

BUAD 310 – Applied Business Statistics

School of Business

Syllabus – Fall 2013

Instructor:	Gourab Mukherjee	<u>TA:</u>	Pallavi Basu
Office:	НОН 514	Office Hours:	Tuesday and Wednesday 10AM-12 PM (location TBA)
Office Hours:	Tuesday 1:30-3.30 PM, Thursday 1:30-3.30PM [If needed, I can add more hours or can change the times] And by email appointment	Email:	pallavi.basu.2016@marshall.usc.edu
Email:	gourab@usc.edu [please put only]	BUAD310	in the subject line]

Course Description

Students will learn how to summarize, analyze and interpret real-world data in a manner that will assist them in making business decisions. Students will also learn to think critically about how statistics is used by others and how it impacts their day to day lives and careers. The class is designed in such a way that students can approach this course without the anxiety often associated with statistics. No mathematical background beyond high school algebra is required.

<u>Course Learning Objectives and relationship with Marshall's Undergraduate Business</u> <u>Administration Program Objectives</u>

The main learning objectives of this course are in line with the following three Marshall's Undergraduate Business Administration Program Objectives:

1. Critical thinking skills (high emphasis): The students will demonstrate critical thinking skills in decision making, and problem-solving abilities to strategically navigate complex demands of business environments. In this course, students will:

- Gather, categorize, analyze, interpret, and evaluate relevant qualitative and quantitative information.
- Critically question problems, competing priorities and points of view in situations characterized by ambiguity and/or uncertainty.
- Apply analytic tools and frameworks of business disciplines to create and defend wellreasoned conclusions and solutions based on relevant criteria and standards.

Specific areas of the course that will address this objective are: case study, descriptive statistics, data visualization, estimation, hypothesis testing, regression analysis, interpretation of statistical results, and decision making.

2. Understand key business areas (low emphasis): The students will have an understanding of the key business areas and their interplay to effectively manage different types of modern enterprise. In this course, students will:

• Understand and utilize current technology in data sciences.

Specific areas of the course that will address this objective are: the use of statistical software (StatCrunch) and online learning tools, such as MyStatLab, videos, and simulation applets.

3. Effective Communication (low emphasis): The students will be effective communicators in speaking and writing to facilitate information flow in organizational, social, and intercultural contexts. In this course, students will:

• Conduct research using a range of sources, synthesizing and judging the quality of collected information and support their written claims logically and persuasively.

Specific areas of the course that will address this objective are: communication and interpretation of the results of statistical analysis in group and individual projects (case study group project, in class participation, homework).

Required Materials

The following textbook is available at the bookstore.

Statistics for Business: Decision Making and Analysis (2nd Edition) by Robert Stine and Dean Foster, Pearson, 2012.

You are not required to purchase a hard copy of the textbook. You will automatically have access to the electronic version of the textbook after you register with MyStatLab, which is a website provided by the publisher. Registration instructions are given on page 6 below. Each student has to register with MyStatLab to have access to the homework, which will be administered online. Registration with MyStatLab requires an access code, which you can either purchase online, or get automatically when you buy a new textbook at the USC bookstore. For more details, please see page 6 below.

Prerequisites and/or Recommended Preparation:

No mathematical background beyond high school algebra is required.

Course Notes:

There is a Blackboard site for the course under the BUAD 310 heading. I will use this site and the MyStatLab site for correspondence and information area for the course. The site will provide class slides and handouts. If you would like hard copies of the slides, it will be your responsibility to print them out. Please check the Blackboard site and your email daily for class preparation materials or instructions.

Software:

We will use user friendly statistical software StatCrunch, which you will have online access to after you register with MyStatLab.

ASSIGNMENTS AND GRADING DETAIL

Your final grade will be assessed as follows:

Assignments		% of Grade
TESTS Mid-Term (2 tests, each 20%)		40% (total)
	Final Exam	35%
Homework Assig	15% (total)	
Case Analysis		10%
	TOTAL	100%

Midterm tests, final exam, and case assignment will be graded out of 100 points. Your lowest homework score will be dropped, and then your overall homework score will be computed, again out of 100 points. The weights listed above will be used to come up with your overall score for the class. Final grades represent how you perform in the class relative to other students. Your grade will not be based on a mandated target; instead it will be based on your performance. Historically,

the average grade for this class is about a (B). Your grade will be based on your overall score for the course, as well as your ranking among the students in my sections.

Class Attendance & Participation:

I strongly suggest that you attend all classes. *In cases of borderline grades, regular attendance and participation would serve to push students to the next higher grade with a bonus score of up to 2%. In addition, there may be material covered in the lectures that would not be from the primary text. I will explain the more important concepts of the chapters in class, as well as give you an opportunity to question ideas that may seem confusing to you. I encourage, as well as expect, questions during the lectures. I have no problem going over a concept multiple times. If you feel uneasy bringing up your questions in class, there are plenty of opportunities to speak with me one-on-one. I am always accessible by e-mail, and will be more than happy to speak with you before or after class or during office hours. Note: if your question requires a conversation rather than a short answer, email is not the best way to go – please talk to me after class or during office hours, and I will be happy to answer your question.*

Homework:

You will view your assignments and submit the answers online, using <u>www.mystatlab.com</u>. There will be about seven HW assignments, and your lowest HW score will be dropped. Due dates will be specified for each HW assignment. <u>Late assignments will not be accepted</u>.

