



Water Tower Campus
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QUINLAN SCHOOL OF BUSINESS ADMINISTRATION

ISSCM 241 – Business Statistics
Section 102
Winter 2018,
MWF 11:30-12:20,
Room 207 Corboy Law Center

Instructor: Kelly Mink
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415-E
Office Phone:
Extension 5-6845
Office Hours: 12:30 – 1:30 pm MW

Note: Jan 15 is Martin Luther King Day; course begins this term on Jan 17!
Spring Break is March 5 – 10; no classes (re: Good Friday and Easter) Mar 30 and Apr 2.

Course Description:

The fundamentals of managerial statistics are presented. Topics may include descriptive statistics, random variables, probability distributions, estimation, hypothesis testing, regression, and correlation analysis. Statistical software is used to assist in the analysis of these problems.

Course Overview:

This purpose of this course is to provide students with statistical tools needed by managers. The course emphasizes understanding the process associated with statistical decisions, defining and formulating problems, analyzing the data, and using the results in decision making.

Course Objectives and Learning Outcomes

Students will be able to demonstrate understanding of statistical thinking and data analysis techniques for decision-making under uncertainty.

Students will be able to apply statistical techniques to data sets, and correctly interpret the results.

Students will be able to analyze and apply computer-generated statistical output to solve problems.

Required Materials

OpenIntro Statistics, 3rd Edition, by Diez, Barr and Cetinkaya-Rundel. ISBN: 9781943450039

This book can be downloaded free as a pdf at <https://www.openintro.org/stat/textbook.php> or purchased in paperback format on Amazon for around \$15.

Please be sure that you have full access to the text during class

Attendance

Class attendance is mandatory and essential to the value of the learning experience. Students are expected to attend all class sessions in order to pass the course

In the event unavoidable emergencies or conflicts prevent you from attending class, please notify the instructor by e-mail prior to missing the class, and request options for covering missed material. Most of the subjects in a course are sequential. Therefore, it is important to understand the material covered in the missed class before the next class.

Make-Up Examinations/Assignments

Because Quinlan faculty believe examinations represent a critical component of student learning, required examinations should be taken during the regularly scheduled class period.

Make-up examinations are discouraged. Exceptions may be granted only by the faculty member or department chair, **and only for unavoidable circumstances** (illness verified by a signed physician's note, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, or religious observance). A make-up final examination may be scheduled only with the permission of the appropriate Quinlan Assistant or Associate Dean.

Academic Integrity

All members of the Quinlan School shall refrain from academic dishonesty and misconduct in all forms, including plagiarism, cheating, misrepresentation, fabrication, and falsehood...Plagiarism or cheating on the part of the student in individual or group academic work or in examination behavior will result minimally in the instructor assigning the grade of "F" for the assignment or examination. In addition, all instances of academic dishonesty must be reported to the chairperson of the department involved.

For further information about expectations for academic integrity and sanctions for violations, consult the complete Quinlan School of Business Honor Code and Statement of Academic Integrity on the Quinlan website:

<http://www.luc.edu/media/lucedu/quinlanschoolofbusiness/pdfs/Honor-Code-Quinlan-July2012.pdf>

Course Website:

Most of the course materials (syllabus, announcements, lecture notes, homework assignments, etc.) will be posted on the course website at Loyola Sakai Learning Management System (Sakai).

Week by Week Course Outline

Classes will meet on **Monday, Wednesday, and Friday from 11:30-12:20** at the Water Tower Campus in **Corboy Law Center - Room 207**. A list of the topics is shown on the next page.

Week by Week Course Outline

Week	Date/Day	Topic	Chapter	Notes
1	Jan 17, 19 NOTE JAN 15 IS MARTIN LUTHER KING DAY!	Introduction to Data – Data Basics, Collection, Sampling, Observations Experiments	1	
2	Jan 22, 24, 26	Examining numerical data – Graphical Presentation (plots, histogram for frequency distribution...) – Numerical Presentation (Mean, Median, Mode, Range, Standard deviation, variance) Examining categorical data – Contingency Tables (Using pivot tables)	1	Skip pp. 46-54
3	Jan 29, 31, Feb 2	Probability	2	Skip pp. 108-112
4	Feb 5, 7, 9	Distributions of Random Variables -Normal distribution; Bernoulli variables; Geometric and Binomial distributions -Central Limit Theorem (pp 171-173, pp 194-197)	3 4	Skip pp. 149-157
5	Feb 12, 14, 16	Review of Weeks 1-4 Exam I (Weeks 1-4)	1, 2, 3, 4	
6	Feb 26, 28, Mar 2	Foundations for Inference - Central Limit Theorem (Review) (pp. 171-173, pp 194-197) - Estimation of the population mean (point estimate, confidence interval estimate) (pp 174-180) NOTE THAT 'WEEK 7' IS SPRING BREAK, MAR 5 - 10	4	
8	Mar 12, 14, 16	Foundations for Inference – Hypothesis Testing (pp 180-185)	4	Skip pp. 199-202
9	Mar 19, 21, 23	Inference for Numerical Data (when Population is not normally distributed, sample size is small) - One-sample t-confidence Intervals - One-sample t-tests - Difference between two means (two-sample tests)	5	Skip 228-230 Skip pp. 240-246
10	Mar 26, 28; MARCH 30 IS GOOD FRIDAY	Inference for Categorical Data - Population proportion (estimation and hypothesis testing) - Difference between two proportions	6	Skip pp. 286-311
11	Apr 4, 6 NO CLASS APR 2	Review of Weeks 6, 7, 8, 9 (Midterm) Exam II (Weeks 6-9)	4, 5, 6	
12	Apr 9, 11, 13	Introduction to Linear Regression - Fitting a line by Least squares regression - Testing the significance	7	
13	Apr 16, 18, 20	Multiple Regression	8	
14	Apr 23, 25, 27	Review of all covered topics Chapters 1 – 8)	1 - 14	
15	Apr 30 - May 5	Final Exam (Covering Weeks 1-14) date TBA		

