

15.068 Statistical Consulting

Fall 2015

Instructor: Arnie Barnett (abarnett@mit.edu)
E62-568
617 253-2670

Teaching Assistant: Rachit Parekh (rparekh@mit.edu)

Course Objectives:

- To increase familiarity with ideas and methods that are essential to the serious statistical consultant, especially those related to sampling, regression, bootstrapping, and hypothesis testing
- To increase the ability to reach fair and insightful judgments about statistical analyses performed by others
- To enhance skill in performing real-life data analyses of high caliber and reliability
- To get better able to present one's own data analyses *convincingly* to others who are intelligent but not necessarily comfortable with Mathematics

Main "Deliverables" of Course:

Two Project Presentations in Class by Groups of Size Four
Some Short Written Data Analyses Performed Individually
One Individual Presentation by Students Who Volunteer
Four Brief "Problem Sets" about new topics in Statistics
A few critiques of statistical studies distributed to the class
One quiz in mid-November on applied statistical methods

Textbook:

Applied Statistics: Models and Intuition by Barnett. Because the Professor has no desire to benefit financially from sales to his students, he will donate all his royalties to a MIT-Sloan Scholarship Fund.

Office Hours: There are no required recitations, but there will be a few voluntary recitations at times to be announced. The T.A.'s will offer one-on-one office hours under a schedule that will be posted next week. Moreover, there will be 24/7 electronic office hours, in which the Professor will zestfully participate.

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Flight Schedule

NOTE: Schedules are based on expected flying times. Safety is our primary consideration. Because weather and other factors might affect operating conditions, arrivals and departures cannot be guaranteed.

--Emergency Card, Trans World Airlines (RIP)

<u>Date</u>	<u>Topic</u>	<u>Deliverable</u>
September 9	Intro/Some Statistical Horrors	
September 14	A Darker Side of Regression	
September 16	Auto Insurance/Behavioral Accounting	<i>Critique: An Auto Insurance Model</i>
September 21	Logistic Regression	
September 23	Testing Statistical Theories	
September 28	More Testing Theories	<i>First Problem Set Due</i>
September 30	Some Central Statistical Concepts	
October 5	End of Theorizing	
October 7	Are Markets Efficient?	<i>First Team Project</i>
October 13	Statistical Sampling	
October 14	Further Statistical Sampling	<i>Second Problem Set Due</i>
SIP WEEK		
October 26	End of Sampling	
October 28	Statistical Indicators	
November 2	Some Courtroom Dramas	
November 4	Introduction to Bootstrapping	
November 9	Further Work on Bootstrapping	
November 16	Close Shave	<i>Third Problem Set Due</i>
November 18	Quiz	<i>Insight</i>
November 23	Rural Roads	<i>Brief Data Analysis</i>
November 25	LAX	
December 1	A Case of Depression	
December 2	Did the Hospital Overcharge?	<i>Second Team Project</i>
December 7	Individual Student Presentations (Volunteers)	
December 9	Lessons Learned?	

Every evening after we have class, the Professor will send an e-mail to the class discussing what was accomplished (or not accomplished) that day. The critiques, problem sets, and analyses submitted count 30% of the grade, the quiz 35%, the projects 20%, and class participation 15%. Welcome aboard.