

Economics 205.011
Statistics for Business and Economics I
Spring 2005

TOWSON UNIVERSITY

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COURSE SYLLABUS

PURPOSE: The most important things about economics aren't quantifiable, but a lot of interesting things are, and statistics is the science that helps you to cope with them. If you're seeking an answer to a particular question, what kind of data would it be helpful to collect? Maybe something identical or similar has already been collected and published, but how do you best use it? What does it mean? You have to know how to describe or present it to others in a form that tells the truth, how to analyze and interpret it, and how to draw conclusions from it that you and others can trust. The accurate description of factual data is *descriptive* statistics, and we'll do a fair amount of that (you don't want to be among those who "lie with statistics"), but the focus of the course is *inferential* statistics (or *statistical inference*), in which we learn how to infer trustworthy conclusions without knowing all the facts.

REQUIRED TEXTBOOKS: McClave, Benson, and Sincich, *A First Course in Business Statistics*, 8th edition
Huff, Darrell, *How to Lie With Statistics* (W. W. Norton, 1993; or latest edition)

CALCULATING... This is a course in ideas, not instruction in how to use particular electronic calculators or software packages. Knowledge of these things is useful, and in the job market you'll be asked about your spreadsheet skills. We'll work with these programs a bit, but plan to pick up your primary spreadsheet skills somewhere else. (It's not difficult, and you don't need a college course for it.) Only simple calculators, without statistical functions, may be used on our exams; if you don't have one, they're available almost everywhere—even grocery stores—for less than \$10.

ATTENDANCE: You may take one unexcused absence, in this once-a-week class, without penalty, but each over one will reduce your "class participation and attendance" grade (see below) by 5 points, and it can become negative. An unexcused absence will be assigned to any student who fails to observe our class's "house rules" (see below).

EXAMS AND GRADING: There will be three in-class exams, on:

Friday, February 18
Friday, April 1
Friday, April 29

Your semester grade will be computed as follows: Three one-hour exams 22% each, Final exam 29%, Class participation/attendance 5%. Only approved "simple" calculators (no financial or statistical functions) are permitted at the exams. Scratch your name on yours, or use tape; maybe we'll shuffle them around.

MAKE-UP EXAMS require a good excuse. They will be given on the last day of classes, in another room.

HOUSE RULES: No eating or drinking, or wearing of hats, is appropriate in the classroom without medical or religious reason (bring a note from your medical doctor or spiritual leader). No electronic communication devices (including, but not limited to, cell phones, pagers, and cameras) are to be used in class. The computer terminals are for our use in this course **ONLY**; they are **NOT** to be used for Internet surfing or e-mailing. Violations will initially be handled as unexcused absences.

GEN ED CREDIT: Economics 205 satisfies the Category I.C (College Mathematics) General Education Requirement.
KSAs: Achievement of the following College of Business and Economics "Knowledge, Skills, and Attitudes" will be assessed in this course: "Show common sense" (2g).

REPEATING this course? "Students may **not** make a third attempt of a course except with *prior* approval." For details, see the Undergraduate Catalog, 2004-5, p. 26, or your own year's Undergraduate Catalog.

CHEATING on examinations will be dealt with as harshly as the University permits, including (but not necessarily limited to) an automatic F in this course.

YOU KNOW WHEN YOUR FINAL IS. DON'T SCHEDULE FLIGHTS HOME BEFORE IT!

LECTURE TOPICS AND READING ASSIGNMENTS

The end-of-section EXERCISES assigned below do not require the use of spreadsheet software. As the course proceeds, we will work on some of the exercises for which data sets are provided on the textbook's CD, using either Microsoft's Excel or Sun's OpenOffice/StarOffice Calc as our software. None of these exercises will be collected, but you may be asked to discuss them in class. As you'll see from the assigned exercises, we'll focus pretty heavily on the MBS book's "Learning the Mechanics" exercises.