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Please note: This class may occasionally deviate from the course outlined above. **The instructor reserves the right to make changes as needed to the course syllabus.**

Homework Assignments

Assignment	Due Date	Exercise Problems For each topic and chapter, note that odd-numbered problems have the answers; review 'all of those', TO TEST YOUR OWN UNDERSTANDING! PLUS do the following:	Chapter	Notes
Homework 1	Jan. 22 and Jan 26 (two parts – TBA)	1.2, 1.8, 1.14, 1.24, 1.32, 1.42, 1.44, 1.46, 1.52, 1.59, 1.66	1	(5.5 pts)
Homework 2	End of Week Three (Feb.2)	2.6, 2.14, 2.30, 2.36, 2.44	2	(2.5 pts)
Homework 3	End of Week Four (Feb 9) WEEK FIVE is First Midterm Exam Review	3.2, 3.4, 3.6.1, .3, .4; 3.10, 3.12, 3.13 4.36, 4.40abc	3 4	(4.0 pts)
Homework 4	End of Week Six (Mar 2)	4.2, 4.4, 4.13, 4.14	4	(2.25 pts)
Homework 5	End of Week Eight (Mar 16) [WEEK SEVEN IS SPRING BREAK]	4.18, 4.20, 4.21, 4.22, 4.25	4	(2.5 pts)
Homework 6	End of Week Nine (Mar 23)	5.5, 5.6, 5.7, 5.14, 5.28	5	(2.5 pts)
Homework 7	End of Week Ten (Mar 28; MARCH 30 IS GOOD FRIDAY)	6.2, 6.4, 6.10, 6.30a	6	(2.5 pts)
Homework 8	End of Week Twelve (Apr 13); WEEK ELEVEN IS SECOND MIDTERM REVIEW	7.2, 7.3, 7.4, 7.6, 7.8, 7.12, 7.16, 7.18, 7.30, 7.36abcd, 7.38bcde, 7.44abd	7	(6.0 pts)
Homework 9	End of Week Thirteen (Apr 20)	8.1, 8.2, 8.4abc, 8.8, 8.14	8	(2.5 pts)
Final Exam Review	Week Fourteen (through Apr 27) NOTE THAT WEEK Fifteen is Final Exam Week		Chs 1 - 8	

Course Requirements and Grading Criteria

Your final course grade will be determined by adding together the points you earn from each of the course requirements.

1. Two midterm exams (20 points each) and a Final exam (30 points) will be given during the semester. These exams will be in-class and closed book exams. You are required to take exams during the time specified for this section. Mark your calendar today to make sure that you do not have any conflicts with any of the exams! **There are no makeup exams.** Exception will be made under unusual

circumstances only if the student has obtained prior permission from the instructor.

2. Homework assignments needs to be submitted by 10:30 am on their due dates listed above. They are to be submitted through the course website at Sakai. Each question in homework problems is worth 0.5 point, adding to 30 total points. Late homework policy is given in bullet #3 below.

Requirements and Grading Criteria		
	<u>Points</u>	<u>Percentages</u>
Homework	30	30%
Exam 1 (midterm I)	20	20%
Exam 2 (Midterm II)	20	20%
<u>Final Exam</u>	<u>30</u>	<u>30%</u>
Total	100	100%

3. Late Homework Submission Policy:

up to 24 hrs late	25% penalty
over 24 hrs late	100% penalty
extraordinary circumstances	talk to instructor directly

4. Course Grading Scale

Course Grading Scale	
<u>Grade</u>	<u>Total Points</u>
A	93.0-100.00%
A-	90.0-92.99%
B+	87.0-89.99%
B	83.0-86.99%
B-	80.0-82.99%
C+	77.0-79.99%
C	73.0-76.99%
C-	70.0-72.99%
D+	67.0-69.99%
D	60.0-66.99%
F	Less than 60%