

# Department of Decision and Information Sciences

## BZAN 6310, Quantitative Analysis for Business Course Information

Instructor: Dr. Radha Radhakrishnan  
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**Required Text:** *Albright, S. C., and Winston, W., “Business Analytics: Data Analysis & Decision Making, 6<sup>th</sup> edition, Cengage Learning.*

### **Course Description:**

Today’s companies collect a vast amount of data quite easily. But in their raw form, these data are usually meaningless. In order to make them meaningful, and hence useful, they must be analyzed for trends, patterns, relationships, and insightful information. This course covers a variety of statistical methods, from simple to complex, to help students analyze such data sets and uncover important information. There is a heavy emphasis throughout the course on analytical methods that are useful in decision making. Though these methods vary, the objective to equip you with decision-making tools that you can apply in your business careers is the same. The methods are taught by an example-based approach. In this regard, emphasis will be placed on realistic business problems. The software that is used for the adopted approach is **Microsoft Excel with an Add-in called StatTools.**

### **Teaching Methods:**

1. **Lectures:** Important material from the text and outside sources will be covered in class. Students should plan to take careful notes as not all material can be found in the texts or readings. Discussion is encouraged as is student-procured, outside material relevant to topics being covered.
2. **Assignments:** Problems and readings will be periodically assigned to help support and supplement material found in the text.
3. **Pop Quizzes:** We will have Pop Quizzes at the end of each chapter. These will be multiple choice questions to test student’s comprehension of the basic principles.
4. **Exams:** Exams/Quizzes will be closed book/note and will test material that is covered in the course. Review sheets will be provided prior to the exam day. The final exam will be cumulative to the extent that it will include topics that are covered earlier in the course.

**NOTES ONLINE:** You will have access to all material via the **Blackboard Learn** application.

- The lecture slides will be available in the [CLASS NOTES](#) section of the class web site. The slides will be posted within 24 hours prior to each class session. But, on a few rare occasions, I might make minor changes to them **just in time for our class.** Of course, I will make you aware of these changes in class.
5. **Announcements** regarding the class such as schedule changes, assignments, projects, and so on will be made in class during the first 10 minutes as well as on the web at the [Announcements](#) page. If you do not make it to class on time, then please be sure to check if there are announcements.
  6. **Tutoring:** To be announced.

7. **Contacting the Professor:** You can reach me by telephone or email. If you try to reach me, and you are unable to do so, then leave a message for me. I prefer that you call me on my cell – 713 773-4274. I will try to get back to you within 48 hours.
8. **Teaching Assistant (TA):** TBA
9. **Grading:**
  1. Pop Quizzes: 30% of final grade
  2. Exam #1: 35% of final grade.
  3. Exam #2: 35% of final grade.
  4. Home Work Assignment - TBA

Final course letter grade follows the numeric-letter grade system used here at University of Houston.

### **Course Policies:**

**Missed Classes:** The student is responsible for obtaining material, which may have been distributed on class days when he/she was absent. This can be done through contacting a classmate who was present or by contacting the instructor during his office hours. Missed or late exams cannot be made up under any circumstances, unless an official excuse is provided. **Any uncoordinated, unexcused missed exam will result in a score of 0 for that exam.**

**Academic Dishonesty:** Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper or project; failure in course; and or expulsion from the University. For more information, refer to the "Academic Dishonesty" policy in the University's Catalog. The University of Houston Academic Honesty Policy is strictly enforced by the C. T. Bauer College of Business. No violations of this policy will be tolerated in this course. A discussion of the policy is included in the University of Houston Student Handbook, <http://www.uh.edu/dos/hdbk/acad/achonpol.html>. Students are expected to be familiar with this policy.

**Need for Assistance:** If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined in this document, or which will require academic accommodations, please notify me as soon as possible. I will recommend that you contact the Center for Students with Disabilities. The contact person is Justin Dart in the CSD building #568, room 110. The numbers for the CSD office are Ph: 713-743-5400; TDD: 713-749-1527; Fax: 713-743-5396 or email: [uhcsd@uh.edu](mailto:uhcsd@uh.edu).

**Posting of Grades:** Though I might sometimes post your scores on Blackboard, most times I will report them to you in class. If you do not wish to have your grades posted online, then please notify me of this via email. And, if you are absent when scores are reported, then you can drop by my office for them during my scheduled office hour.

## BZAN 6310 Tentative Lecture Outline

This outline is tentative. It may change in the event of unforeseen class disruptions. As such, it could be modified as time goes by. You will see below that practice questions are assigned. These will be announced in class and I will let you know when, and how, to turn them in.