DATE	READINGS AND TOPICS TO BE COVERED IN CLASS
28 jan	Statistics... What is it (and what are they)? An introduction to descriptive statistics: how properly to describe a set of data, including graphical presentations and measures of central tendency and variability.
	Assigned reading: <i>First Course</i> , Chapter 1 (pp. 1-23, but omit the optional section 1.4) and Chapter 2, sections 2.1 through 2.5, inclusive (pp. 25-70)
	Exercises: 1.15, 1.16, 1.19; 2.1, 2.2, 2.5; 2.12, 2.13, 2.14; 2.26, 2.27; 2.30, 2.31, 2.33; 2.44, 2.45, 2.47
	*** THURSDAY, February 3, is the last day to add, or to drop with NO GRADE. ***
04 feb	More descriptive statistics (concluding Chapter 2); and an introduction to the key concepts of probability.
	Assigned reading: <i>First Course</i> , Chapter 2 (sections 2.6, 2.7, and 2.11 only: pp. 70-84 and 100-115); Chapter 3 (sections 1, 2, and 3: pp. 117-134);
	Exercises: 2.68 – 2.72; 3.1 – 3.5, 3.7, 3.9... and 3.14 if you're really brave!
11 feb	Wrapping up probability, and beginning a closer look at deceptive presentations of statistics (building on Chapter 2's last section) with Darrell Huff's <i>How to Lie...</i> ; also, some time for review of what we've done in these three weeks in preparation for our exam next week.
	Assigned reading: <i>First Course</i> , Chapter 3 (sections 4-7, pp. 135-165); <i>How to Lie...</i> Chapters 1-5 (pp. 1-65 of this little, easy-reading, paperback).
	Exercises: Chapter 3: 16 – 20, 23, 32 – 37, 47, 48, 63, 67, 69
18 feb	EXAM #1: <i>First Course</i> Chapters 1–3 (except omitted sections), and <i>How to Lie...</i> Chapters 1–5
25 feb	Finishing up our lesson in lying; then, on to probability distributions and random variables
	Assigned reading: <i>First Course</i> , Chapter 4 (sections 1-3; pp. 167-194); <i>How to Lie...</i> Chapters 6-10 (end of book)
	Exercises: Chapter 4: 11 – 14, 19, 25 – 29, 33
04 mar	Continuing with probability distributions and random variables
	Assigned reading: <i>First Course</i> , Chapter 4 (sections 5-8; pp. 201-225)
	Exercises: Chapter 4: 50 – 53, 61 – 66, 69, 76 – 78
11 mar	Some further uses of the normal distribution; an introduction to confidence intervals
	Assigned reading: <i>First Course</i> , Chapter 4 (sections 11-12; pp. 236-257) and Chapter 5 (sections 5.1 and 5.2; pp. 259-279).
	Exercises: Chapter 4: 105, 107, 108, 111 – 115, 117, 125 – 127, 130, 132, 134; Chapter 5: 1 – 5, 12 – 15
18 mar	Concluding our introduction to interval estimation, and some review of these past two chapters...
	Assigned reading: <i>First Course</i> , Chapter 5 (sections 5.3 and 5.4; pp. 279-297).
	Exercises: Chapter 5: 24 – 27, 29, 35 – 39, 45

DATE	READINGS AND TOPICS TO BE COVERED IN CLASS
25 mar	SPRING BREAK
01 apr	EXAM #2: <i>First Course</i> , Chapters 4 and 5 (except omitted sections)
	***WEDNESDAY, April 6: last day to WITHDRAW with W or change to/from PASS/FAIL or AUDIT.**
08 apr	An introduction to the testing of hypotheses Assigned reading: <i>First Course</i> , Chapter 6 (sections 6.1-6.3; pp. 299-319). Exercises: Chapter 6: 1 – 4, 9, 15 – 19, 28 – 33, 37
15 apr	Testing, testing... hypotheses, that is... and how to compare populations' means Assigned reading: <i>First Course</i> , Chapter 6 (sections 6.4 and 6.5 only; pp. 319-332 and 338-343), Chapter 7 (sections 7.1-7.3 ; pp. 345-377 only) Exercises: Chapter 6: 41 – 44, 46, 53 – 56, 59, 73 – 77, 80
22 apr	Review, catchup, maybe a little playing with spreadsheets...
29 apr	EXAM #3; <i>First Course</i> , Chapters 6 and 7 (except our omitted optional sections)
06 may	Simple linear regression Assigned reading: <i>First Course</i> , Chapter 9 (Sections 9.1 – 9.7 only) Exercises: Chapter 9: 1 – 6, 10 – 12, 22 – 24, 31 – 34, 44 – 47
13 may	FINAL EXAM, 12:30-2:30 PM