

Summer 2009

Statistics II (Eco 2200)

Syllabus

INSTRUCTOR: L.T. McRae

OFFICE: Raley Hall 3106

HOURS: M – Th 9:30 – 10:00 am; M – W 3:00 – 4:00 pm; and by appointment.

TEXT: David P. Doane & Lori E. Seward, *Applied Statistics in Business and Economics, 2nd Edition*

Goals and Objectives: In a business curriculum, the principal objective of the study of statistics is to equip students to understand the data and statistical techniques on which modern business decision making often rests. Students who have completed Statistics II should be able to correctly interpret the results of simple inferential statistics such as confidence intervals and hypothesis testing, including tests for differences between two or more populations; they should also understand the concept of mathematical modeling and be able to understand and interpret the results of regression models.

Learning Outcomes: In compliance with AACSB procedures, the following core learning outcomes **will** be assessed for this course:

Upon completion of this course, the student will be able to:

1. Determine the appropriate hypotheses, perform the test, and interpret the results for one and more than one population mean.
2. Determine the appropriate hypotheses, perform the test, and interpret the results for one and more than one population proportion.
3. Determine the appropriate hypotheses, perform the test, and interpret the results for two population variances.
4. Determine the appropriate hypotheses, perform the test, and interpret the results for the independence of two variables.
5. Calculate a simple correlation coefficient, interpret it, and perform a hypothesis test for its validity.
6. Construct a simple/multiple regression model, estimate it, interpret it, use it for estimation, and perform hypothesis tests for its validity.
7. Use a computer spreadsheet to perform common statistical functions.

EXAMS: There will be three exams of one-hour length during the term on the dates indicated in the Outline and covering the material indicated there. A fourth exam will be given on the last day of the term, covering the material indicated in the Course Outline. All exams will be multiple choice.

TO REACH ME: Except for unusual circumstances, I keep my office hours. Students with questions may visit or call me during that time or send me an e-mail. During my office hours I will make a conscientious effort to answer all course-related communications. In addition, I will usually answer course-related e-mails received during business hours (9:00 am to 5:00 pm Monday to Friday), although the responses may not be altogether timely. Announcements, homework assignments, etc. will be posted on my website, and students who miss class for whatever reason should check

that site.

e-mail me at: MCRAELT@APPSTATE.EDU

my website URL: <http://www1.appstate.edu/~mcraelt/>

COMPUTING: Students enrolled in this course will need access to a personal computer and an electronic spreadsheet. Both the class lectures and homework will be organized in terms of Excel statistical functions and procedures. This software is available in all the computer labs on the ASU campus.

For parts of the course, a pocket calculator may prove useful. I recommend the Casio fx series, which retail for around \$10.

NOTE: Students may NOT use the calculator function of cellular telephones during exams in this course.

SPECIAL DESIGNATORS: ECO2200 carries Numerical Data (ND) and Computer (C) designators in the Core Curriculum.

HOMEWORK AND CLASS PARTICIPATION: **Education is not a spectator sport.** If you want to do well in this class, you must be actively engaged with the material, both in class and out. In class, when you are given the opportunity to work a sample problem, you should take that opportunity. Out of class, you should read the text and work problems. Working problems helps you to understand relationships and to cement your understanding in your own mind; it is virtually impossible to master the material of this course without working problems in an open and interactive spirit. Students *should* at minimum work all the odd-numbered problems in the Doane & Seward text. Students who are having difficulty in the course will find it helpful to work additional problems as well. I will of course provide answers on request and will, within reason, help students who come to my office and who have clearly made a serious effort already to work the problems.

The Excel spreadsheet is referred to throughout this course as a computational tool. To grasp these Excel procedures, you must **use** Excel. Thus, if you wish to be able to respond to exam questions about Excel, it is extremely important that you solve homework problems using Excel.

Unfortunately, my resources of time and energy are limited, as are yours. **Doing** homework is **very** important, but 1) writing up homework to be handed in is time consuming and adds little to student understanding of the material, 2) it is difficult to grade homework and return it to students in a sufficiently timely fashion to be useful and 3) using homework to help determine grades poses serious questions of moral hazard. For all these reasons, I will not attempt to assign extensive written homework, although I will suggest some problems for each textbook section and may assign some written homework as an alternative to holding regular classes. Working problems is your responsibility, and I expect you to exercise that responsibility in an adult fashion. My responsibility is to answer questions and provide help when you have difficulty, but please note that I cannot read minds – I can only respond to explicit questions.

GRADING: Each of the four exams will count 25% of your final grade. If you wish to think of it that way, there is a total of 400 points possible in this course.

With all scores expressed on a hundred-point scale, numerical scores will be converted to letter grades as follows:

Letter	Points
A:	320 – 400
B:	280 – 319.99
C:	240 – 279.99
D:	200 – 239.99
F:	under 200

Please note that I very seldom give +/- grades.

