GSB420: BUSINESS ANALYTICS TOOLS
Spring, 2018
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Professor: Jin Man Lee
Office: Loop Campus (DePaul Center Room #6230)
Phone: (312)362-5970
Email: jlee141@depaul.edu
The best way to reach me is to send email. Please use GSB420 as a prefix on the subject line to get my attention. If you don't receive my reply within 24 hours, please remind me again. Due to some email filters, your email might be lost. To be sure, you can leave a message on my campus phone, which will be automatically forwarded to my email

OFFICE HOURS: Anyone who wants to have on-site appointment, please see me at 4:30-5:30 or by appointment (DePaul Center 6230)

COURSE OBJECTIVES

The course objective is to provide practical knowledge of mathematics, probability theory, statistics, and regression techniques that are the most relevant and useful in a graduate business program and after completion of an MBA. Mathematics and probability will be useful in some of your MBA courses, but mathematics and probability also are the language of statistics and regression analysis and serious work in statistics and regression analysis requires their use. The course develops ideas, concepts, and vocabulary that graduates of quality MBA programs are expected to know. Although the course is problem oriented, it also is analytical and theoretical to the extent that is necessary in order to develop correct insights and practical understanding of topics presented.

REQUIRED TEXTBOOK

Statistics for Managers using Microsoft Excel, 8th Edition, David M. Levine, David F. Stephen, Kathryn A. Szabat
Earlier editions, such as the seventh or sixth edition, can be used as well. In addition, supplementary material will be available on D2L. Note for mathematics of linear, quadratic, exponential, and logarithmic functions covered at the first week of class.

RECOMMENDED SUPPLEMENTARY TEXTBOOKS

From DePaul library, you can also access two useful books via online;
Business Statistics Demystified by Steven M. Kemp and Sid Kemp.
Statistics for Dummies by Deborah Rumsey.
Jin W. Choi, Step-by-Step Business Math and Statistics, 3rd, 2010, ISBN: 0536560706

EXAMS

- EXAM 1 (APRIL 12)
- EXAM 2 (MAY 10)
- FINAL (D2L Submission by June 9 at 10:00 PM)

ASSIGNMENTS
Weekly homework will be posted in D2L, and it will be due before class every Thursday at 5:00 PM. The answers will be available shortly after 9:00 PM, so any late submission will not be allowed once answers are posted.

SOFTWARE
Excel is the main software for the course. If you do not have access to Excel, it is available in DePauls computer labs (six Loop locations and six Lincoln Park locations). In addition, enrolled students may obtain Microsoft Office 365 ProPlus without charge. Minitab may also be used in part of the course, especially in the regression. Minitab also is available in all of DePauls computer labs; and, in addition, it is available remotely through DePauls Virtual Lab, simply type http://vlab.depaul.edu and sign-in as you would to Campus Connect (a 30-day Minitab free trial is also available from their website (http://www.minitab.com) if desired).

GRADE
Weekly Homework (40%), Exam 1 (15%), Exam 2 (20%), Final Exam (25%)
Scale of grade: A: 93 or above, A-: 88-92.9, B+: 85-87.9, B: 80-84.9, B-: 77-79.9, C+: 75-76.9, C: 70-74.9, C-: 68-69.9, D+: 65-67.9, D: 60-64.9, F: Below 60

COMPUTER INSTRUCTION
Instructions for all computer software, Microsoft Excel and Minitab, will be given by lectures. No prior knowledge is necessary to perform any computational work.

ACADEMIC HONESTY
Work done for this course must adhere to the University Academic Integrity Policy. Violations include but are not limited to the following categories: cheating; plagiarism; fabrication and academic misconduct.

- Cheating: any action that violates University norms or an instructor's guidelines for the preparation and submission of assignments. Such actions may include using or providing unauthorized assistance or materials on course assignments, or possessing unauthorized material during any examination.
- Plagiarism: the representation of another's work as your own. You are to prepare your own homework assignments. Violations may result in the failure of the assignment, failure of the course, and/or additional disciplinary actions.
- Misconduct: This includes but is not limited to attempts to bribe an instructor for academic advantage; persistent hostile treatment of, or any act or threat of violence against, an instructor, advisor or other students. Violations may result in additional disciplinary actions by other university officials and possible civil or criminal prosecution.

You may review the Academic Integrity Policy in the Student Handbook or by visiting Academic Integrity at DePaul University (http://academicintegrity.depaul.edu)

STUDENT WITH DISABILITY

The Center for Students with Disabilities (CSD) offers reasonable academic accommodations and services to support students. It also serves as a resource to the many university departments that have a responsibility to accommodate students. For more information on CSD program, you may visit https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx or call: 312-362-8002.

TENTATIVE SCHEDULE OF TOPICS
(The instructor may change the order or contents by needs, any special material needs for class will be available on D2L)

I. Mathematics

- WEEK 1 (Class note is available on D2L)
  Sets, Counting Rules, and Summation Notation, Functions linear, quadratic, exponential, logarithmic function (reading material on D2L)

II. Descriptive Analytics Using Statistics

- WEEK 2 (CH 1-3)
  Data Collection and Descriptive Statistics
  Calculating Probabilities basic events, unions and intersections of events
- WEEK 3 (CH 4) No Regular Class, Online Test and Online Lecture
  EXAM 1 April 12
  Conditional probabilities, Bayes Formula
- WEEK 4 (CH 5-6)
  Discrete Probability Distributions (Bernoulli, Binomial, Poisson Distribution)
  Continuous Probability Distributions (Normal and t Distributions)
- WEEK 5 (CH 7-8)
  Sampling Distributions and Confidence Interval Estimation
- WEEK 6 (CH 9-11)
  Hypothesis testing for One Sample
  Two Sample Test and Analysis of Variance
- WEEK 7
  EXAM 2 (May 10)
  Business Statistics Applications

III. Predictive Analytics - Regression Analysis

- WEEK 8 (Ch 12),
  Simple Regression Analysis
- WEEK 9 (CH 13-14)
  Multiple Regression Analysis
- WEEK 10 (Combination of Ch13-14 and Nonlinear Equations)
  Nonlinear Regression Model, Discrete Choice Model (if time permitted)

IV. Final Exam

- FINAL EXAM (Take Home Project) Submission (June 9 10:00 PM)