First-Day Handout for Students
MATH 1342 Elementary Statistics
Fall 2014 – Summer 2015

Synonym and Section:	Time:	Campus and Room:
Instructor:		
Office Number:	Office Hours:	
Office Phone:		
Email:	How to arrange other times by appointment:	

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. Skills: S Prerequisites: A satisfactory score on the ACC Mathematics Assessment Test. A second option is completion of any TSI-mandated mathematics remediation.

Note for prospective students in a business major at Texas State University. 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.

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
A prerequisite review sheet is available from this page: https://sites.google.com/a/austincc.edu/math-students/prereq-rev

Required Materials:
  - Access to the textbook: *The Basic Practice of Statistics*, 6ʰ ed., by David S. Moore
  - Videos: of demos/mini-lectures (StatClips); of examples (StatClips); statistics in the real world (SnapShots)
  - Statistical Applets, for students to explore the concepts.
  - StatTutor. Video tutorials for each chapter, in segments of about 2 minutes to 7 minutes.
  - Learning Curve. This is an adaptive study tool, by chapter, which helps to build your understanding of concepts through questioning. Wrong answers don't deduct points from your score; they just lead to suggestions for study and an additional question or two on that idea as you work toward the target score. And when you reach the target score, you have a perfect grade on this activity!
  - Student Study Guide, with expanded solutions (more than in the back of the book) for about one-quarter of the odd-numbered exercises.
  - Minitab Manual, with instructions and screenshots for Minitab 16 solving examples like those in our text, matching it chapter by chapter.
  - Pretests and Posttests for each chapter which you can use to guide your reading.
  - Crunch-It 2.0 software, which is similar to Minitab. Use it to do some statistical analyses at home.

Options for purchasing the required materials:
1. *StatsPortal* **alone** includes all these materials. It includes access to an electronic version of the book, which you can use **through their online portal**, and all the other required materials, which are in StatsPortal.
   Purchase **StatsPortal** directly from http://courses.bfwpub.com/bps6e.php which is less expensive than purchasing the access code from a bookstore.   And if you publish it at that link and there is a refund period. (Read from the link at the end of that web page)
    Purchase from the ACC bookstore (ISBN 9781464111815). No refunds from bookstores on software.
2. **Package including a folder with an access code for StatsPortal and a paper copy of the text** (with CD), hole-punched, so that you can put it in a binder.   ISBN 9781464111259.   No refunds from the bookstores on opened packages.
3. Separately purchase a book (with CD) and StatsPortal. Minimum cost: about $170 if you find a used book.
4. Separately purchase an electronic book and StatsPortal. Minimum cost: about $160.
5. Rent a book and purchase StatsPortal. Minimum cost: about $160.

Required Technology: (More information – http://www.austincc.edu/mparker/1342/tf)
1. Scientific calculator
2. Access to MINITAB computer software. **You are not required to buy/rent this**. Use it in the math labs, ICT labs, and the Learning Labs. http://irt.austincc.edu/CollegeComputers/
3. Internet access to use the material in *StatsPortal*. Internet access is provided in several computer labs at ACC.

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 Student Learning Outcomes (SLOs):
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.

The General Education Competency of
   1) Critical Thinking – gathering, analyzing, synthesizing, evaluating and applying information - is covered

in every SLO.
2) Quantitative and Empirical Reasoning – applying mathematical, logical, and scientific principles and methods - is covered in every SLO.
3) Technology Skills- using appropriate technology to retrieve, manage, analyze, and present information - is covered in SLOs # 2, 3, 5, 6, 7 and 8.
4) Written, Oral and Visual Communication – communicating effectively, adapting to purpose, structure, audience, and medium is covered in every SLO.

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.

Calendar and Testing Schedule: The instructor's calendar and Testing Schedule will be included.

