

Course Syllabus
OPRE 6301.0G1
School of Management
The University of Texas at Dallas

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Course Information

Course

Course Number/Section OPRE 6301 Section 0G1
Course Title Quantitative Introduction to Risk and Uncertainty in Business
Term and Dates Fall 2007 (Aug 16 – Nov 21)

Professor Contact Information

Professor John Wiorkowski
Office Phone 972-883-4908
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Email Address wiorkow@utdallas.edu
Office Location MA 3.208
Online Office Hours MW 5 to 6:30 PM
Web Page www.utdallas.edu/~wiorkow/

About the Instructor

John Wiorkowski received his Ph.D. in mathematical statistics in 1972. He has consulted with many and diverse businesses as well as with government agencies. He has published articles in most major statistical journals.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

MATH 5304 or equivalent

Course Description

Introduction to statistical and probabilistic methods and theory applicable to situations faced by managers. Topics include: data presentation and summarization, regression analysis, fundamental probability theory and random variables, introductory decision analysis, estimation, confidence intervals, hypothesis testing, and One Way ANOVA (This section of this class requires a computer).

Student Learning Objectives/Outcomes

- 1) Be able to organize and summarize raw data
- 2) Be able to build and evaluate a regression model from raw data
- 3) Be able to apply the basic rules of Probability Theory
- 4) Be able to apply the concept of a random variable to solve business problems
- 5) Be able to apply the Normal, Poisson, and Binomial Distributions to solve business Problems
- 6) Be able to simulate data from the Normal, Poisson, and Binomial Distributions
- 7) Be able to identify significant changes in averages and proportions
- 8) Be able to determine if two populations have the same mean or the same proportion
- 9) Be able to determine if several populations have the same mean

Required Textbooks and Materials

Required Texts

STATISTICS FOR MANAGEMENT AND ECONOMICS, 7th EDITION, by G. KELLER, DUXBURY PRESS, 2005. (ISBN 0-534-49124-3)

Required Materials

Microsoft EXCEL (MS Office is available at a substantial discount to UTD Students at the UT Dallas Bookstore)

Suggested Course Materials

Suggested Readings/Texts

Lecture Notes downloadable from WebCT course site

Suggested Materials

EXCEL files downloadable from WebCT course site

Textbooks and some other bookstore materials can be ordered online through [MBS Direct Virtual Bookstore](#) or [Off-Campus Books](#) online ordering site. They are also available in stock at the [UTD Bookstore](#) and Off-Campus Books.

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Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirement must be met to enable a successful learning experience. Please review the important [technical requirements and the web browser configuration information](#).

Email Account

It's important that every student in this course should have a valid email account. Instructor will often use email to interact with students. Usually the exams will also be submitted and returned through emails. You're responsible to maintain a working email account with **enough quotas** for the instructor to return your graded exam files.

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Course Access and Navigation

This course was developed using a web course tool called WebCT. It is to be delivered entirely online. Students will use their UTD NetID account to login to the course at: <http://webct.utdallas.edu>. Please see the [course access and navigation information](#).

To get started with a WebCT course, please see the [Getting Started: Student WebCT Orientation](#).

If you have any problems with your UTD account or with the UTD WebCT server, you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at: **972-883-2911**.

If you encounter any technical difficulties within the course site, please send an email to gmbasupport@utdallas.edu.

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Communications

This WebCT course has built-in communication tools which will be used for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. Please see more details about [communication tool information](#).

The preferred method of communication with the instructor for this course is through use of his e-mail address wiorchow@utdallas.edu.

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Student Assessments

Your grade will be based solely on **three examinations (33% each)** given when you finish each module. The exams should be written in report form with graphs, computer output, etc. used to support your answer to the questions. They may be submitted electronically via email if they are self-contained and readable sequentially. The releasing dates and due dates for the exams are as posted below.

You have an option of taking the exams in one of two ways:

a) Three, three hour real time exams (one for each of the modules). These would be done by e-mail. The instructor would send the exam to you and then you would need to return it three hours later. If you choose this route, the exams will be given no later than:

Exam 1	Wed. 9/12
Exam 2	Wed. 10/10
Exam 3	Wed. 11/14

You would be responsible for covering the provided material so that you would be ready for the exams on those dates (of course you can always take the exam earlier).

b) Three take home exams (one for each of the modules). These would be done by e-mail or could be downloaded from the WebCT site. You would have five days to complete each of these exams and submit to the instructor by email. These exams require you to solve a more "real life" problem. The expectation is a report which describes the steps you used to solve the problem, documentation of the solution, and discussion of the results. If you choose this route the exams will be given no later than (again you can always take the exam earlier):

Exam 1	Released 9/10	Due 9/17
Exam 2	Released 10/8	Due 10/15
Exam 3	Released 11/12	Due 11/19

Please let the instructor know by 8/29, 2007 which exam path you wish to take.

