

Business Statistics, Fall Semester, 2010

Basic Information:

Professor: Robert McCulloch

Office: CBA 3.442

Office Hours: 12:30-1:30pm, tuesdays and thursdays.

email: robert.mcculloch1@gmail.com

course webpage: www.rob-mcculloch.org

Course Objectives

This course looks at basic statistical methods with application to business data.

We first review basic methods for looking at data: table, plot, and summary statistics such as the mean, variance, and correlation.

We then develop the iid normal model as an example of statistical modeling using probabilistic thinking. In the context of this model we cover basic methods of inference (confidence intervals and hypothesis test) and prediction.

The rest of the course is devoted to the regression model.

Materials

All required class materials are available on the course webpage.

Optional books that may be referenced are:

- (i) The Cartoon Guide to Statistics, by Gonick and Smith
- (ii) Data Analysis and Decision Making, by Albright, Winston, and Zappe, 3rd ed.

We will be using Excel for all computation.

Course Grade

Quizzes: 10%

Team Project: 40%

Final: 50%

Quizzes:

There will be three quizzes. Each quiz will be one question based closely on the homework. The lowest quiz will be dropped. Quiz dates are August 31, September 14,28.

Homework corresponding closely to the notes will be available along with the solutions.

Team Project:

Hand in one per study group. I will give you a data set to analyze our your team will apply the tools we learn to the data (and any other tools you like as well).

For both the quizzes and the final you can have:

(i) calculator (ii) one 8.5 x 11 cheat sheet with whatever you want on it (usually formulas).

Every student will be given a final total score using the above. Based on this total score grades will be assinged using the school policy for core courses.

Syllabus

1. Looking at Data
2. The IID Normal Model
3. Inference and Prediction for the IID Model
4. The Simple Linear Regression Model
5. The Multiple Regression Model
6. Dummy Variables
7. Fits, Resids, and R-squared
8. Diagnostics and Transformations
9. Time Series

I would like to cover 1-6, the rest I consider optional, we'll see how it goes.

I don't like to have to stick to a schedule.

McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas MBA experience hinges on this. Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas MBA classroom experience is enhanced when:

Students arrive on time:

On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.

Students are ready to start promptly at the beginning of class and after breaks.

Laptops are closed and put away:

When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice. Those around them face additional distraction. Fellow students cannot benefit from the insights of the students who are not engaged. Faculty office hours are spent going over class material with students who chose not to pay attention, rather than truly adding value by helping students who want a better understanding of the material or want to explore the issues in more depth. Students with real needs may not be able to obtain adequate help if faculty time is spent repeating what was said in class. There are often cases where learning is enhanced by the use of laptops in class. Faculty will let you know when it is appropriate to use them. In such cases, professional behavior is exhibited when misuse does not take place.

Phones and wireless devices are turned off:

Weve all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class. Remember, you are competing for the best faculty McCombs has to offer. Your professionalism and activity in class contributes to your success in attracting the best faculty to this program.

Students display their name cards:

This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions.

Students minimize unscheduled personal breaks:

The learning environment improves when disruptions are limited.

Students are fully prepared for each class:

Much of the learning in the Texas MBA program takes place during classroom discussions. When students are not prepared they cannot contribute to the overall learning process. This affects not only the individual, but their peers who count on them, as well.

Students attend the class section to which they are registered:

Learning is enhanced when class sizes are optimized. Limits are set to ensure a quality experience. When section hopping takes place some classes become too large and it becomes difficult to contribute. When they are too small, the breadth of experience and opinion suffers.

Students respect the views and opinions of their colleagues:

Disagreement and debate are encouraged. Intolerance for the views of others is unacceptable.

Academic Dishonesty

I have no tolerance for acts of academic dishonesty. Such acts damage the reputation of the school and the degree and demean the honest efforts of the majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam. The responsibilities for both students and faculty with regard to the Honor System are described on <http://mba.mcombs.utexas.edu/students/academics/honor/index.asp> and on the final pages of this syllabus. As the instructor for this course, I agree to observe all the faculty responsibilities described therein. During Orientation, you signed the Honor Code Pledge. In doing so, you agreed to observe all of the student responsibilities of the Honor Code. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

Students with Disabilities

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at <http://deanofstudents.utexas.edu/ssd/index.php>. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via e-mail if you have any questions.

