



## Course Syllabus

# OPRE 6301: Quantitative Introduction to Risk and Uncertainty in Business Summer 2016

Naveen Jindal School of Management (JSOM)  
The University of Texas at Dallas

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## Course Information

**Course:** OPRE 6301 (MBA: Healthcare Management Emphasis)  
Quantitative Introduction to Risk and Uncertainty in Business  
This course requires a Windows-based computer and Excel 2010 or higher.

**Professor:** Dohyeong Kim, Ph.D., Associate Professor

**Term:** Summer 2016

**Dates:** May 20 – August 5, 2016 (Final Exam is Tuesday, August 9, 2016)  
Hybrid course (intensive classroom instructions, webinar sessions & eLearning)

## Instructor Contact Information

Office Phone: 972-883-3512  
Office Location: GR 3.209  
Email: [dohyeong.kim@utdallas.edu](mailto:dohyeong.kim@utdallas.edu)  
*Email is checked daily, but voicemail on office phone is not checked often.*  
Office Hours: By Appointment

## About the Instructor

Dr. Dohyeong Kim is an Associate Professor of Public Policy and Geospatial Information Sciences at the University of Texas at Dallas. He received his Ph.D in city and regional planning at the University of North Carolina at Chapel Hill, with a specialization of health policy and management. He has taught all levels of statistics courses in universities over ten years (both in-class and online).

He currently serves as a director of the Center for Geospatial Research in Global Health Policy ([www.utdallas.edu/geospatial-health](http://www.utdallas.edu/geospatial-health)) and a co-editor-in-chief for *Journal of Safety and Crisis Management*. He published over 30 scholarly documents, including highly-cited peer-reviewed articles in top-ranked journals in the public and environmental health field such as *Environmental Health Perspective*, *Value in Health*, *Risk Analysis*, *Health Policy and Planning*, *Environmental Science & Technology*, *American Journal of Tropical Medicine and Hygiene*, *International Journal of Health Planning and Management*, *Epidemiology and Infection*, *Allergy*, *Asthma & Immunology Research*. His work has been cited more than 470 times in the literature (H-index is 11) and presented in over 110 national and international meetings.

## **Course Description**

Introduction to statistical and probabilistic methods and theory applicable to situations faced by managers and is presented in more of a non-mathematical format for the needs of the practitioner. Topics include: graphical and numerical data presentation and summarization, basic probability and sampling distributions, basic hypothesis testing (t-tests, chi-square tests, and analysis of variance, etc.), estimation and confidence intervals, and correlation and regression analysis. Ample hands-on experiences with computer-based data analysis will be provided to practice how to utilize various quantitative methods with real-world data on health and medicine.

## **Student Learning Objectives/Outcomes**

Students are expected to develop skills on problem formulation, identification of appropriate statistical techniques, manual calculations and computer implementations with actual data, and interpretation of empirical results. Upon completion of this course, students should be able to:

- 1) Understand key statistical concepts and terms;
- 2) Organize and summarize raw data using tables, graphs and numbers;
- 3) Develop and test hypotheses in healthcare business and management;
- 4) Interpret findings of basic and intermediate statistical analyses;
- 5) Conduct basic data analysis using Microsoft Excel.

## **Required Textbooks and Software**

### **Textbook:**

#### *Required:*

Herkenhoff L. and Fogli J., *Applied Statistics for Business and Management using Microsoft Excel*. New York: Springer, 2013 (ISBN: 978-1-4614-8422-6 (print) / 978-1-4614-8423-3 (eBook))

**\*\*\*Students are highly recommended to bring this required textbook to the intensive sessions on May 20-22, and required to have the textbook no later than the week of May 23rd.**

#### *Supplementary (optional):*

Frankfort-Nachmias C. and Leon-Guerrero A., *Social Statistics for a Diverse Society*, 6<sup>th</sup> Edition. Thousand Oaks, CA: Pine Forge Press, 2011 (ISBN: 1-4129-9253-2 (Print) / 1-4129-9255-9 (eBook))

Textbooks can be ordered online through off-campus bookstore or the UTD Bookstore. They are also available in stock at both bookstores.

