INSTRUCTOR: L.T. McRae                                           OFFICE: Raley Hall 3106

HOURS: MTWR 1 – 2 pm; MTW 5 – 6 pm; and by appointment.


TO REACH ME: Except for unusual circumstances, I keep my office hours. Students with questions may visit me during that time or send me an e-mail. During my office hours I will answer all reasonable communications, and I will make an effort to respond to e-mails received during normal business hours, 9 am to 5 pm Monday to Friday, although Friday is problematic.

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/

PREREQUISITES: The prerequisite for this course is MAT 1020 or MAT 1030 or the equivalent. If you have not met the course prerequisites for this course, you are subject to being dropped even if you were able to register for the class initially.

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 this course should be able to interpret descriptive statistics, should understand probability theory well enough to avoid doing some really stupid things, should recognize appropriate sampling techniques, and should be able to understand the results of simple inferential statistics such as confidence intervals and hypothesis testing. The introductory course also provides a necessary foundation for further study in many areas of business.

A secondary objective of the course is to help students understand the nature and pitfalls of the statistical studies on which government policy is sometimes based, so that as adults they can more effectively participate in American democracy.

This course carries a Numerical Data special designator in the Core Curriculum.

A statement of the formal learning objectives for this course, as required by AACSB, is:

Upon completion of this course, the student will be able to:
1. Organize, present, and analyze numerical data using frequency distributions and graphical presentations.
2. Calculate and interpret the measures of central tendency for either raw or grouped data.
3. Calculate and interpret the measures of dispersion for a data set.
4. Calculate joint, marginal, and conditional probabilities.
5. Describe common probability distributions, apply these distributions, and calculate probabilities using these distributions.
6. Describe probability sampling and calculate probabilities in a sampling distribution.
7. Calculate point estimates and confidence interval estimates for a mean and a proportion.
8. Apply and perform a hypothesis test for one population mean.

**EXAMS:** There will be two exams during the term on the dates indicated in the Outline and covering the material indicated there. There will also be a comprehensive Final Exam. All exams will be multiple choice.

**HOMEWORK:** Students should work all the odd-numbered problems in the Doane & Seward text; the answers to most of these are in the back of the book. Students who are having difficulty with particular blocks of material will find it helpful to work the even-numbered problems in that section as well. For even-numbered problems, 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.

To be a bit more concrete, for each class day I will assign a few problems from the text. I consider working these few problems and getting them all right to be the very minimum examination preparation needed by an excellent student. Students whose mathematical skills are less than excellent should obviously do more to prepare for exams. While working problems is not the only sort of studying you should do in this course, failure to work a number of problems as homework will almost guarantee failure in the course.

Homework assignments will be posted on my web site. In some cases, where the textbook seems particularly inadequate, supplementary problems may be assigned and will be linked to the homework page on my web site.

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 collect homework. Working these 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. Finally, note that some of these assigned problems will appear as exam questions, although with changed numbers.
**GRADING:** Each exam during the term will count 30% of your final grade, and the Final Examination will count 40% of your final grade. Thus your course average is given by the expression \( CA = 0.3 \times \text{first exam} + 0.3 \times \text{second exam} + 0.4 \times \text{Final Exam} \), with the exam scores expressed as percentages correct. Or, if you prefer to think of it that way, you have a total of 500 possible points with each hourly exam worth 150 points and the Final worth 200 points.

The scale for converting number to letter grades is:

<table>
<thead>
<tr>
<th>Letter</th>
<th>Percentage</th>
<th>Total Points</th>
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</thead>
<tbody>
<tr>
<td>A:</td>
<td>80 – 100 %</td>
<td>400 – 500</td>
</tr>
<tr>
<td>B:</td>
<td>70 – 79.99</td>
<td>350 – 399</td>
</tr>
<tr>
<td>C:</td>
<td>60 – 69.99</td>
<td>300 – 349</td>
</tr>
<tr>
<td>D:</td>
<td>50 – 59.99</td>
<td>250 – 299</td>
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<tr>
<td>F:</td>
<td>under 50.00</td>
<td>under 250</td>
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This is an absolute scale; any student who asks me whether I will “curve” grades will automatically have ten points deducted from his or her term total.

