

COURSE SYLLABUS: BUAL 3600

Business Analytics II

Spring 2014

Class Meetings: 2:00 pm – 3:15 pm, T, TH.

Professor: Dr. Amit Mitra; Office: 419 Lowder; Phone: 4-4833; E-mail: mitraam@auburn.edu

Office Hours: T, TH: 3:30 – 5:30 pm; others by appointment.

Prerequisite: MNGT 2600 – Business Analytics I

Required Course Materials:

- 1. Business Analytics: A custom published text edition of Sharpe, Deveau, and Velleman's Business Statistics, Second Custom Edition, ISBN (Text & Student Access Kit) 0-321-76999-0, Pearson 2012; ISBN 978-1-256-13714-6.**
- 2. Computer Software: Minitab available in the COB computing labs. For home use, Minitab 16 may be downloaded from the AU website:**
<https://cws.auburn.edu/oit/auinstall/>

StatCrunch is an online software that will be demonstrated in the course. It may be accessed via *MyStatLab*, the URL for which is shown below.

If you need a physical textbook, the custom text plus MyStatLab login code can be purchased from the campus bookstore. The e-book, which comes automatically with *MyStatLab*, can be accessed directly online at http://www.pearsoncustom.com/al/auburn_mystatlab/. This is the URL for *MyStatLab*, which, apart from giving access to the e-book, will provide access to other course components such as homework assignments, to be submitted online, and tutorials.

Broad Aims of Course:

- Understand the importance of data-driven business decisions.
- Understand the basic role of probability in business decision making.
- Apply statistical inferential procedures to aid business decisions.
- Build regression models for estimation and prediction in business.
- Understand the basics of forecasting/predictive modeling
- Understand basic quality control techniques
- Learn the basics of business decision models that incorporate risk.

REQUIREMENTS AND WEIGHTS

Exam 1.....	15%
Exam 2.....	20%
Exam 3.....	20%
Final Exam (Comprehensive).....	25%
Homework.....	10%
Pop quizzes (unannounced).....	5%
Attendance.....	.5%

Exams: Three in-class exams and one comprehensive final exam will be given during the semester. Exams, which will be multiple choice format, will cover material in the assigned readings, homework, and lecture. **Students should bring a blue scan sheet, #2 pencil, eraser and student ID to the exams.** Please refer to the calendar for exam dates.

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. Students must notify the instructor prior to the test and turn in their excuse to the instructor on the first day upon returning to class. 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.

All AU **approved excuses** must be turned in by the **first class day** after the missed day.

Pop Quizzes: These unannounced quizzes are short (5 – 10 minutes) and cannot be made up, if absent.

Homework: Completing homework assignments is a requirement of the course. Homework will be assigned almost daily and will be accessible at the MyStatLab URL – http://www.pearsoncustom.com/al/auburn_mystatlab/. The first time you login you will need to register with the course id, **mitra48841**. Please use your real name to register so that I can easily identify you to assign your homework grades. Each homework assignment will be accessible only for a limited time, typically up to 11:00 pm on the due date, but you will be allowed unlimited attempts to get each question correct. Before attempting a homework question you can get help by clicking “help me solve this” or “view an example”. Upon submission of your answers, the system will give you feedback on any errors committed, grade your work, and automatically record your total grade for the assignment. You will be able to track your progress during the semester by visiting the URL.

To compensate for misinterpretations, grading irregularities due to rounding, and unavoidable downtime, you will be allowed to drop the lowest two homework scores.

Communication: I will use your Auburn University e-mail address ([userid@auburn.edu](mailto:user@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 AU Office of Provost website 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%.

Class Procedures:

- Turn off all wireless communications devices in class. Do not make or receive calls during class. Further, making or receiving calls during an exam will be viewed as an Academic Honesty violation.
- The instructor has the discretion to modify course content and assignment/test dates.

Special Accommodations for Students with Disabilities: Students who need special accommodations, as provided for by the American With Disabilities Act, should make an appointment as soon as possible with the faculty member to discuss their Accommodation Memo. It is essential that the faculty member be aware of necessary accommodations at the beginning of the course. The student must bring a copy of his/her Accommodation Letter and an Instructor Verification Form to the meeting. If the student does not have these forms but needs special accommodations, he/she should contact the Program for Students with Disabilities, 1288 Haley Center, 334-844-2096 (V/TT).

