

Fall 2015

QMBE 2786

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University of New Orleans

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Recommended Citation

Easley, W. Michael, "QMBE 2786" (2015). *University of New Orleans Syllabi*. Paper 914.
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QMBE 2786-002 Fall 15

Course Syllabus

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MyScheduleFALL15:

Mon	Tues	Wed	Thurs
1-1:45 PM Office	1-1:45 PM Office	1-1:45 PM Office	1-1:45 PM Office
2-2:50 QMBE 2786-001	2-3:15 PM QMBE 2786-001	2-2:50 QMBE 2786-003	2-3:15 PM QMBE 2786-001
3-4 PM Office		3-4 PM Office	
	4:30-5:30 PM Office		5-5:50 PM QMBE 2787-602
	6-8:45 PM QMBE 4400-601		6-8:45 PM QMBE 2786-601

Prerequisites:

- ▶ Math 2785 or equivalent. You must have had a previous statistics course.
- ▶ Concurrent enrollment in QMBE 2787 (computer lab for this course). ***It is much to your disadvantage to ignore this policy.***
- ▶ A UNO account for access to **Moodle**. Most course documents will be posted. ***Check daily!***

Required tools and materials:

- ▶ The text and Connect website access. Nearly all students should fall into one of these categories:
1. You still have the Connect access with e-book that you bought for Math 2785. That access should be good for at least one year from the time of purchase. Only thing you have to do is register for this new course by following the link below.
 2. You do not have current Connect access. Perhaps you took Math 2785 or Math 2314 more than a couple of semesters ago or perhaps you are a transfer student. In that case, the best thing is to buy the package sold in the bookstore. It is based on Jaggia and Kelly, *Business Statistics: Communicating with Numbers*, 1st edition, but customized for UNO as *Elementary and Intermediate Statistics for Business and Economics*. The package includes a loose-leaf hard text and the Connect access that you need for the homework and costs \$136. This is almost the same price as Connect Plus alone when purchased directly from McGraw-Hill. Do not buy the access code alone from the bookstore (\$180). Get the package!

In either case – whether you already have access or must buy it – once you have a code, go to the following link (the web address for the course) and follow the directions to register for the course:

<https://connect.mheducation.com/class/m-easley-002-tth-1>

Support & Tips

If you have any issues while registering or using Connect, please contact McGraw-Hill's CARE team through <http://www.mhhe.com/support>. Or call 800-331-5094. To avoid problems related to unexpected technical issues, you are advised not to wait until the last moment to complete assignments. Please review your **"Student Quick Tips"** for further support.

Since it is a good idea to read the text, if you did not buy the custom package, I recommend that you print out a hard copy of the sections we will need: 20.5, 12.1, 12.2, 11.2, chapters 13-14, 15.1, 15.4, 16.1, 16.2, and 17.1. It is possible that we may not have time to discuss all the topics included, so print as you go.

- ▶ A calculator (bring to all classes). A calculator with statistical tools (at the least, functions for sample mean and standard deviation) is required. Fancier calculators, such as the TI-83 (highly recommended) are

permitted. I'll try to write tests so that not having a TI-83 will not be an overwhelming disadvantage, but I'd be lying to say that having such a calculator is no advantage. Sharing of calculators on tests is not permitted.

► A statistics course sequence (QMBE 2785, 2786, 2787) review/overview document will be posted to Moodle. The purpose of the document is to give you a cumulative big picture of your QMBE statistics experience. You are responsible for understanding the ideas in it. Questions based on it will be embedded in your quizzes and tests.

Attendance/Participation: For your good -- and that of the University -- the following behavior is expected of all students:

1. Arrive **before** the start of class. Late arrivals are disruptive. Signing up for this section of the course constitutes a promise to be in your seat at 2:00.
2. **Do not leave class early.** Wait until the lecture has ended before packing up your materials.
3. Do not engage in conversation.
4. Turn off all cell phones and laptops. Stow out of reach.
5. Do not bring food or drink into the lecture hall.
6. Bring calculator, statistical tables and the downloaded worksheets to all classes.

Each student starts the semester with 5 attendance/participation points (5% of your grade). You may lose points for tardiness, leaving class early, not having the necessary materials, or not being prepared for class.

But you will definitely lose 1/2 point for each absence over the allowed 2 free absences.

Tests:

- There will be three **75-minute** in-class tests in **mixed format**. The **tentative** dates are:

Test 1 Thursday 9/17

Test 2 Tuesday 10/20

Test 3 Tuesday 12/1

- Changes in these dates will be announced in advance. **You must be available to take the tests on any scheduled class day.** If you are planning an extended absence from the University, don't take this course. You are responsible for keeping up-to-date on all aspects of the course schedule. **Check Moodle often.**

- The 2-hour ***mandatory cumulative*** final exam -- **mixed format** -- will be on

Thursday 12/10 3:00-5:00 PM in the usual room.

