

**GSB420: Applied Quantitative Analysis**  
**Autumn, 2019 (Online Class)**  
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**Professor:** Jin Man Lee

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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 an on-site appointment, please send email to setup an appointment (My office is at DePaul Center 6230)

### **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 useful tools to make business decisions. Mathematics and probability will be extensively used in some of your graduate courses. They are also important foundations for statistics and regression analysis and any advanced level of data analytic classes. The course develops ideas, concepts, and vocabulary that any graduate level 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

Weekly class material will be available on D2L including linear, quadratic, exponential, and logarithmic functions.

### **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 October 20 at 00:01 AM and must be completed by October 26 11:59 PM (Maximum of 180 minutes).
- Final Exam will be given at the end of 10th week. Final Exam will be open on November 23 at 00:01 AM and must be completed by November 27 11:59 PM (Maximum of 180 minutes).
- We will use online exam tools called Examity. Examity is a live proctoring service for online exams. The exams are monitored and recorded. The online proctors watch DePaul students during exams, and intervene if required. You will need to have a pc or laptop that is equipped with camera at a quiet room to take exam using Examity. More details are available at D2L.
- Students need to register to Examity and make an appointment. An online proctor will be assigned to each student, so availability of each time slot will be limited (first come first serve).

## **ASSIGNMENTS**

Weekly homework will be posted in D2L after weekly class material posted, and it will be due every Saturday at 10:00 PM. The answers will be available shortly after 10:00 PM, so any late submission will not be allowed. You can try three times and the highest score will be recorded as your grade. The questions will be randomly assigned, so each trial will have a different set of questions. It is strongly recommended to review all relevant material before attempting the questions.

## **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. Minitab may also be used in part of the course, especially in the regression analysis segment. 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 (a 30-day Minitab free trial is also available from <http://www.minitab.com>).

## **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. Saturday 10:00 PM : All weekly homework Assignment Due

## **TENTATIVE SCHEDULE OF TOPICS (ONLINE CLASS VERSION)**

(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 9/15-9/21  
Sets, Counting Rules, and Summation Notation (reading material on D2L)  
Functions – linear, quadratic, exponential, logarithmic functions (reading material on D2L).

### **II. Statistics**

- WEEK 2 9/22-9/28 (CH 1-4)  
Data Collection and Descriptive Statistics  
Calculating Probabilities – basic events, unions and intersections of events
- WEEK 3 9/29-10/5 (CH 4-5)  
Conditional probabilities, Bayes Formula  
Discrete Probability Distributions (Bernoulli, Binomial, Poisson Distribution)
- WEEK 4 10/6-10/12 (CH 6)  
Continuous Probability Distribution (Normal, and t Distribution)
- WEEK 5 10/13-10/19 (CH 7-8)  
Sampling Distributions and Confidence Interval Estimation
- WEEK 6 10/20-10/26  
Review and Midterm Exam Week  
Midterm ( Examity will be available from October 20 00:01 AM to October 26 11:59 PM)
- WEEK 7 10/27-11/2 (CH 9-11)  
Hypothesis test for One Sample  
Two Sample Test and Analysis of Variance

### **III. Regression Analysis**

- WEEK 8 11/3-11/9 (Ch 13),  
Simple Regression Analysis
- WEEK 9 11/10-11/16 (CH 13-14)  
Multiple Regression Analysis
- WEEK 10 11/17-11/23 (Combination of Ch13-14 and Nonlinear Equations)  
Nonlinear Regression Model, Discrete Choice Model (if time permitted)

### **IV. Final Exam**

- FINAL EXAM (Examity will be available from November 23 00:01 AM to November 27 11:59 PM)