MNGT 3600 – Business Analytics II

Week	Date	Topic	Chapters	Reading	Homework
1	1/9	Review Sampling Distribution of Sample Proportion and Sample Mean, Central Limit Theorem.	Chapter 10	10.1 – 10.5	HW 1, Due 1/14
2	1/14	Review Confidence Intervals for the Population Proportion and Population Mean.	Chapters 11 & 12	11.1 – 11.4 12.1 – 12.5	HW 2, Due 1/18
2	1/16	Hypothesis Test on a Population Proportion. Use of p-values. Hypothesis Test on Population Mean. Significance Levels and Critical Values.	Chapter 13	13.1 – 13.5 13.6 – 13.8	HW3, Due 1/23
3	1/21	Confidence Intervals and Hypothesis Tests. Type I and Type II errors. Power of a Test.	Chapter 13	13.9 – 13.11	HW 4, Due 1/26
3	1/23	Two-Sample t-test and Confidence Interval for Difference in two Population Means. Pooled t-test.	Chapter 14	14.1 – 14.5	HW5, Due 2/1
4	1/28	Two-Sample t-tests and Confidence Intervals.	Chapter 14	14.5, 14.7- 14.8	
4	1/30	Paired t-test. Catch up and Review	Chapter 14	14.7 – 14.8	
5	2/4	Exam 1	Chapters 10-14		
5	2/6	Goodness-of-fit tests. Chi-square test for homogeneity.	Chapter 15	15.1 – 15.5	HW6, Due 2/11
6	2/11	Chi-square test for independence. Inferences on Simple Linear Regression Analysis.	Chapter 15 Chapter 16	15.6 16.1 – 16.4	HW7, Due 2/15

Week	Date	Topic	Chapters	Reading	Homework
6	2/13	Inferences and Estimation/Prediction From Regression Analysis.	Chapter 16	16.5 – 16.7	
7	2/18	Residuals Analysis in Regression	Chapter 17	17.1 – 17.4	HW8, Due 2/22
7	2/20	Residuals Analysis in Regression. Autocorrelation. Transformations.	Chapter 17	17.5 – 17.6	HW9, Due 2/27
8	2/25	Multiple Regression Analysis. Interpreting Regression Coefficients. Validation of Assumptions. F-tests and t-tests.	Chapter 18	18.1 – 18.5	HW10, Due 3/3
8	2/27	Multiple Regression Analysis. Model Building.	Chapter 18 Chapter 19	18.5 19.1 – 19.2	
9	3/4	Multiple Regression Analysis. Indicator Variables. Building Regression Models.	Chapter 19	19.1 – 19.3 19.4	HW11, Due 3/22
9	3/6	Influence Measures in Multiple Regression. Collinearity.	Chapter 19	19.3 – 19.4	
10	3/18	Model Building	Chapter 19		
10	3/20	Problem of Multicollinearity. Best Subsets. Review	Chapter 19	19.4 – 19.5	
11	3/25	Exam 2	Chapters 15 – 19		
11	3/27	Time Series Analysis. Model Components. Smoothing Methods. Forecast Error.	Chapter 20	20.1 – 20.4	HW12, Due 4/2

Week	Date	Topic	Chapters	Reading	Homework
12	4/1	Autoregressive & Regression-based Models. Selecting a Model.	Chapter 20	20.5 – 20.7	HW13, Due 4/6
12	4/3	Quality Control. Basic Concepts. X-Bar and R Charts	Chapter 22	22.1 – 22.3	HW14, Due 4/10
13	4/8	Actions for Out-of-Control Processes. Charts for Attributes – p-chart and c-chart,	Chapter 22	22.4 – 22.6	HW15, Due 4/14
13	4/10	Decision Making and Risk. Payoff Tables and Decision Trees. Minimax and Maximax Criteria.	Chapter 24	24.1 – 24.3	HW16, Due 4/17
14	4/15	Expected Value. Expected Value with Perfect Information. Probability Trees. Bayes Probability. Review.	Chapter 24	24.4, 24.5, 24.10 24.11	HW17, Due 4/20
14	4/17	Review			
15	4/22	Exam 3	Chapters 20, 22, 24		
15	4/24	Review.			
16	4/28	Final Exam 4:00 – 6:30 pm	Cumulative		