- Make-up Tests: There will be **no make-up tests** for any reason. However, each student may ***replace*** the lowest of her/his test grades with the final exam grade. The purpose of this policy is not to improve your grade, but to handle those situations in which a student must miss a test. **Please do not ask for a make-up test.**

Homework: There will be 9-10 homework assignments, which you will access at the Connect website. Many of the problems will be in algorithmic format, which means that each student has the same problem, but with different data/parameters. I will post instructions for completing these assignments -- time due, number of attempts allowed, etc. Since the correct answers become available after the HW is due, ***no time extensions are possible***. Never wait until the last minute to do your HW -- you could have computer/internet problems. Check the time zone setting of your computer. Your lowest HW grade will be dropped.

Each student has to have the access above! Your required Homework will be done online.

Quizzes: You will have a number of very short 5 point quizzes, perhaps only 5 minutes each. They will usually be given at the beginning of class. There will be no make-ups on these and no accommodation for late arrivals. The solutions will be discussed immediately afterwards.

Grading: Here is the formula for your numerical grade in the course:

▶ Grade = .20(Exam) + .50(Av. of 3 Tests) + .20(HW Av.) + Quiz Av. (max = 5pts) + Attendance (max = 5pts)

▶ Your letter grade will be assigned as follows:

100 - 90 = A

89 - 78 = B

77 - 64 = C

63 - 50 = D

49 - 0 = F

I use normal rounding, but there is no other curve. I do occasionally adjust all the grades for a particular test, if that seems warranted.

The Course: This course is a continuation of Math 2785 (or Math 2314, but with emphasis on business/economic data). The class format will be a combination of lecture and completing worksheets together. Normally you will download these in advance from Moodle. If the lead time is short (when I make changes), I will make copies for you. **Note: I do not teach via e-mail.**

Here, **subject to revision**, is our program (the exact material covered by each test announced in advance): In Math 2875 you were exposed, in a very cursory way, to the basic ideas of elementary statistics. You probably spent most of that time mechanically running procedures that you did not really understand. That's normal for the first course. In this course we will learn a number of new procedures, but with real emphasis on understanding their logic. I may also be your Excel statistics lab instructor. The emphasis there will be on logic as well.

Please read through the review document before class. You are supposed to be familiar with those ideas – except for the normal approximation to the binomial. Then we will start with the Sign Test, which in itself is a good review of the binomial and normal distributions and the very important concept of p-value.

Topics, Tentative Schedule and Reading (in addition to reading the text in advance, [download the posted topic documents](#))

- 8/20-25-27 *Review of some basic ideas.* Variance, significance, p-value, test errors. See posted worksheets.
- 8/27,9/1 *Review normal / binomial distributions. Nonparametric methods: Intro. to the Sign Test.*
- 9/3 *The Sign Test.* Section 20.5.
- 9/8-10-15 *Chi-square tests for goodness of fit and independence.* Sections 12.1 and 12.2.
- **9/17 Test 1** (based on the preceding 4 weeks of lectures).
- 9/22 *Hypothesis tests comparing the variances of 2 populations.* Section 11.2. The F test.
- 9/24-29, 10/1-6-8-13 *F-test revisited. Analysis of Variance.* Chapter 13.

● **10/20 Test 2** (F-test and Anova).

- 10/22-27 *Covariance and Correlation*. Section 14.1
- 10/29, 11/3-5-10-12-17 *Simple and Multiple Linear Regression*. Chapter 14 and 15.1, 15.4, 17.1
- 11/19-24 *Further Regression Topics*. 16.1, 16.2, 17.3

● **12/1 Test 3** (Correlation and Regression)

- 12/3 Course evaluation, last questions, discussion of Exam,

Miscellaneous: I am required by the University to include the following on the syllabus.

► **Learning Assurance Course Objectives**

By the end of this course the student should be able to use appropriately collected sample data for testing and prediction. In particular:

A. Student will understand the essential background for statistical testing, including:

1. The calculation and meaning sample statistics, especially variance and standard deviation.
2. The probability distributions of the relevant test statistics.

B. Student will be able to conduct, and interpret the results of, a variety of tests, demonstrating a solid understanding of the concepts of p-value and statistical significance. These include (may vary by semester)

1. F-test for comparison of variances.
2. Anova tests for differences in means of 3 or more populations and factorial analysis.
3. The sign test for dependent samples and population median.
4. χ^2 -tests for independence and goodness of fit.
5. Correlation significance test.

C. Analysis and prediction using correlation/regression will be especially emphasized. Regression tasks:

1. Compute and interpret the coefficient of correlation.
2. Estimate a linear (simple and multiple) regression equation.
3. Test for overall model and individual effects.
4. Interpret regression summary statistics, Anova output, predictor coefficients and significance.
5. Make predictions using the model.
6. Understand limitations of model. Evaluate implications of variable correlation for predictor significance.

► **Academic integrity** is fundamental to the process of learning and evaluating academic performance.

Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the UNO Judicial Code for further information. The Code is available online at <http://www.studentaffairs.uno.edu>.

► It is University policy to provide, on a flexible and individualized basis, **reasonable accommodation** to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to <http://www.ods.uno.edu>.