

SYLLABUS

C22.0103: Statistics for Business Control: Regression and Forecasting
Stern School of Business
New York University

Section 003, Spring 2009, Tues/Thurs/Fri, 10:00 – 11:15am, KMC 3-90

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Office Hours: TBA

Course description and objectives: This course has two broad objectives: (1) provide you with tools for effective data presentation and analysis, in particular in the context of business problems, and (2) develop models of probability and random variables that help to understand the randomness in business and everyday life.

Statistics is *"The science of collecting and analyzing data for the purpose of drawing conclusions and making decisions."*

Tamhane, Ajit C., and Dorothy D. Dunlop. Statistics and Data Analysis from Elementary to Intermediate. Prentice Hall, 2000, pp. 1.

"Statistics are no substitute for judgment."
Henry Clay

"There are three kinds of lies: lies, damned lies, and statistics."
Benjamin Disraeli

Course materials:

1. *Statistics for Business and Economics, 10th edition*, by McClave, Benson, and Sincich.
2. *Student's Solutions Manual*, by Nancy Boudreau. This has worked-through solutions to the odd-numbered problems.
3. *Minitab, student edition*, which is a computer program for statistical analysis. This is compatible with releases 14 and later.

These are available at the university bookstore. These are bundled as a single item. The text is required, and it may be available on the secondary book market. If you search the secondary book market, please be aware that these authors have another book with a very similar title.

The *Student's Solutions Manual* is not required, but you are likely to find it useful.

Minitab is the statistical software package that we will use throughout this course. Having this program and the knowledge from this class will provide you with a valuable tool for future coursework and internships/employment. You may use other software if you like, but only Minitab will be taught in this class.

Also, Minitab is available in the Stern computer lab, on the Citrix system, and in a "rental" form from e-academy.com which can be obtained for about \$25 for six months. If you search for your own copy of Minitab, releases before 14 lack many functions we will use.

Coursework will involve many instances of simple calculations, and for these a hand-held calculator will be helpful. It is not necessary (or even helpful) to have a calculator with statistical functions such as standard deviation or regression.

Finally, some useful notes on several subjects we will cover are available on the Blackboard course site. These include the bare bones theoretical results and lots of examples.

Schedule: The following is a fairly aggressive schedule that includes time during the last few weeks to cover some useful advanced topics. We may find during the course of the semester, however, that we need to slow down, in which case some dates would change accordingly.

Class number	Date	Topics	Textbook sections	Noteworthy
1	Th: Jan. 22	Intro; Data display	Ch. 1 (omit 1.4); 2.1 - 2.9	
2	F: Jan. 23	Data display		
3	T: Jan. 27	Descriptive statistics		
4	Th: Jan. 29	Probability	Ch. 3	Homework 1 due
5	F: Jan. 30	Probability		
6	T: Feb. 3	Probability		
7	Th: Feb. 5	Probability		
8	F: Feb. 6	Random variables; Discrete r.v.	4.1-4.4	
9	T: Feb. 10	Discrete r.v.		Homework 2 due
10	Th: Feb. 12	Discrete r.v.		
11	F: Feb. 13	Discrete r.v.		
	T: Feb.17			
12	Th: Feb. 19	Continuous r.v.: Normal distribution	4.5,4.7-4.11	
13	F: Feb. 20	Normal distribution		
14	T: Feb.24	Normal distribution		
15	Th: Feb. 26	Normal distribution		
16	F: Feb. 27	Normal distribution		
17	T: Mar. 3	Introduce cases for group projects		Homework 3 due
18	Th: Mar. 5	Review		
19	F: Mar. 6	MIDTERM EXAM		MIDTERM EXAM
20	T: Mar. 10	Linear regression	Ch. 10	
21	Th: Mar. 12	Linear regression		
22	F: Mar. 13	Linear regression		
		SPRING BREAK		SPRING BREAK
23	T: Mar. 24	Linear regression	Ch. 11 (omit 11.9-11.10)	
24	Th: Mar. 26	Linear regression		Homework 4 due
25	F: Mar. 27	Linear regression		
26	T: Mar. 31	Linear regression		
27	Th: Apr. 2	Linear regression		
28	F: Apr. 3	Linear regression	5.1-5.6; 6.1-6.5; 7.1-7.5	
29	T: Apr. 7	Statistical inference		Homework 5 due
30	Th: Apr. 9	Statistical inference		
31	F: Apr. 10	Statistical inference		
32	T: Apr. 14	Statistical inference		
33	Th: Apr. 16	Statistical inference		
34	Th: Apr. 16	Statistical inference		
35	T: Apr. 21	Statistical inference		
36	Th: Apr. 23	Special topics		Homework 6 due

37	F: Apr. 24	Special topics		
38	T: Apr. 28	Special topics		
39	Th: Apr. 30	Special topics		Case projects due
40	F: May 1	Case Projects: results		
41	T: May 5	Review		
	T: May 12	FINAL EXAM		FINAL EXAM

Grading: Grades will be based on a combination of scores for homework, in-class examinations, and the final examination. The specific numeric computation is

- 30% midterm exam
- 30% final exam
- 15% homework
- 15% project
- 10% short in-class quizzes

The coursework will be challenging enough that the expected grade distribution will be about: 25-35% A's - awarded for excellent work, 50-70% B's - awarded for good or very good work, and 5-15% C's (or below) - awarded for adequate or below work (note the distribution is skewed up because you are all so smart and hard-working).

All examinations are closed everything except a calculator and 2 sheets of paper, on which you can write any formulas or examples you like. Practice questions based on past exams will be posted to Blackboard.

Homework assignments are mandatory. You are encouraged to collaborate with your classmates, but you must turn in your own results (please give credit where it is due by listing any classmates you worked with on the assignment). Late submissions will be accepted only with a persuasive justification, but not after the solutions have been posted.

There will be a group project analyzing a business case, requiring use of all the tools developed in this class. More details will be given prior to the midterm exam.

Short quizzes will occasionally be given in class to reinforce important points or themes. These quizzes will be announced during the prior class period.

Other stuff:

- Please remember to turn off your cell phone before you come to class.
- Please try to arrive early. Late entrances are disruptive.
- As a general rule, laptops are an annoyance during class, particularly when you are checking your email or watching YouTube while others are studying statistics.
- Code of Conduct:
http://w4.stern.nyu.edu/uc/currentstudents/codeofconduct.cfm?doc_id=5182
- If you have a qualified disability and will require academic accommodation during this course, please contact the Moses Center for Students with Disabilities (CSD, 998-4980) and provide me with a letter from them verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.