

## **Economics 2370 - Spring, 2000**

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                 by appointment or by chance  
                 (You can also email me with any questions.)  
URL:         <http://www.uh.edu/~odonnell/econ2370>

## **1 What this course will covered**

The course will include presentations of data through graphs and charts, frequency distributions, measures of central tendency and dispersion, probability and probability distributions, sampling plans and hypothesis testing of large and small samples.

## **2 Textbook, supplemental materials, etc.**

### **Textbook - required reading**

Mendenhall et al: *Introduction to Probability and Statistics* 10th edition.

**Material on the web page** The web page for this course will include

1. Syllabus and outline of the lectures (this document)
2. *Mathematica* notebooks (including a set of tutorial notebooks)
3. Grades
4. Links to sites with economic data

**Software** - the course uses software called *Mathematica*. It was developed to solve numeric, symbolic, statistical and algebraic problems. Its graphic capabilities are exceptional. For this class, we will learn how to use *Mathematica* for statistical problems. You will apply this knowledge to solve problems in two computer projects.

*Mathematica* will also be used in the econometric course so the skills that you will obtain in this course will be used there.

Ways of obtaining/accessing the software

1. I will distribute the software in class for those students who are registered for this class and wish to install the software on their home computers. This is a full blown version of the software that works under Windows 95/98. The full installation takes 155 Megs of space, you can also save space by running the software from the CD. The software (available on a CD) costs \$4.00. This is a special version of the software that is designed to run for a limited time (about one year). After this time period, registered U of H students can renew the software for \$4.00. (Students who have Macs can obtain Mathematica for Macs through the Office of Information Technology (basement of the library) for \$4.00.).
2. You can access Mathematica through the Social Work Lab. You will need to obtain a Social Sciences NT account. The lab has weekend and evening hours.
3. You can purchase the package from the University bookstore. This version of the software is designed not to expire. The last time I checked, this version of the software costs \$150.00 (**If you purchase it at the University Bookstore, you cannot return it**).

If you have a computer at home (and you do not wish to install Mathematica on it), you can view *Mathematica* notebooks (files created in *Mathematica*) using a free software package called *Mathreader*. The program works as a stand-alone package and with your web browser as a plug-in. To obtain this package, use your web browser to go to the following URL.

<http://www.wolfram.com/products/mathreader/>

The notebooks for this class will be located on the web page - from the home page, click on link "Mathematica Notebooks".

**Calculator** There are no special requirements. Any calculator that can perform basic functions will be sufficient.

*A complete reliance on a statistical calculator will lose you precious points towards your grade. I expect to see exam problems fully worked out, the steps needed to get to the solution should be on the paper. You should expect to get no points if you only provide me with the solution, (even if this solution is correct).*

**Internet access** Course will be as paperless as possible.

Grade will be posted on the web page by the last four numbers of a student's id. University policy requires that I receive your permission before posting your grades. I have set up a small survey page on the web page. Here you can pass along your email address and your decision regarding the posting your grades. Please fill out this form as soon as possible.

### 3 Grading, Syllabus & Optional Problems

**Grading** The grade will be based on 2 computer projects (5% each) 2 midterm exams (25% each) and a final exam (40%). Exams are closed book, closed notes.

During the semester, I will conduct unannounced, in-class quizzes. Points earned from these quizzes are extra credit points. I plan to use optional problems and old exam questions for a portion of these quizzes. If I use one of these problems for an in-class quiz and you have done the work prior to the lecture, you can submit this work (at the start of the quiz) instead of doing the in-class quiz.

I have included a list of optional problems. To motivate you to work on these problems, each test will include questions from this set.