### **Software:**

This course uses a Windows-based computer, eLearning, Internet access, Microsoft Excel 2010 or higher (no trial versions), Data Analysis add-in activated (this comes with Excel). You may be able to use an older version of Excel or a Mac, but an additional installation would be necessary and the display may appear slightly different. All the datasets used for lectures and assignments will be available for download from the eLearning website. No prior Excel experience is necessary, although it may prove helpful.

### **Other course materials:**

Any other required and suggested readings, along with the lecture slides, will be posted to the eLearning website.

## **Course Policies**

### *Hybrid Course:*

This course was developed as a hybrid course which includes the 3-day intensive classroom instruction, virtual classroom webinar sessions and a web course tool called eLearning. Most of the fundamental concepts and theories will be covered during the intensive sessions in **May 20-22, 2016**, along with the basic training of Excel. There will be 2 virtual classroom webinar sessions using WebEx (synchronous online video classes) in each of the 4 designated weeks (a total of 8 sessions), generally scheduled before the problem set due dates and the final exam. The times/dates for these sessions are in this syllabus' [Academic Calendar](#). **Students are required to attend at least one of the two webinar sessions offered in each week (i.e. either 1A or 1B).** The link for each WebEx session will be sent out to students prior to the scheduled time. These WebEx sessions are dedicated to go over practice questions in preparation for the assignments/exam and answer questions from students.

### *Final Exam:*

The final exam must be taken during the scheduled test window which is listed on the [Academic Calendar](#), as a makeup exam will not be offered for this course. It is the student's responsibility to have a reliable computer with all of the required software and data files during the exam.

### *No Extra Credit:*

There will be no extra credit opportunities for this course.

### *Late Work:*

None accepted, except in the case where the student provides a written excuse from the appropriate authority.

### *Virtual Classroom Citizenship:*

Students are required to login regularly to the course eLearning site. The instructor may use the tracking feature in eLearning to monitor student activity. Students are also highly recommended to participate in all class activities such as WebEx webinar sessions, discussion board, email communications, etc. The same guidelines that apply to traditional classes should be observed in the online instruction environment for this course. Please use proper netiquette when interacting with class members and the instructor.

### *Policy on Server Unavailability or Other Technical Difficulties:*

The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the UTD eLearning Help Desk: <http://www.utdallas.edu/elearninghelp> (phone: 1-866-588-3192). The instructor and the UTD eLearning Help Desk will work with the student to resolve any issues at the earliest possible time. However, it is the student's responsibility to have a reliable internet connection.

## **Technical Requirements**

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

## Course Access and Navigation

Online instruction is to be delivered using eLearning and WebEx virtual classroom sessions. Students will use their UTD NetID account to login at: <http://elearning.utdallas.edu>. Please see more details on the [Course Access and Navigation](#) webpage. To get familiar with the eLearning tool, please see the [eLearning Student Tutorials](#).

UTD provides eLearning technical support 24 hours a day/7 days a week. The services include a toll free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service. Please use this link to access the UTD eLearning Support Center: <http://www.utdallas.edu/elearninghelp>.

## Communications

The eLearning has built-in communication tools which will be used for interaction and communication. Some external communication tools such as regular email and WebEx will also be used during the semester. The Discussion Board is to be utilized to exchange ideas or to help each other in how to get started on suggested problem set questions. These types of exchanges should be limited to conceptual discussions, and not to include the posting of detailed solutions for any problems. Test questions must not be discussed on the Discussion Board. For more details, please visit the [eLearning Student Tutorials](#) webpage for video demonstrations on numerous tools in eLearning.

Students are expected to use and maintain their UT Dallas email account and ensure that their mailboxes are not full. Important correspondence will be delivered via email through eLearning.

### Interaction with Instructor

The instructor will communicate with students mainly using the Announcements and Discussions tools in eLearning. Students may send personal concerns or questions to the instructor using the course email tool. The instructor will reply to student emails or Discussion board messages within 3 working days under normal circumstances. Should you need assistance in solving problems, please utilize the Discussion Board to help each other, and/or ask the instructor. In the event any emails are sent to the instructor for help, some evidence must be included to show you have attempted the problems.

