

MATH 1342 Elementary Statistics
Session: Spring 2012

Synonym and Section: 1342.013 (46878) Time: MW 9:00 – 10:20 a.m. Classroom: NRG 2245	Office Hours: MW 8:25 – 8:55 a.m. MW 10:25 – 11:00 a.m. MW 1:00 – 1:25 p.m. MW 1:00 – 1:25 p.m. TTh 10:10 – 10:50 am
Instructor: Dr. Mary Parker Office Number: NRG 2147 Office Phone: 223-4846 (fax 223-4641) Email: mparker@austincc.edu	Web: www.austincc.edu/mparker/1342/ and http://courses.bfwpub.com/bps5e.php (StatsPortal) http://acconline.austincc.edu/ (Blackboard Discussion Board)

Analyzing data in a statistics course is a different experience than working problems in most math courses. Our course materials have many examples and many problems to work through in order to clarify the concepts in your mind. One of the most effective ways to learn the material well is to explain it to someone else. As are most college courses, the course is designed to require about 2 to 3 hours of productive work outside of class for every hour in class. So you should plan to spend about 6-9 hours of productive work on the course outside of class each week. One of my responsibilities is to provide you with enough structure and guidance that you can use those 6-9 hours each week productively.

I hope that you find the particular mix of activities I assign to be helpful. If you want more guidance, or have comments about how you think I should change these, I'd be happy to talk with you in my office, but not in class. (It is helpful to most students to use class time to discuss statistics, not the course policies!) I want to help you learn the material in the course and not waste your time.

Read on through the handout to find the description of the activities and the grading policy. I will give lists of assigned homework week by week in separate documents, posted in Blackboard.

Course Description: A first course in statistics for students in business; nursing; allied health; or the social, physical, or behavioral sciences; or for any student requiring knowledge of the fundamental procedures for data organization and analysis. Topics include frequency distributions, graphing, measures of location and variation, the binomial and normal distributions, z-scores, t-test, chi-square test, F-test, hypothesis testing, analysis of variance, regression, and correlation. Prerequisites: A satisfactory score on the ACC Mathematics Assessment Test. A second option is an appropriate secondary school course (Algebra II) and completion of any TSI-mandated mathematics remediation. () Course Type: T

Note: Texas State University recently changed their Transfer Guide to show that MATH 1342 is no longer considered equivalent to their QMST 2333 (Quantitative Methods). ACC's BUSG 2371 is the correct equivalent to that course, which is needed for most majors in business.

Statement of Prerequisite Requirements: Students who have passed the THEA math or COMPASS math to be eligible for college-level courses have satisfied the math prerequisite requirement. Students should also have college-level reading skills. Students who are exempt from TSI requirements should have had two years of high school algebra to satisfy the prerequisite.

Students in MATH 1342 will be expected to:

1. understand material from the text after reading it.
2. do homework using fairly complicated formulas after seeing one example
3. do some, but not much, algebraic manipulation of formulas

Required Materials:

StatsPortal website to accompany *The Basic Practice of Statistics*, 5th ed., by David S. Moore (Access folder included with new books purchased through ACC bookstores. The cost from the publisher for StatsPortal access alone is \$80 in Jan. 2012.)

The actual physical textbook is optional, however most students find it convenient to have a physical book. For varying prices, you may get a looseleaf, paperback, or hardback book. Used books do not include the StatsPortal access, which is required.

StataPortal includes the text as an e-book with links to more detailed answers than our book, StatTutor, a Study Guide, the required *MINITAB Manual* to accompany our text, the CrunchIt software and other supplements, including videos, applets, and more. (See <http://www.austincc.edu/mparker/1342/tf/> for details.)