**Syllabus** <sup>1</sup>

| <b>Week</b> | <b>Dates</b> | <b>Chapters</b> | <b>Exams, Projects, Dates of Interest</b>                              |
|-------------|--------------|-----------------|--|
| 1           | 1-17 to 1-21 | 1               |  |
| 2           | 1-24 to 1-28 | 2               |  |
| 3           | 1-31 to 2-04 | 3, 4            |  |
| 4           | 2-07 to 2-11 | 4               | 2-11 Exam 1  |
| 5           | 2-14 to 2-18 | 4,5             | 2-15 last day to drop without receiving a grade<br>2-18 Project #1 due |
| 6           | 2-21 to 2-25 | 5               |  |
| 7           | 2-28 to 3-03 | 6               |  |
| 8           | 3-06 to 3-10 | 7               |  |
| 9           | 3-13 to 3-17 | Spring Break    |  |
| 10          | 3-20 to 3-24 | 7,8             | 3-24 Exam 2  |
| 11          | 3-27 to 3-31 | 8               |  |
| 12          | 4-03 to 4-07 | 9               | 4-06 Last day to drop.   |
| 13          | 4-10 to 4-14 | 9               |  |
| 14          | 4-17 to 4-21 | 10              |  |
| 15/16       | 4-24 to 5-01 | 10              | 5-01 Project # 2 due   |
| Final       |              |                 | Final exam   |

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<sup>1</sup>You can skip the section, "About Minitab" in every chapter, section 4.7 in Chapter 4, section 5.4 in Chapter 5, 7.7 in Chapter 7 and sections 10.6 through 10.8 in Chapter 10.

## Suggested Problems <sup>2</sup>

| Chapter | Problems  |
|---------|---|
| 1       | 1.8, 1.10, 1.13, 1.14, 1.15, 1.17, 1.24, 1.25, 1.29, 1.41   |
| 2       | 2.2, 2.3, 2.4, 2.6, 2.8, 2.11, 2.14, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 2.23, 2.24, 2.29, 2.30, 2.40, 2.41(a), 2.49, 2.53, 2.55, 2.58                  |
| 3       | 3.6, 3.7, 3.9, 3.10, 3.12, 3.15, 3.17, 3.20   |
| 4       | 4.1, 4.5, 4.9, 4.15, 4.17, 4.21, 4.22, 4.26, 4.30, 4.31, 4.34, 4.35, 4.37, 4.40, 4.41, 4.43, 4.49, 4.54, 4.55, 4.63, 4.76, 4.78, 4.81, 4.85, 4.92, 4.95 |
| 5       | 5.3, 5.4, 5.5, 5.17, 5.19, 5.25, 5.28, 5.30, 5.33, 5.35, 5.36, 5.37, 5.48, 5.65, 5.66, 5.67   |
| 6       | 6.1, 6.2, 6.4, 6.9, 6.17, 6.18, 6.20, 6.25, 6.27, 6.30, 6.32, 6.33, 6.34, 6.44, 6.48, 6.50, 6.54, 6.59, 6.60, 6.67, 6.70, 6.76                          |
| 7       | 7.16, 7.17, 7.19, 7.24, 7.28, 7.33, 7.34, 7.37, 7.56  |
| 8       | 8.2, 8.5, 8.6, 8.7, 8.8, 8.15, 8.20, 8.32, 8.35, 8.36, 8.41, 8.44, 8.47, 8.52, 8.55, 8.57, 8.61, 8.64, 8.67   |
| 9       | 9.4, 9.5, 9.6, 9.9, 9.10, 9.14, 9.17, 9.18, 9.20(a), 9.27, 9.31, 9.33, 9.37, 9.38, 9.40, 9.48, 9.50(a), 9.57(a) 9.62                                    |
| 10      | 10.1, 10.2, 10.6, 10.10, 10.14(a), 10.16(a), 10.18, 10.19, 10.20, 10.28, 10.29, 10.30, 10.35, 10.37(a), 10.43, 10.70, 10.75, 10.78, 10.88               |

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<sup>2</sup>Note: Problems listed in the book with blue numbers have answers in the back of the book. Hypothesis test questions in Chapters 9 and 10 should make use of p-values as the testing method. Details regarding this will be discussed when Chapter 9 is introduced.