Grading Policy

Each Exam is worth 1/3 of your final grade. There is no final exam. The three Exams are averaged and your grade is determined by the following scale:

A 94 – 100 average
B 87 – 93 average
C 75 – 86 average
F < 75 average

You may either take timed exams or take home exams.

Course Policies

Make-up exams

There are no makeup exams. Exams may be taken early by not later than the dates stated above.

Extra Credit

There is no extra credit work in this course.

Late Work

Exams turned in late will be penalized for up to one letter grade per hour.

Class Participation

Students are required to login regularly to the online class site.

Virtual Classroom Citizenship

The same guidelines that apply to traditional classes should be observed in the virtual classroom environment. Please use proper netiquette when interacting with class members and the professor.

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Assignments and Academic Calendar

The course is divided into three modules. An examination is given at the end of each module.

Module 1: Descriptive Statistics

Read Module 1 Lecture Notes

Read the following sections of the text:

Textbook Chapters: Chapter 1; Appendix 1B
Chapter 5
Chapter 2
Chapter 3
Chapter 4 [Add "t" and "z"]
Chapter 17; 17.1 – 17.7
Chapter 18; 18.1 – 18.3
Chapter 19

Textbook Problems: (Practice Only)

5.11, 5.12, 5.14, 5.15

2.12, 2.14, 2.15, 2.20, 2.24a, 2.28.2.43, 2.44a, 2.46, 2.49, 2.53
2.54, 2.64, 2.66, 2.68, 2.70, 2.72, 2.106
3.9
4.1, 4.2, 4.4, 4.6, 4.8, 4.10, 4.18, 4.32, 4.36, 4.60, 4.64, 4.68, 4.86
17.6, 17.8, 17.16, 17.18, 17.98 (a,b,c), 17.104
18.8, 18.10, 18.12, 18.40
19.4, 19.8, 19.16, 19.22, 19.40, 19.48

Exam 1 Sep. 12 Timed Exam: 7 to 10 PM
Take Home Exam Due September 19

Module 2: Probability and Random Variables
Read Module 2 Lecture Notes
Read the following sections of the text:

Textbook Chapters: Chapter 6 [Add Bayes Theorem; Basic Portfolio Analysis]
Chapter 7 [Add Poisson Approximation to the Binomial]
Chapter 8: 8.2 – 8.3 [Add Normal Approximation to the Poisson]
[Add simulation of random variables using the computer]
Chapter 23 [Add Risk Criteria; Decision Simulation]

Textbook Problems: (Practice Only)
6.8, 6.28, 6.36, 6.40, 6.42, 6.44, 6.56, 6.58, 6.62, 6.66, 6.70, 6.80, 6.96, 6.100
7.20, 7.30, 7.32, 7.54, 7.68, 7.70, 7.72, 7.74, 7.76, 7.96, 7.98,
7.104, 7.108, 7.112, 7.116, 7.118, 7.120, 7.122, 7.126, 7.130, 7.132, 7.136
8.34, 8.36, 8.38, 8.40, 8.42, 8.54, 8.56, 8.64, 8.86, 8.88, 8.90
8.94, 9.30, 9.32, 9.36, 9.38, 9.42 (Not a typo)
23.10, 23.12, 23.14a, 23.16, 23.32 (a, b), 23.44

Exam 2 Oct. 10 Timed Exam 7 to 10 PM
Take Home Exam Due October 15

Module 3: Statistical Estimation and Inference
Read Module 3 Lecture Notes
Read Textbook sections:

Textbook Chapters: Chapter 9
Chapter 11: 11.1 – 11.3
Chapter 10
Chapter 12: 12.1, 12.3 – 12.5
Chapter 13: 13.1 – 13.3
Chapter 15: 15.1, 15.6
Chapter 16: 16.1 – 16.3

Textbook Problems (Practice Only)
9.22, 9.28, 9.30, 9.32, 9.36
11.10, 11.16, 11.44
10.26, 10.32, 10.36, 10.38, 10.52, 10.56
12.16, 12.22, 12.30, 12.34, 12.88, 12.92a, 12.122, 12.124
13.4, 13.18, 13.26, 13.46, 13.70, 13.88, 13.100
15.8, 15.10, 15.12, 15.16, 15.60, 15.70, 15.72, 15.74, 15.76, 16.12, 16.14
(Note: The book uses an alpha value of .10. This is bad practice, use alpha =
.05 or .01).

Exam 3 Nov. 14 Timed Exam 7 to 10 PM
Take Home Exam due November 19

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Scholastic Honesty

The University has policies and discipline procedures regarding scholastic dishonesty. Detailed information is available on the [Scholastic Dishonesty](#) 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.

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Course Evaluation

As required by UTD academic regulations, every student must complete an evaluation for each enrolled course at the end of the semester. An online instructional assessment form will be made available for your confidential use. Please look for the course evaluation link on the course Home page towards the end of the course.

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University Policies

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work

done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written

appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:
The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean.
(http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm)

These descriptions and timelines are subject to change at the discretion of the Professor.

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