To sign up for StatsPortal at < <http://courses.bfwpub.com/bps5e.php> > you'll need

- The activation code in the StatsPortal folder or you can purchase access online.
- Your permanent email address (Can't change this in the StatsPortal account)
- Your instructor's name and your MATH 1342 synonym number

Required Technology: (More information – <http://www.austincc.edu/mparker/1342/tf/>)

1. Scientific calculator (You are not allowed to use a graphing calculator on the tests.)
2. Access to MINITAB computer software. For classroom sections, **you are not required to buy this.** Use it in the math labs, ICTS labs, and the Learning Labs. <http://irt.austincc.edu/CollegeComputers/> You can use the CrunchIt software in StatsPortal at home to explore data, so you should not need to rent or buy MINITAB.
3. Internet access. For the Discussion Board and to access the various supplements in StatsPortal.

Instructional Methodology: This course is taught in the classroom as a lecture/discussion course.

Course Rationale: Students will learn to

1. Determine the aspects of a question, if any, for which statistics can provide relevant information.
2. Analyze statistical studies, particularly regarding appropriate sampling and experimental design.
3. Select and use appropriate statistical analyses to get useful information from data.
4. Communicate knowledge using standard statistical language and also interpret it in non-technical language.

This course meets the Core Curriculum requirement in mathematics. It meets the requirement for an introductory statistics course for students in many majors such as business, health sciences, and social sciences.

Course Learning Outcomes:

Upon successful completion of this course, students will:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine, and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities.
4. Explain the role of probability in statistics.
5. Examine, analyze, and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

Learning Objectives:

1. Interpret ideas of population versus sample, random variables, and techniques of descriptive statistics including frequency distributions, histograms, stem and leaf plots, boxplots, and scatterplots.
2. Calculate and interpret measures of central tendency and dispersion, including mean, median, standard deviation, and quartiles.
3. Apply the 68-95-99.7 rule to normal distributions and use the normal tables to answer questions about the proportion of scores in a certain range or find various percentiles.
4. Analyze relationships between two quantitative variables using correlation and linear regression. Analyze residual plots and determine how to handle outliers and influential points.
5. Analyze data presented in two-way and three-way tables to provide information about relationships between categorical variables, including understanding and interpreting situations to which Simpson's Paradox applies.
6. Apply ideas of appropriate sampling techniques and experimental design to data production.
7. Use the basic ideas of probability and apply them to statistics.
8. Use the sampling distributions of sample proportions and sample means to answer appropriate questions.
9. Estimate single means, difference of two means, single proportions and difference of two proportions using confidence intervals. Interpret the results.
10. Demonstrate skills in hypothesis testing for means and proportions, for single populations and comparison of two populations.
11. Demonstrate skills in hypothesis testing using the chi-squared test to compare several proportions and to test independence.
12. Demonstrate skills in inference for regression or ANOVA techniques.

Throughout the course, students will learn to do almost all the calculations by hand with a scientific calculator on small data sets and also students will learn to use a substantial statistical computer software package to do the statistical calculations quickly and on larger data sets. Some of the regression inference analyses will not be done by hand.

Learning the material:

What to do at school.

1. Hear brief explanations of some concepts.
2. Participate in activities designed to introduce / reinforce concepts.
3. Take tests (mostly in Testing Center, but some in class)
4. Get to know other students and explain stat concepts
5. Turn in your work.

What to do at home.

1. Read the book and/or watch short video lectures in StatsPortal.
2. Answer questions and work problems to turn in (some by hand, some in StatsPortal)
3. Use the Blackboard Discussion Board to ask questions about homework problems and answer other student's questions about homework problems.
4. Use statistical software (CrunchIt) at home and at school (CrunchIt and Minitab) to make graphs and do statistical calculations quickly and easily.
5. Keep a record of work done and submit a summary of that work in class each Monday.

Graded work.

1. Some appropriate question or answer about a homework problem **in each** Chapter / Forum in the Blackboard Discussion Board. Deadline: Friday evening of the week in which the Chapter is to

be completed. The grade is based on completion, not on how good the questions or answers are. The instructor will also monitor and participate in the Discussion Board to be sure that the information provided is correct. Late work in the Discussion Board is not graded.