#	Date	Topic	Chapter
1	1/19	<ul style="list-style-type: none"> <li>• Introduction to course</li> <li>• Introduction to Data Analysis &amp; Decision making                             <ul style="list-style-type: none"> <li>○ Modeling and Models</li> </ul> </li> <li>• Describing the distribution of a single variable                             <ul style="list-style-type: none"> <li>○ Basic Concepts – Population, sample and data</li> <li>○ Descriptive Measures of Categorical Variable</li> <li>○ Descriptive measures for Numerical Variables</li> <li>○ Summary Measures</li> <li>○ Outliers and missing values</li> </ul> </li> </ul>	# 1  # 2
2	1/26	<ul style="list-style-type: none"> <li>• Finding relationships among Variables                             <ul style="list-style-type: none"> <li>○ Categorical &amp; Numerical</li> <li>○ Scatter Plots</li> <li>○ Correlation and Covariance</li> </ul> </li> </ul>	# 3
3	2/2	<ul style="list-style-type: none"> <li>• Probability and Probability Distribution                             <ul style="list-style-type: none"> <li>○ Probability Essentials</li> <li>○ Distribution of Single Random Variable</li> <li>○ Conditional Mean and Variance</li> <li>○ Distribution of Two Random Variables</li> <li>○ Independent Random Variables</li> </ul> </li> </ul>	# 4
4	2/9	<ul style="list-style-type: none"> <li>• Probability and Probability Distribution                             <ul style="list-style-type: none"> <li>○ Probability Essentials</li> <li>○ Distribution of Single Random Variable</li> <li>○ Conditional Mean and Variance</li> <li>○ Distribution of Two Random Variables</li> <li>○ Independent Random Variables</li> </ul> </li> </ul>	# 4
5	2/16	<ul style="list-style-type: none"> <li>• Probability</li> <li>• Normal, Binomial, Poisson &amp; Exponential Distribution                             <ul style="list-style-type: none"> <li>○ The Normal Distribution, ND</li> <li>○ Applications of ND</li> <li>○ The Binomial Distribution, BD</li> <li>○ Applications of BD</li> <li>○ Poisson &amp; Exponential Distributions</li> </ul> </li> </ul>	# 5
6	2/23	<ul style="list-style-type: none"> <li>• Normal, Binomial, Poisson &amp; Exponential Distribution                             <ul style="list-style-type: none"> <li>○ The Normal Distribution, ND</li> <li>○ Applications of ND</li> <li>○ The Binomial Distribution, BD</li> <li>○ Applications of BD</li> <li>○ Poisson &amp; Exponential Distributions</li> </ul> </li> </ul>	# 5
7	3/2	<ul style="list-style-type: none"> <li>• Normal, Binomial, Poisson &amp; Exponential Distribution                             <ul style="list-style-type: none"> <li>○ The Normal Distribution, ND</li> <li>○ Applications of ND</li> <li>○ The Binomial Distribution, BD</li> <li>○ Applications of BD</li> <li>○ Poisson &amp; Exponential Distributions</li> </ul> </li> </ul> <p><b>MID TERM TEST</b></p>	# 5

8	3/9	<ul style="list-style-type: none"> <li>• Sampling &amp; Sampling Distribution <ul style="list-style-type: none"> <li>○ Methods for selecting random samples</li> <li>○ Introduction to estimation</li> </ul> </li> <li>• Confidence Interval Estimation <ul style="list-style-type: none"> <li>○ Confidence Interval for a Mean</li> <li>○ Confidence Interval for a proportion</li> </ul> </li> </ul>	# 7  # 8
9	3/23	<ul style="list-style-type: none"> <li>• Confidence Interval Estimation <ul style="list-style-type: none"> <li>○ Confidence Interval for the difference between Means</li> <li>○ Controlling Confidence Interval length</li> </ul> </li> </ul>	# 8
10	3/30	<ul style="list-style-type: none"> <li>• Hypothesis Testing <ul style="list-style-type: none"> <li>○ Concepts in Hypothesis Testing</li> </ul> </li> </ul>	# 9
11	4/6	<ul style="list-style-type: none"> <li>• Hypothesis Testing <ul style="list-style-type: none"> <li>○ Hypothesis Tests for a population Mean</li> <li>○ Hypothesis Tests for other Parameters</li> <li>○ Test for Normality</li> </ul> </li> </ul>	# 9
12	4/13	<ul style="list-style-type: none"> <li>• Hypothesis Testing <ul style="list-style-type: none"> <li>○ Hypothesis Tests for a population Mean</li> <li>○ Hypothesis Tests for other Parameters</li> <li>○ Test for Normality</li> </ul> </li> </ul>	# 9
13	4/20	<ul style="list-style-type: none"> <li>• One- Way ANOVA</li> <li>• Regression Analysis – Estimating Relationships <ul style="list-style-type: none"> <li>○ Scatterplots: Graphing Relationships</li> <li>○ Correlations: Indicator of Linear Relationships</li> <li>○ Simple Linear Regression</li> <li>○ Multiple Regression &amp; Modelling possibilities</li> </ul> </li> </ul>	# 10
14	4/27	<ul style="list-style-type: none"> <li>• Regression Analysis: Statistical Inference <ul style="list-style-type: none"> <li>○ Validation of Fit</li> <li>○ Statistical model</li> <li>○ Inferences about Regression Coefficients</li> <li>○ Multi- Collinearity</li> <li>○ Stepwise Regression</li> <li>○ Outliers</li> </ul> </li> <li>• Review for Final Test</li> <li>•</li> </ul>	# 10
	<b>TBA</b>	<b>FINAL TEST</b>	