Case Analysis:

You will analyze one case during the semester. The case assignment will consist of an analysis performed using statistical software and a short summary. The questions will be constructed in order to lead you through some of the topics covered in class and the summary should consist of a write-up that translates the quantitative findings into a real-world analysis. This will be a group project; you can work in groups of size **no greater than 5**. Each group should submit one copy of the report with the names of the participants displayed clearly on the front cover. Groups will **not** be assigned, so you are free to form them on your own.

Tests and Final Exam:

The two midterm tests will be given in class on the dates announced in the course schedule (page 5). You may bring <u>a single handwritten sheet (both sides)</u> containing formulas to each test and you will be allowed <u>three sheets (both sides)</u> for the final exam. <u>No make-ups of tests will be given</u>. **You will receive a grade of zero for each missed test** unless you have a written excuse from your doctor or the University.

The final examination will take place on Wednesday, December 18th from 2-4 PM. Note that it is an <u>exception final</u>, as it does <u>not</u> take place at the regularly listed time. The final exam is comprehensive (this is inevitable in a Statistics course) but greater emphasis will be given to the material taught later in the semester. You <u>cannot</u> be exempted from this final under any circumstances. The final exam will <u>not</u> be given at any other time. According to the USC Office of Academic Records and Registrar, "*No student in a course with a final examination is permitted to omit the final examination or take the final examination prior to its scheduled date, and no instructor is authorized to permit a student to do so. No student is allowed to re-take a final examination or do extra work in a course after the semester has ended for purposes of improving his or her grade."*

Working Together:

Discussion of homework problems is permitted and encouraged; however, each student is required to prepare and submit his or her solutions, including computer work, <u>independently</u>. **Collaboration of any sort on tests and exams is prohibited and will result in a 0 on that exam**. I reserve the right to bring any potential cheating issues to the administration for further penalties.

MARSHALL GUIDELINES

Add/Drop Process:

The last day to register and add classes is Friday, September 13. The last day to drop a class without a mark of "W" is also September 13. For more information, visit www.usc.edu/academics/classes/term 20133/calendar.html.

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. For more information visit www.usc.edu/disability .

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <u>http://www.usc.edu/student-affairs/SJACS/</u>. Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

Class Notes Policy

Notes or recordings made by students based on a university class or lecture may only be made for purposes of individual or group study, or for other non-commercial purposes that reasonably arise from the student's membership in the class or attendance at the university. This restriction also applies to any information distributed, disseminated or in any way displayed for use in relationship to the class, whether obtained in class, via email or otherwise on the Internet, or via any other medium. Actions in violation of this policy constitute a violation of the Student Conduct Code, and may subject an individual or entity to university discipline and/or legal proceedings.

Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.

Please activate your course in Blackboard with access to the course syllabus. Whether or not you use Blackboard regularly, these preparations will be crucial in an emergency. USC's Blackboard learning management system and support information is available at <u>blackboard.usc.edu</u>.

MONDAY-WEDNESDAY SECTION

COURSE CALENDAR/READINGS/CLASS SESSIONS

Test and case due dates are set, but topics and homework due dates may be modified. Only parts of the listed chapters will be covered.

Week	Date	Торіс	Reading [Stine & Foster]	Due Dates
1	8/26	Introduction	Chapters 1, 2	
	8/28	Descriptive Statistics	Chapters 3, 4	
2	9/2	Labor Day		
	9/4	Probability: Basic Concepts	Chapters 7, 8	
3	9/9	Probability: Basic Concepts	Chapters 7, 8	HW 1 due
	9/11	Random Variables	Chapter 9	
4	9/16	Covariance and Correlation, Portfolio Analysis	Chapters 6, 10	HW 2 due
4	9/18	Normal Distribution	Chapter 12	
5	9/23	Normal Distribution/Sampling Distributions	Chapters 12, 13	
5	9/25	Sampling Distributions	Chapters 13, 14	HW 3 due
6	9/2	Review		
0	10/2	Midterm 1		
7	10/7	Estimation	Chapter 15	
/	10/9	Hypothesis Testing	Chapters 16, 17	
o	10/14	Hypothesis Testing	Chapters 16, 17	HW 4 due
8	10/16	Chi-Square Tests	Chapter 5, 18	
0	10/21	Chi-Square Tests	Chapter 5, 18	
9	10/23	Simple Linear Regression	Chapters 19-22	HW 5 due
10	10/28	Simple Linear Regression	Chapters 19-22	
10	10/30	Simple Linear Regression	Chapters 19-22	
11	11/4	Simple Linear Regression	Chapters 19-22	HW 6 due
11	11/6	Multiple Regression / Review	Chapter 23	
12	11/11	Midterm 2		
	11/13	Multiple Regression	Chapter 23	
12	11/18	Multiple Regression	Chapter 23	
13	11/20	Multiple Regression	Chapter 23	
14	11/25	Indicator Variables, Interactions	Chapter 25	HW 7 due
14	11/27	Thanksgiving		
15	12/2	Multicollinearity, Best Subsets	Chapter 24	
15	12/4	Review for the Final		CASE DUE
Wed Decer 2-4	nesday, nber 18 th 4 PM	Final Exam		