2. Journal report of informal homework done. Due each Monday at the beginning of class. Can be submitted by email – due by the end of the class period on Monday. Late reports earn no grade.
3. Weekly quiz problems each Wednesday at the beginning of class. Late work, up to a week late, earns half credit.
4. Formal homework for all chapters covered on a test, due during the class period on the day of the test deadline. Late work earns half credit.
5. Test. You must receive permission to earn any credit for a test taken late. Typically, it can be only one day late, and receives a 20% penalty.

Grading:

Percentage	
5%	Discussion Board
5%	Journal report each Monday
10%	Weekly quiz each Wednesday
10%	Formal Homework
14%	Test 1
14%	Test 2
14%	Test 3
14%	Test 4
14%	Test 5

A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: below 60

If you believe that I have made a mistake on grading anything, write a note of explanation on a separate sheet of paper, staple it to the paper, and turn it in for re-grading. I am happy to discuss this with you outside of class, but grades will never be changed or corrected “on the spot”. Such corrections must be made **very soon** after the paper was originally graded. **No grades will be corrected except through this procedure.**

Tests.

Several of the first four tests will be in the Testing Center at NRG and the last test will be in class on the last day of class. You may prepare some handwritten notes and use them on the test. These will not be comprehensive. Enough room is provided to enable you to write a few formulas or procedures that you are having trouble memorizing. Those notes **must be**

- **in your own handwriting**
- **turned in with the test**
- **originals, not copies, particularly not copies that are reduced**
- **include only words and formulas (Do NOT include worked-out examples.)**

For Test 1, you may take ONE sheet of paper for notes, front only.

For Test 2, you may take ONE sheet of paper for notes, front and back.

For Tests 3 and 4, you may take TWO sheets of paper for notes, front and back.

For Test 5, you may take THREE sheets of paper for notes, front and back.

The Testing Center Monitor will not necessarily tell you if your notes are in violation of the class rules. You are responsible. **If you violate any of the rules about notes, I will either give you a zero on that test or else deduct some points from your test grade,** depending on what I judge to be the severity of the violation.

Tests must be done entirely on your own, with no help from anyone else. Violating the rules of the testing center, or giving or receiving help on tests is scholastic dishonesty, and the punishments are severe.

In the Testing Center, you will need your ACC student ID and a picture ID, like your driver’s license, and you will need to know the instructor’s name, course number and section number. (I also teach a distance learning section of this course, which has different tests.) Also see the section of this handout on “Testing Center.”

Tests must be taken in one sitting – no leaving to go to the restroom or any other reason. If you are unable to take tests in one sitting, please tell the instructor at the beginning of the semester so that she can help you make arrangements for the accommodations you need. It will not be possible to make such accommodations if you wait until time for the test to ask.

For Tests 1 – 3, a student who misses a test or who makes below 60 on a test may come to me for additional make-up work. This will usually include taking another test. When that work is satisfactorily completed, the test grade will be raised to a 60. **Test grades of above 60 can only be earned by taking the regular test on time.** Such make-up work can be done on no more than two tests and some part of the make-up work must be turned in within a week of when the test is returned. (No makeup is provided for Test 4 because it is too late in the semester for makeup work to be completed.)

The lowest of the grades on Tests 1 – 3, if it is a 60 or higher, will be replaced by the Test 5 / Final Exam grade.

Deadlines for the tests will be enforced very strictly. When the test is in the testing center from Thursday through Wednesday, you are expected to take the test by Monday, and then there are a couple of extra days for you to take it late if you had car trouble or babysitter trouble, or some other difficulty getting in earlier.

Tentative Schedule. Any changed dates will be announced in Blackboard.

Week	dates	begin	end by Friday	Tests
1	Jan 17 - 20	8, 9, Data Ethics		
2	Jan 23 - 29	1, 2	8, 9, Data Ethics	
3	Jan 30 - Feb 3	Resampling	1, 2	
				Test 1 by Wed. Feb 8
4	Feb 6 - 10	3	Resampling	
5	Feb 13 - 17	10, 11	3, 10	
6	Feb 20 - 24	4, 5	11	
				Test 2 by Wed Feb 29
7	Feb 27 - Mar 2	5, 6	4	
8	Mar 5 - 9	7, 14	6, 7	
9	Mar 19 - 23	15, 16	5	
10	Mar 26 - 30	17	14, 15, 16	
				Test 3 by Wed Mar 28
11	Apr 2 - 6	17, 18	17	
12	Apr 9 - 13	19, 20, 21	17, 18	
13	Apr 16 - 20	22	19, 20, 21	
				Test 4 by noon Mon Apr 23
14	Apr 23 - 27	23	22	
15	Apr 30 - May 4	24	23	
16	May 7 - 9	none	24	Test 5 Wed. May 9