Honor Code Purpose

Academic honor, trust and integrity are fundamental to The University of Texas at Austin McCombs School of Business community. They contribute directly to the quality of your education and reach far beyond the campus to your overall standing within the business community. The University of Texas at Austin McCombs School of Business Honor System promotes academic honor, trust and integrity throughout the Graduate School of Business. The Honor System relies upon The University of Texas Student Standards of Conduct (Chapter 11 of the Institutional Rules on Student Service and Activities) for enforcement, but promotes ideals that are higher than merely enforceable standards. Every student is responsible for understanding and abiding by the provisions of the Honor System and the University of Texas Student Standards of Conduct. The University expects all students to obey the law, show respect for other members of the university community, perform contractual obligations, maintain absolute integrity and the highest standard of individual honor in scholastic work, and observe the highest standards of conduct. Ignorance of the Honor System or The University of Texas Student Standards of Conduct is not an acceptable excuse for violations under any circumstances. The effectiveness of the Honor System results solely from the wholehearted and uncompromising support of each member of the Graduate School of Business community. Each member must abide by the Honor System and must be intolerant of any violations. The system is only as effective as you make it.

Faculty Involvement in the Honor System

The University of Texas at Austin McCombs School of Business Faculty's commitment to the Honor System is critical to its success. It is imperative that faculty make their expectations clear to all students. They must also respond to accusations of cheating or other misconduct by students in a timely, discrete and fair manner. We urge faculty members to promote awareness of the importance of integrity through in-class discussions and assignments throughout the semester.

Expectations Under the Honor System

Standards

If a student is uncertain about the standards of conduct in a particular setting, he or she should ask the relevant faculty member for clarification to ensure his or her conduct falls within the expected scope of honor, trust and integrity as promoted by the Honor System. This applies to all tests, papers and group and individual work. Questions about appropriate behavior during the job search should be addressed to a professional member of the Career Services Office. Below are some of the specific examples of violations of the Honor System.

Lying

Lying is any deliberate attempt to deceive another by stating an untruth, or by any direct form of communication to include the telling of a partial truth. Lying includes the use or omission of any information with the intent to deceive or mislead. Examples of lying include, but are not limited to, providing a false excuse for why a test was missed or presenting false information to a recruiter.

Stealing

Stealing is wrongfully taking, obtaining, withholding, defacing or destroying any person's money, personal property, article or service, under any circumstances. Examples of stealing include, but are not limited to, removing course material from the library or hiding it from others, removing material from another person's mail folder, securing for one's self unattended items such as calculators, books, book bags or other personal property. Another form of stealing is the duplication of copyrighted material beyond the reasonable bounds of "fair use." Defacing (e.g., "marking up" or highlighting) library books is also considered stealing, because, through a willful act, the value of another's property is decreased. (See the appendix for a detailed explanation of "fair use.")

Cheating

Cheating is wrongfully and unfairly acting out of self-interest for personal gain by seeking or accepting an unauthorized advantage over one's peers. Examples include, but are not limited to, obtaining questions or answers to tests or quizzes, and getting assistance on case write-ups or other projects beyond what is authorized by the assigning instructor. It is also cheating to accept the benefit(s) of another person's theft(s) even if not actively sought. For instance, if one continues to be attentive to an overhead conversation about a test or case write-up even if initial exposure to such information was accidental and beyond the control of the student in question, one is also cheating. If a student overhears a conversation or any information that any faculty member might reasonably wish to withhold from the student, the student should inform the faculty member(s) of the information and circumstance under which it was overheard.

Actions Required for Responding to Suspected and Known Violations

As stated, everyone must abide by the Honor System and be intolerant of violations. If you suspect a violation has occurred, you should first speak to the suspected violator in an attempt to determine if an infraction has taken place. If, after doing so, you still believe that a violation has occurred, you must tell the suspected violator that he or she must report himself or herself to the course professor or Associate Dean of the Graduate School of

Business. If the individual fails to report himself or herself within 48 hours, it then becomes your obligation to report the infraction to the course professor or the Associate Dean of the Graduate School of Business. Remember that although you are not required by regulation to take any action, our Honor System is only as effective as you make it. If you remain silent when you suspect or know of a violation, you are approving of such dishonorable conduct as the community standard. You are thereby precipitating a repetition of such violations.

The Honor Pledge

The University of Texas at Austin McCombs School of Business requires each enrolled student to adopt the Honor System. The Honor Pledge best describes the conduct promoted by the Honor System. It is as follows: "I affirm that I belong to the honorable community of The University of Texas at Austin Graduate School of Business. I will not lie, cheat or steal, nor will I tolerate those who do." "I pledge my full support to the Honor System. I agree to be bound at all times by the Honor System and understand that any violation may result in my dismissal from the Graduate School of Business."

Please see "standards_of_academic_integrity.pdf" on the course webpage.