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

Grading Policy: A \geq 90%, B \geq 80%, C \geq 70%, D \geq 60%, F $<$ 60%.

Special Accommodations for Students with Disabilities: Students who need special accommodations in class, as provided for by the Americans With Disabilities Act, should arrange for a confidential meeting with the instructor during office hours in the first week of classes (or as soon as possible if accommodations are needed immediately). The student must bring a copy of their Accommodation Letter and an Instructor Verification Form to the meeting. If the student does not have these forms, they should make an appointment with the Program for Students with Disabilities, 1288 Haley Center, 844-2096 (V/TT).