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

**ABSENCES:** At my option, each student will be assigned a seat in class, and I will check for the student’s presence at some time during each class meeting. Students who are not in their assigned seats when I check the roll will be counted as “absent” for that meeting. Each student is allowed three absences during the term; after the third absence, I will deduct 25 points (one-half letter grade) from his or her course total for each subsequent absence *for whatever reason the absence occurs*. My advice to any student who has any problem – health, work, athletic team, attitude, whatever – which makes it impossible to come to class regularly is that he or she should withdraw from this course. Also, please note that according to university policy, if you expect to miss 10% or more of the class meetings (three meetings or more) because of “participation in a university sponsored activity,” you are required to schedule an appointment with me immediately to discuss your situation.

If a student misses an exam, the absence may or may not be excused. In the event of an excused absence, a make-up will be administered at my convenience. 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: 1) the student’s illness, 2) an illness, death, or other serious emergency in the student’s immediate family, or 3) the student’s need to be elsewhere on business connected with the university or its classes and activities. (Field trips for other classes do not necessarily count: if you want to miss an exam for such an activity, ask. I may say “No.”) Absences from exams will NOT be excused for car trouble, inclement weather, family trips, conflicts with the student’s job, etc. While I try to be sensitive to emotional distress, I reserve the right to require documentation of the reason for any absence the student desires to have 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.

**COMPUTING:** Buy a calculator. Bring it to every class meeting. **NOTE: You may not use the calculator function of a cellular telephone in this course.** I generally discourage students from the ubiquitous TI-83 or any similar calculator. I would recommend a calculator from the Casio *fx* series. As long as it’s an *fx* and labeled a “scientific calculator,” the cheaper the better. These calculators are available at Staples, Walmart, etc. for $10 or less. I am willing to spend time showing a student how to use these calculators; I am not willing to spend my time trying to explain the use of the unnecessarily complex TI-83.

**COURTESY:** A class is for learning, and that entails a certain amount of courtesy. In recent years, there appears to be increasing discordance about what constitutes courtesy. The following rules will 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. 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 as possible.
- Do not continue talking after the instructor has begun his lecture. Such behavior is discourteous not only to the instructor but also to your classmates, and similarly 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 and **PUT THEM AWAY**. 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 and will be counted “absent” for that class meeting.** Similarly, any student detected playing games on a cell ‘phone or engaging in other activity not related to the class will be asked to leave class and will be counted absent for that class meeting.
- **Cell ‘phone calculator functions may NOT be used 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, and remember that ignorance is no excuse for bad manners.

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: Note: Exam dates are approximate. If there is a change, the exact date will be announced in class at least one day prior to the exam.

I. Populations and Distributions; Descriptive Statistics; Probability and Discrete Probability Distributions: Doane & Seward: Chapter 1 (read for yourself; skip Section 1.6, pp. 10 – 15); Chapters 4, 5 & 6. ▶ Exam: Tuesday, February 17 or Wednesday, February 18.

II. Continuous Probability Distributions; Sampling; Sampling Distributions; Interval Estimation: D&S: Chapters 7, 2 & 8. ▶ Exam: Tuesday, March 31 or Wednesday, April 1.

III. Hypothesis Testing; Arranging Data; Graphical Data Presentation: D&S: Chapters 9 & 3.
▶ These topics will be covered on the Final Examination. The Final Exam is a comprehensive examination, covering everything in the course.
▶ The Final Examination will be held in our normal meeting room with the following schedule:

<table>
<thead>
<tr>
<th>Section Meeting Time</th>
<th>Examination Date and Time</th>
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<tbody>
<tr>
<td>MW 2 pm</td>
<td>Monday, May 4, at 9 am</td>
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<tr>
<td>MW 3:30 pm</td>
<td>Tuesday, May 5, at 9 am</td>
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<tr>
<td>TR 2 pm</td>
<td>Tuesday, May 5, at noon</td>
</tr>
<tr>
<td>TR 3:30 pm</td>
<td>Wednesday, May 6, at noon</td>
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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> or 828-262-3056. Once registration is complete, individuals will meet with ODS staff to discuss eligibility and appropriate accommodations.