ATTENDANCE POLICY: *Daily attendance:* Class attendance is a good thing and is one of the few controllable variables that has a significant impact on student grades in this course. You should miss class only rarely and only for genuinely pressing circumstances. Since you are adults, I expect you to recognize these facts and to behave responsibly. As a piece of advice, if you have some other commitment – work, family, another course, whatever – such that you contemplate missing class more than two times during the term, ***you should drop this course now.***

Attendance at exams: Exams pose more than an ordinary temptation to miss class and more than ordinary scope for moral hazard. Therefore, if a student misses an exam, the absence may or may not be excused. In the event of an excused absence, a make-up exam may be scheduled at my convenience, or I may choose to load that exam's weight on the other exams in the course. In the event of an unexcused absence, the student will receive a zero for the exam missed. Absences from exams will be excused only on account of the student's illness, the serious illness or death of a near relative, or the student's need to be somewhere else on business connected with the university or its classes and activities. Absences from exams will NOT be excused for car trouble, inclement weather, etc. While I try to be sensitive to emotional distress, I must insist that a student present documentation of the reason for any absence from an exam if the student desires to have that absence excused.

From time to time during the term, assignments and hand-outs may be distributed during a class period without previous announcement. Such materials or information will be given out only once; they will not be available in my office, by telephone, nor in subsequent class periods. Students who fail to receive an assignment or handout because of absence from class should get these materials from a classmate or download them from my website, and I grant blanket permission to copy or photocopy any such material.

COURTESY: Students who expect to be treated with courtesy in the classroom should themselves treat their instructor and classmates with courtesy. In recent years, there appears to be an increasing discordance about what constitutes courtesy. Therefore, note the following rules, based on my expectations, which pertain to my classroom and should pertain to any classroom:

- Do **not** simply get up and walk out of the classroom while the class is still going on. This is unbelievably rude behavior; I regard this, as do most university faculty, as a personal insult. You may of course have to leave for a physical emergency, in which case you can apologize later. If you know before class that you must be elsewhere before the class ends, speak to the instructor before class and when you leave, do so as quietly and unobtrusively as possible.
- Do **not** continue talking with your neighbor after the instructor has begun his lecture. Such behavior is discourteous not only to the instructor but also to your classmates. A similar rule pertains for any other noisy or disruptive behavior.
- Do **not** eat in class.
- Do **not** bring the book for your next class and study for a test during my class. Most especially, do **not** read a newspaper during my class.
- Turn off all cell telephones, beepers, and alarms before class begins. If you have a desperate emergency that may require your receiving a call during class, speak to me before class begins but understand that my concept of “desperate emergency” may be different from yours. I will consider laptop computers on a case-by-case basis, but in general I see little reason to have them in this class.
- **Any student observed text messaging during class will be asked to leave class.**
- **Cell ‘phone calculator functions may NOT be used during exams in this course.**
- **You may NOT listen to an MP3 or other music player during this class and most especially not during exams.**
- In general, before you do it, think about how an action or remark is likely to be received. Remember that ignorance is no excuse for bad manners and note that you are under no compulsion to come to this class. If you do come, I expect you to be alert and engaged in the class and its activities.

Finally, note that faculty members have the right to bar students from their classroom if they deem those students' behavior to be disruptive to the learning environment.

- COURSE OUTLINE:**
- I. Introduction to Excel Statistical Functions; Sampling Distributions [Review Topic]; Interval Estimation [Review Topic]; Hypothesis Tests for One Population. Doane & Seward: Chapter 8 [Review]; Chapter 9.
 - ▶ First Exam: Tuesday, June 2
 - II. Two-Sample Hypothesis Tests; One-Way Analysis of Variance; χ^2 Tests for Independence; D&S: Chapters 10, 11 (to page 466), 15 (to page 671).
 - ▶ Second Exam: Wednesday, June 10
 - III. χ^2 Goodness-of-fit Tests; Simple Regression. D&S: Chapters 15 (from page 671) & 12.
 - ▶ Third Exam: Thursday, June 18
 - IV. Multiple Regression; Time Series and Forecasting. D&S: Chapters 13 & 14. These topics will be covered on the fourth exam. While emphasizing these last topics, the fourth exam may include any topic covered in the course.
 - ▶ Fourth Exam: Thursday, June 25

MANDATORY STATEMENTS:

- The University's Academic Integrity Policy can be found at <http://studentconduct.appstate.edu/>.
- According to Ms. Maranda Maxey in the Office of Disability Services, Appalachian State University is committed to making reasonable accommodations for individuals with documented qualifying disabilities in accordance with the Americans with Disabilities Act of 1990, and Section 504 of the Rehabilitation Act of 1973. Those seeking accommodations based on a substantially limiting disability must contact and register with The Office of Disability Services (ODS) at www.ods.appstate.edu <<http://www.ods.appstate.edu>> <<http://www.ods.appstate.edu>> or 828-262-3056. Once registration is complete, individuals will meet with ODS staff to discuss eligibility and appropriate accommodations.