GSB519: BUSINESS ANALYTICS TOOLS
Fall 2020

This course provides foundational quantitative analytical skills to address typical problems that arise in business. The course emphasizes a problem-oriented approach utilizing software applications such as Excel for data analyses. The topics covered in the course include relevant mathematical concepts such as algebra and probability theory/application as well as a strong focus on fundamental statistical tools such as hypothesis testing, regression analysis and forecasting.

Professor: Thomas Walker
Email: twalke14@depaul.edu
Preferred Contact Method: Email. Please use GSB519 as a prefix in the subject line. Be sure to use your @depaul.edu email address to avoid any email filter issues. I do my best to respond to email within 24 hours. Sometimes I reply immediately, other times may take a bit longer, but never longer than 48 hours.
Office Hours: Virtually at designated hours or by appointment.

COURSE OBJECTIVES
This course will provide practical knowledge of mathematics, probability theory, statistics, and regression techniques that are the most relevant and useful in a graduate business program and upon completion of an MBA. Mathematics and probability may be useful in other MBA courses. Mathematics and probability are the language of statistics and regression analysis and serious work in statistics and regression analysis requires their use. This course develops ideas, concepts, and vocabulary that graduates of quality MBA programs are expected to know. Although the course is problem oriented, it is also 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. Notes for mathematics of linear, quadratic, exponential, and logarithmic functions covered in the first week of class.

EXAMS

- Exam 1 – Due Sunday, October 4th by 11:59pm.
- Exam 2 – Due Sunday, November 1st by 11:59pm.
- Final (D2L submission by Monday, November 23rd at 11:59pm)

ASSIGNMENTS
Weekly assignments will be posted on D2L, and they will be due at 11:59pm CT on Sunday nights. For any written assignments, the answers will be available at 9:00am CT Monday morning, so any late submissions 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 DePaul's computer labs (six Loop locations and six Lincoln Park locations). In addition, enrolled students may obtain Microsoft Office 365 ProPlus without charge.

Zoom
A portion of this course will be taught live via Zoom. I will provide a Zoom link in D2L for you to connect. I ask that you switch on your webcam during class, as this will make for a richer environment for all of us. Please get in touch with me before class if there is a reason why you cannot switch on your webcam. I will record all Zoom sessions automatically but will only release recording to students registered for this section of the course.

Zoom is an enterprise video/web conferencing and collaboration solution for DePaul's faculty, staff, and student employees.

Please download the Zoom client before your first class and read the Zoom instructions.

- *Download Zoom Client (https://depaul.zoom.us/download)*
- *Zoom Video Tutorials (https://support.zoom.us/hc/en-us/articles/206618765-Zoom-Video-Tutorials)*
- *Zoom Support FAQ (https://support.zoom.us/hc/en-us/articles/206175806-Top-Questions?flash_digest=0d96b1924dbc68c124d363d5d255d51fda1a78e2)*

Frequently Asked Questions

Can I connect from a room system?
Yes. Zoom will allow you to connect from a room system.

Are classes recorded in Zoom?
Yes. The default will be to record classes, but to only share the recording with students at my discretion. If video is shared, it will be in a streamed format.

Are there instructions on how to connect to Zoom?
Yes. You can find them here.

Can I increase the size of the video window, so I I can see the professor and classroom in more detail?

Yes. Complete instructions on how to do this are found here. The quick process is:

1. *Click the **swap icon** at the upper right corner of the Zoom window to switch the content for the video feed.*
2. *Click the icon at the upper right to swap it back or click Switch to Sharing Content.*
3. *Click **View Options**, then **Side-by-Side Mode** to switch into Side-by-Side Mode.*
4. *Drag the vertical bar that separates the windows left and right to resize to your preferences.*

Help! My computer is not working, how can I connect to the videoconference?
Zoom supports the PC and macOS operating systems on personal computers, along with room

systems. If none of these are available to you, then you can use your smartphone (Android or iOS) to connect as a backup. The experience will not be as good as a desktop computer or room system, but it will allow you to connect. In dire circumstances, or if your microphone and speakers are not working, you can connect via a regular telephone connection.

Do I use the same Zoom meeting ID for all courses at DePaul?
No - Each DePaul course will have a dedicated meeting ID, but the same meeting ID will be used each week of the course.

GRADE
Weekly Homework (40%), Exam 1 (15%), Exam 2 (20%), Final (25%)

GRADE SCALE
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, D-: 60-64.9, F: Below 60

COMPUTER INSTRUCTION
Instructions for Microsoft Excel will be given during the synchronous-lecture component of the course. 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 valance 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 the DePaul University webpage (http://academicintegrity.depaul.edu).

STUDENTS WITH DISABILITIES
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 the CSD program, you can visit https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx or call: 312-362-8002.

TENTATIVE SCHEDULE OF TOPICS
(The instructor reserves the right to change the order of topics covered or content covered in this course. Any additional material will be posted on D2L.)

I. Mathematics

- **WEEK 1** (Lecture notes are available on D2L)
  Functions – Linear, Quadratic, Exponential, Logarithmic Functions
  Sets, Counting Rules, and Summation Notation
  Problem Set 1

II. Descriptive Analytics Using Statistics

- **WEEK 2** (CH 1-3)
  Data Collection and Descriptive Statistics
  Problem Set 2
- **WEEK 3** (CH 4)
  Calculating Probabilities: basic events, unions, and intersections of events
  Conditional probability
  Problem Set 3
  Exam 1
- **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
  Problem Set 4
- **WEEK 6** (CH 9-10)
  Hypothesis testing for One Sample
  Two Sample Test
  Problem Set 5
- **WEEK 7** (CH 11)
  Analysis of Variance and Business Statistics Applications
  Exam 2

III. Predictive Analytics – Regression Analysis

- **WEEK 8** (CH 13)
  Simple Regression Analysis
  Problem Set 6
- **WEEK 9** (CH 14-15)
  Multiple Regression Analysis and Nonlinear Regression
- **WEEK 10** (CH 16)
  Time-Series Forecasting

IV. Final

- Final Project Submission (Monday, November 23rd by 11:59pm)