



# MBA/MIB 5315 Statistical Methods for Management Decisions

## Section A

Time: Section A: MW 1730-2015  
Location: STR 202

### Instructor:

Dr. John A. Dobelman, [dobelman@stat.rice.edu](mailto:dobelman@stat.rice.edu) (until I get the UST one working)  
Office Hours: By appointment only, via email or 713 348 5369, mobile 713 502 3894.  
Welder Hall 219 cubicle 3, 713 525 3132 x5983#, but not there that often.

Course Website: <http://www.stat.rice.edu/~dobelman/courses/mba5315.html>

Also, check the blackboard.

### Texts to Purchase

Course Text: *Business Statistics, a Decision-Making Approach*, 6<sup>th</sup> ed., David Groebner, P. Shannon, P. Fry, K. Smith, Prentice Hall, NJ, 2005, ISBN: 0130477850  
Casebook: ~~Peck, Roxy [et al.] (2006). *Statistics: A Guide to the Unknown*, 4th ed. Belmont, CA, Thomson, Brooks/Cole, 440p. ISBN: 0534372821~~

### Course Description:

This course is designed to introduce the student to statistical methodology useful for data analysis and managerial decision-making. Emphasis will be placed on applications through working examples and computer-assisted data analysis in lab sessions.

### Student Development

All students in the class are expected to produce well-written documents and work independently, as befit future leaders of the public and private sectors.

### Teams

Students will group into teams of no more than 4 or 5 for the teamwork elements of the course. In order to maintain morale, the Professor reserves the right to make teams in absence of student initiative.

Course Content: Chapters 1–9 of text plus special topics, Possible special data project(s)

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|------------|--|
| Ch 1,2,13a | data, graphs, determinism vs. stochasticity, populations vs. samples, experimental design, sampling, inference, bivariate data; scatterplots, least squares regression and correlation |
| Ch 3       | data reduction, descriptive statistics, "normal" distribution  |
| Ch 4       | randomness, probability concepts, random variables (r.v.'s), distribution moments (mean, variance, etc.); discrete models  |
| Ch 5       | continuous probability models  |
| Ch 6,7     | sampling distributions, counts and proportions, point and interval estimation: confidence, significance, statistical tests   |
| Ch 8,9     | Introduction to hypothesis testing; power and inference, inference for single and two populations  |

Ch 9,10 Hypothesis testing and inference for two populations, and for population variance  
Ch 12 Good-of-fit tests, contingency analysis, and general categorical data analysis

Other Topics

Ch 11 Introduction to Analysis of variance (ANOVA), two-factor analysis; Linear regression, correlation analysis, causation, and data transformations  
Ch 13b Statistical inference for regression parameter estimates  
Ch 14 multivariate (multiple) regression and ANOVA  
Ch 15 time series analysis and forecasting  
Ch 16 non-parametric statistics  
Ch 17 Quality control, statistical process control (SPC)  
Ch 18 decision analysis - uncertainty vs. risk, utility theory, game theory

Grading: 50% assignments, 50% examination. Weights are not deterministic.

**Late policy:** 20% penalty for assignments turned in by next class; no credit for later than this.

Assignments/Cases/Project 50%

9 Homework Assignments  
Major Case/Course Project

Test/Quiz/Exam 50%

Exam I:  $\frac{1}{3}$   
Exam II:  $\frac{1}{3}$   
Final Exam:  $\frac{1}{3}$

Extra Credit: As needed. If you feel you need extra credit, please do not hesitate to contact me. Tutoring is available at the Reading and Learning Center, please avail yourself of this resource. I too am available, but office hours must be scheduled with advance notice.

Paper Submissions: All assignments must be submitted in paper format. For reasons beyond my control, I cannot “just print out” e-mailed assignments. In general, 10% loss of credit results from this process.

**HINT:** At some point you will find that the homeworks are easier to complete if you do them by hand (with a pencil!), rather than trying to “fight” the word processor. A simple experiment shows that it takes 5 seconds to write  $e^{-j\pi} + 1 = 0$  on paper, but it takes 13 seconds for an experienced operator using a fast inline equation editor. It takes 24 seconds using font tricks to “write”  $e^{j\pi} + 1 = 0$  like this, and it doesn’t look as good as the equation editor version. And, I’m STILL trying to figure out how to use the “Insert-Symbol” thing in MS Word.

Other remarks.

If you choose to use a previous version of the textbook, it is your responsibility to use the correct edition for all assignment submissions.

Academic Misconduct Code for the University of St. Thomas. Until such time as the UST student body demands the establishment of an Honor Code, all work in this course is governed under University Academic Integrity rules. To wit:

..... Academic misconduct in any form is unacceptable and suspected violations will be pursued aggressively. All of the work you do in this course is expected to be your own. Absolutely no cheating or plagiarism (using someone else’s words or ideas without proper attribution) will be tolerated. Any cases of cheating or plagiarism will be handled according to university policy and reported to the University’s Academic Misconduct Committee.

.....Academic misconduct includes: (a) cheating (using unauthorized materials, information, or study aids in any academic exercise), plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any and all other actions that may improperly

affect the evaluation of a student's academic performance or achievement; (b) assisting others in any such act; or (c) attempting to engage in such acts.

.....As students at this University, please remember that you are all responsible for the honesty and integrity of everyone in this community. That means it is your responsibility to report any and all cheating – even if it is your best friend. To do any less would be a violation of your integrity and would cheapen any true friendship.....

### Disabilities:

Any student with a documented disability needing academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain confidential. Students with disabilities may also contact the Director of Human Resources concerning an accommodation.