TUESDAY-THURSDAY SECTION

COURSE CALENDAR/READINGS/CLASS SESSIONS

Test and case due dates are set, but topics and homework due dates may be modified. Only parts of the listed chapters will be covered.

Week	Date	Торіс	Reading [Stine & Foster]	Due Dates
1	8/27	Introduction	Chapters 1, 2	
	8/29	Descriptive Statistics	Chapters 3, 4	
2	9/3	Probability: Basic Concepts	Chapters 7, 8	
	9/5	Probability: Basic Concepts	Chapters 7, 8	
3	9/10	Random Variables	Chapter 9	HW 1 due
	9/12	Covariance and Correlation	Chapters 6, 10	
4	9/17	Portfolio Analysis	Chapter 10	HW 2 due
	9/19	Normal Distribution	Chapter 12	
5	9/24	Normal Distribution/Sampling Distributions	Chapters 12, 13	
5	9/26	Sampling Distributions	Chapters 13, 14	HW 3 due
	10/1	Estimation / Review	Chapter 15	
0	10/3	Midterm 1		
7	10/8	Estimation	Chapter 15	
/	10/10	Hypothesis Testing	Chapters 16, 17	
0	10/15	Hypothesis Testing	Chapters 16, 17	HW 4 due
8	10/17	Chi-Square Tests	Chapter 5, 18	
0	10/22	Chi-Square Tests	Chapter 5, 18	
9	10/24	Simple Linear Regression	Chapters 19-22	HW 5 due
10	10/29	Simple Linear Regression	Chapters 19-22	
10	10/31	Simple Linear Regression	Chapters 19-22	
11	11/5	Simple Linear Regression	Chapters 19-22	HW 6 due
11	11/7	Multiple Regression / Review	Chapter 23	
12	11/12	Midterm 2		
	11/14	Multiple Regression	Chapter 23	
12	11/19	Multiple Regression	Chapter 23	
13	11/21	Multiple Regression	Chapter 23	
14	11/26	Indicator Variables, Interactions	Chapter 25	HW 7 due
14	11/28	Thanksgiving		
15	12/3	Multicollinearity, Best Subsets	Chapter 24	
15	12/5	Review for Final		CASE DUE
Wed Decer 2-4	nesday, nber 18 th 4 PM	Final Exam		

MyStatLab

Welcome Students!

MyStatLab is an interactive website where you can:

- · Self-test & work through practice exercises with step-by-step help to improve your math skills.
- Study more efficiently with a personalized study plan and exercises that match your book.
- Get help when YOU need it. MyStatLab includes multimedia learning aids, videos, animations, and live tutorial help.

Before You Begin:

To register for MyStatLab, you need:

A MyStatLab student access code (packaged with your new text, standalone at your bookstore, or available

for purchase with a major credit card at www.pearsonmylab.com)

- ☑ Your instructors' Course ID: <u>mukherjee73113</u>
- ☑ A valid email address

Student Registration:

- Enter www.pearsonmylab.com in your web browser.
- Under Register, click Student.
- Enter your **Course ID** exactly as provided by your instructor and click **Continue.** Your course information appears on the next page. If it does not look correct, contact your instructor to verify the Course ID.
- Sign in or follow the instructions to create an account. Use an email address that you check and, if possible, use that same email address for your username. Read and accept the License Agreement and Privacy Policy.
- Click Access Code. Enter your Access Code in the boxes and click Next. *If you do not have an access code and want to pay by credit card or PayPal, select the access level you want and follow the instructions. You can also get temporary access without payment for 14 days.*

Once your registration is complete, a **Confirmation** page appears. You will also receive this information by email. Make sure you print the Confirmation page as your receipt. Remember to **write down your username and password**. You are now ready to access your resources!

Signing In:

- Go to <u>www.pearsonmylab.com</u> and click **Sign in**.
- Enter your username and password and click Sign In.
- On the left, click the name of your course.

The first time you enter your course from your own computer and anytime you use a new computer, click the **Installation Wizard** or **Browser Check** on the Announcements page. After completing the installation process and closing the wizard, you will be on your course home page and ready to explore your MyStatLab resources!

Need help?

Contact Product Support at http://www.mystatlab.com/student-support for live CHAT, email, or phone support.