

GSB519: Business Analytics Tools
Spring 2022 (Online Asynchronous)

updated: 2/28/2022

PROFESSOR: Jin Man Lee

Office: 1 E Jackson Blvd, Chicago, IL 60604 (Loop Campus, DePaul Center Room #6230)

Phone: (312)362-5970

Email: jlee141@depaul.edu

COURSE OBJECTIVES

The course objective is to provide practical knowledge of mathematics, probability, statistics, and regression techniques that are the most relevant tools in a graduate business program and valuable tools to make business decisions. Here are some outlines of this class:

- Provide the techniques for mathematics and probability that are analytical foundations in many of your graduate courses.
- Master the foundations for descriptive analytics and predictive analytics to be ready for any advanced data analytics classes.
- Introduce statistical analysis using statistical software such as Excel or Minitab.
- Introduce the business-related examples to develop correct insights and practical understanding in real business.
- Develops ideas, concepts that can be applied to business analytics.

ONLINE ZOOM REVIEW LAB

It is not required to attend, but the lab will be recorded to be shared with anyone who cannot come to class. The ZOOM address is:

<https://depaul.zoom.us/j/95326652941>

- Thursday 5:00-5:30 PM

OFFICE HOURS

This is a personal office hour, so you will be in the waiting room if someone is in the room.

- Monday 4:00-5:00 PM
- Thursday 4:00-5:00 PM
- Please send email to set up an appointment via Zoom if needed.

COMMUNICATION

The best way to reach me is to send an email. Please use GSB519 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.

REQUIRED TEXTBOOK

Statistics for Managers using Microsoft Excel, 8th Edition, David M. Levine, David F. Stephen, Kathryn A. Szabat

(ISBN-13: 978-0134173054, ISBN-10: 0134173058)

Weekly class material will be available on D2L including algebra reviews.

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

- Midterm Exam will be given in week 6. Midterm Exam will be open on May 2 (Monday) at 8:00 AM and must be completed by May 7 (Saturday) at 10:00 PM (Maximum of 180 minutes).
- Final Exam will be given at the end of 10th week. Final Exam will be open on June 6 (Monday) at 8:00 AM and must be completed by June 11 (Saturday) at 10:00 PM (Maximum of 180 minutes).
- All exams will be available on D2L with randomized questions (Open Book and Open Note)

ASSIGNMENTS

Weekly homework will be posted in D2L after weekly class material posted, and it will be due every Saturday at 10:00 PM. There are two types of questions; end of chapter quizzes and essay questions.

- You can try three times for the end-of-chapter questions, and the highest score will be recorded as your grade. The questions will be randomly assigned so that each trial will have a different set of problems. Reviewing all relevant material before attempting the questions is strongly recommended, especially my class note and textbook. All answers will be available shortly after submission for review.
- The essay questions are designed to improve your problem-solving ability. Written answers need to be submitted to the "Submission" folder on D2L. If you need to draw graphs or equations, you can submit scanned or photocopies of the answers. Typed answers are strongly recommended to be readable for the grader.

SOFTWARE

- Excel is the main software for the course. Any enrolled students may obtain Microsoft Office 365 ProPlus without charge. For software policy, please review for the following website:
<https://offices.depaul.edu/information-services/services/Software/Pages/Software-for-Personal-Computers.aspx>

- Minitab may be used in part of the course, especially in the regression analysis. Minitab also is available in all of DePaul's computer labs; and, in addition, it is available remotely through DePaul's Virtual Lab, simply type <http://vlab.depaul.edu> and sign-in as you would to Campus Connect.

GRADE

Weekly Homework (1-10) (5% each, total 50%), Midterm Exam (25%), 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 materials during an 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.

SUMMARY OF WEEKLY SCHEDULE

Here is the schedule for each week

1. Sunday 10:00 AM : New weekly material will be posted in D2L including lecture note and homework
2. Monday 4:00-5:00 PM: Open Zoom office hour
3. Thursday 4:00-5:00 PM: Open Zoom office hour
4. Thursday 5:00-5:30 PM: Online Review Lab
5. Saturday 10:00 PM : All Weekly Assignments Due

TENTATIVE SCHEDULE OF TOPICS (ONLINE CLASS VERSION)

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

I. Mathematics

- WEEK 1
Sets, Counting Rules, and Summation Notation (reading material on D2L)
Functions – linear, quadratic, exponential, logarithmic functions (reading material on D2L).

II. Statistics

- WEEK 2 (CH 1-3)
Data Collection and Descriptive Statistics
Calculating Probabilities – basic events, unions and intersections of events
- WEEK 3 (CH 4-5)
Conditional probabilities, Bayes Formula
Discrete Probability Distributions (Bernoulli, Binomial, Poisson Distribution)
- WEEK 4 (CH 6)
Continuous Probability Distribution (Normal, and t Distribution)
- WEEK 5 (CH 7-8)
Sampling Distributions and Confidence Interval Estimation
- WEEK 6 (MIDTERM EXAM)
Review and Midterm Exam Week
Midterm (Starts on May 2 (Monday) at 8:00 AM and must be completed by May 7 at 10:00 PM (Maximum of 180 minutes))
- WEEK 7 (CH 9-11)
Hypothesis test for One Sample
Two Sample Test and Analysis of Variance

III. Regression Analysis

- WEEK 8 (Ch 13),
Simple Regression Analysis
- WEEK 9 (CH 13-14)
Multiple Regression Analysis
- WEEK 10 (Combination of Ch13-14 and Nonlinear Equations)
Nonlinear Regression Model, Logistic Regression Model

IV. Final Exam

- FINAL EXAM (open on June 6 at 8:00 AM and must be completed by June 11 at 10:00 PM (Maximum of 180 minutes))