Attendance/Class Participation: Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. In this class, missing more than 10% of the class time over the semester is considered unsatisfactory. That is approximately four classes of a class which meets two days a week in the 16-week semester.

Withdrawal Policy: It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

This semester is **Spring 2012** and the **Final Withdrawal Date for this class is April 23, 2012.**
<http://www.austincc.edu/support/admissions/registrationcalendar.php>

Students who enroll for the third or subsequent time in a course taken since Fall 2002 may be charged a higher tuition rate for that course.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

Reinstatement Policy: In order to be re-instated in this class after a withdrawal, the student must be caught up with all the classwork, online and written homework, and be passing at the time of reinstatement. The deadline for reinstatement is the same as the deadline for a withdrawal.

Incomplete Grades: Incomplete grades will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must have taken all examinations, be passing, and after the last date to withdraw, have a personal tragedy occur which prevents course completion. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Statement on Scholastic Dishonesty: A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at <http://www.austincc.edu/current/needtoknow>

Student Rights and Responsibilities: Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Statement on Students with Disabilities: Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from OSD for this course must provide the instructor with the 'Notice of Approved Accommodations' from OSD before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the 'Notice of Approved Accommodations' from the student.

Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations. Additional information about the Office for Students with Disabilities is available at <http://www.austincc.edu/support/osd/>

Safety Statement: Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at <http://www.austincc.edu/ehs>. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at <http://www.austincc.edu/emergency/>.

You are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

Use of ACC email: All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at <http://www.austincc.edu/accmail/index.php>.

Testing Center Policy: Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

1. ACC Photo ID
2. Course Abbreviation (e.g. ENGL)
3. Course Number (e.g. 1301)
4. Course Synonym (e.g. 23456)
5. Course Section (e.g., 003)
6. Instructor's Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, **regardless of whether it is on or off**, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at <http://www.austincc.edu/testctr/>

Student and Instructional Services: ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: <http://www.austincc.edu/s4/>

Links to many student services and other information can be found at: <http://www.austincc.edu/current/>

ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: <http://www.austincc.edu/tutor/students/tutoring.php>

For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning

CLASS RULES:

1. In accordance with school policy, you may not bring food or drink into class.
2. You must turn off or mute volume on beepers and cellular phones BEFORE CLASS BEGINS so as not to disrupt class.
3. Arrive for class a few minutes early so that you can have your materials out and be ready to start class on time.
4. Disruptive behavior (talking to others while I am lecturing, rudeness, etc.) will not be tolerated.
5. Class discussion will focus on the material being presented and will be about matters relevant to the entire class. Discussion of your individual situation belongs in office hours or, occasionally, in the part of the class time that I have identified as devoted to working individually with students.
6. Children are not allowed to attend class with you.
7. Remember you are here to learn; be prepared to participate in class discussion. We are all unique individuals and in this class everyone's opinion will be respected whether we agree or disagree.
8. Counseling services are available to help you with a variety of needs, if you would like more information please ask.
9. I (the instructor) am available outside of class to provide help in a number of different ways (Discussion Board, office hours, by telephone and email.) Use that help immediately if you miss class or are falling behind for any reason.
10. If you miss class and/or the Discussion Board for half a week, you may get confused and frustrated. And it is difficult to catch up after getting behind much more than half a week. Don't let that happen – ask for help and get caught up right away if you miss something.
11. The final exam is given in class on the last day and there are no other times available.
12. If you enroll in the class late, you are subject to the same rules as students who enrolled in the class before the class began. The standard grading scheme allows enough flexibility for all students to make up a reasonable number of absences.