## Student Resources

The following university resources are available to students:

**UTD Distance Learning:** <http://www.utdallas.edu/elearning/students/cstudents.htm>

**McDermott Library:** Distance Learners (UTD students who live outside the boundaries of Collin, Dallas, Denton, Rockwall, or Tarrant counties) will need a UTD-ID number to access all of the library's electronic resources (reserves, journal articles, eBooks, interlibrary loan) from off campus. For UTD students living within those counties who are taking online courses, a Comet Card is required to check out materials at the McDermott Library. For more information on library resources go to: <http://www.utdallas.edu/library/distlearn/disted.htm>

## Academic Calendar

Date/Time (CST)			Topic/Event	Text/Material
Intensive classroom sessions	May 20 (Fri)	AM-I	Course Overview & Review of Statistical Concepts	Ch.1
		AM-II	Basic Excel training	Ch.2
		PM	Unit 1 Lecture: Summarizing Data	Ch.2-3
	May 21 (Sat)	AM	Unit 2 Lecture: Distribution & Sampling	Ch.4, 6, 8
		PM-I	Unit 3 Lecture: Inference	Ch.7
		PM-II	Unit 4 Lecture: Hypothesis Testing (1): T-test, F-test	Ch.11
	May 22 (Sun)	AM-I	Unit 5 Lecture: Hypothesis Testing (2): $\chi^2$ test	Ch.12
		AM-II	Unit 6 Lecture: Correlation & Regression	Ch.9
		PM-I		Ch.10, 13
		PM-II	Wrap-up & Guide to Online Sessions	
Week of May 23			Unit 1 Practice & Exercise	PS #1
Week of May 30			Unit 2 Practice & Exercise	
Week of June 6	6-7pm on June 7		Webinar 1A	PS #1
	6-7pm on June 9		Webinar 1B	
	By 11:59pm on June 10		Problem Set #1 Due	
Week of June 13			Unit 3 Practice & Exercise	PS #2
Week of June 20			Unit 4 Practice & Exercise	
Week of June 27	5-6pm on June 28		Webinar 2A	PS #2
	5-6pm on June 30		Webinar 2B	
	By 11:59pm on July 1		Problem Set #2 Due	
Week of July 4			Unit 5 Practice & Exercise	PS #3
Week of July 11			Unit 6 Practice & Exercise	
Week of July 18	6-7pm on July 19		Webinar 3A	PS #3
	6-7pm on July 21		Webinar 3B	
	By 11:59pm on July 22		Problem Set #3 Due	
Week of July 25			Review All Units: Practice & Exercise	PS #1-#3
Week of Aug 1	6-7pm on August 2		Webinar 4A	PS #1-#3
	6-7pm on August 4		Webinar 4B	
9am-11:59pm on Aug 9 (Questions given on 9am; answers to be submitted by 11:59pm)			Final Exam  (Students should find convenient time to take the exam during the test window)	

## Student Assessments

This course requires the completion of three problem sets and one final exam, which are prepared as a tool to evaluate students' understanding of the materials covered in each unit. All assignments **MUST** be prepared in MS Word or PDF format and submitted via a link on the eLearning prior to the due date.

**Grading Criteria:**

Assignment	Materials from (Lecture Slides & Textbooks)	Textbook Chapters	Due Date	Point
Problem Set #1	Units 1 & 2	Ch. 1-6, 8	11:59pm on June 10	20
Problem Set #2	Units 3 & 4	Ch. 7, 11	11:59pm on July 1	20
Problem Set #3	Units 5 & 6	Ch. 9-10, 12-13	11:59pm on July 22	20
Final Exam	All Units	Ch. 1-13	9am-11:59pm on Aug 9	40
COURSE TOTAL:				100

**Letter Grades For the Semester Will Be Determined As Follows:**

Total Points	Letter Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
70-76	C
69 and below	F

**Accessing Grades:**

Students can check their grades by clicking “My Grades” under Course Tools after the grade for each assessment task is released.

**Scholastic Honesty**

The University has policies and discipline procedures regarding scholastic dishonesty. Detailed information is available on the [UTD Student Affairs](#) web page. All students are expected to maintain a high level of responsibility with respect to academic honesty. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

**Course Evaluation**

As required by UTD academic regulations, every student must complete an evaluation for each enrolled course at the end of the semester. A link to an online instructional assessment form will be emailed to you for your confidential use.

**University Policies**

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please go to: <http://go.utdallas.edu/syllabus-policies> for these policies.

***The descriptions and timelines in this syllabus are subject to change at the discretion of the instructor.***