Grading policy: The instructor's grading criteria will be clearly explained in the first-day handout. The criteria will specify the number of exams and other graded material (homework, assignments, projects, etc.).   Guidelines for other graded materials, such as homework or projects, should also be included in the syllabus. This must include an appropriate amount of work using MINITAB.   These guidelines must also specifically include:
- Missed exam policy
- Policy about late work
- Class participation expectations
- Reinstatement policy (if applicable)

Suggested statements: Read below and include the appropriate ones in your handout.
- **Course-specific support services:**
  - ACC main campuses have Learning Labs which offer free first-come first-serve tutoring in mathematics courses. Not all mathematics tutors can tutor statistics. Check the lab schedule to see when statistics tutors are available.   Students should bring their course handouts and notes when they come to the Learning Lab. The locations, contact information, and hours of availability of the Learning Labs are available from http://www.austincc.edu/tutor
  - **MATH 1342 Lab class**: If your campus is offering a section of MATH 0159, Elementary Statistics Lab, give specific information about that.
- **Attendance, Participation, and Withdrawal Policies**: Please read the general college policies on these, which you are required to include, and consider how to be clear in your communication with your students about what you consider unsatisfactory attendance or participation.
  Some teachers choose to say "Students who miss as much as 10% of the scheduled classes may be withdrawn."   The math department expects you to use include the word "may" so that students may not later complain that you had promised to withdraw them and did not.
- **Reinstatement Policy**: If the instructor chooses to allow reinstatements, he must include a statement about the circumstances under which is it allowed.   One possible statement is: "In order to be reinstated, the student must demonstrate that he is caught up with the required work as of the date on which he wishes to be reinstated.   This must be done before the official last date to withdraw for the semester."

Additional Details on Course Policies:
The general policies are included on the next few pages.   Instructors may provide additional details about these to clarify how they will be interpreted in this particular class.

Course Policies

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.

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 <u>before</u> the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.
     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.

Incompletes

An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. 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 Student Accessibility Services (SAS, formerly 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 SAS for this course must provide the instructor with the 'Notice of Approved Accommodations' from SAS 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 Student Accessibility Services 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/.

Please note, 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 dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

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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:

- **ACC Photo ID**
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g.,1301)
- Course Synonym (e.g., 10123)
- Course Section (e.g., 005)
- 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.autincc.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 Lab.

Suggested Calendars and Testing Schedules

Option 1 Calendar:

16-week semester	**11-week semester**	**6-week semester**
Week 1: 8, 9, Data Ethics	Week 1: 8, 9, Data Ethics	Week 1: 8, 9, Data Ethics, 1, 2, 3
Week 2: 1, 2	Week 2: 1, 2, 3,	Week 2: 3, 4, 5, 6, 7, 10
Week 3: 3, 4	Week 3: 4, 5	Week 3: 11, 14, 15, 16, 17
Week 4: 4, 5	Week 4: 6, 7, 10	Week 4: 18, 19, 20, 21, 22
Week 5: 5, 6	Week 5: 11, 14, 15	Week 5: 23, 24
Week 6: 7, 10	Week 6: 16, 17, 18	1/2 week: optional chap., Exam
Week 7: 10, 11	Week 7: 19, 20, 21	
Week 8: 14, 15	Week 8: 22, 23	
Week 9: 16, 17	Week 9: 24	
Week 10: 18, 19	Week 10: optional chapter	
Week 11: 19, 20	Week 11: Final Exam	
Week 12: 21, 22		
Week 13: 23		
Week 14: 24		
Week 15: optional chapter		
Week 16: Final Exam		

Suggested Testing Scheme

Test 1: 8, 9, 1, 2
Test 2: 3, 4, 5, 6, 7, as well as some review on 8, 9, 1, and 2
Test 3: through Chapter 17 (omitting Chs. 12 & 13)
Test 4: through Chapter 22
Test 5: through the end of the course

Option 2 Calendar:

16-week semester	**11-week semester**	**6-week semester**
Week 1: 1, 2	Week 1: 1, 2, 3	Week 1: 1, 2, 3, 4, 5
Week 2: 3, 4	Week 2: 3, 4, 5	Week 2: 5, 6, 7, 8, 9, Data Ethics, 10
Week 3: 4, 5	Week 3: 5, 6, 7	Week 3: 11, 14, 15, 16
Week 4: 5, 6	Week 4: 8, 9, Data Ethics, 10	Week 4: 17, 18, 19, 20, 21
Week 5: 7, 8	Week 5: 11, 14	Week 5: 22, 23
Week 6: 9, Data Ethics, 10	Week 6: 15, 16, 17	1/2 week: optional chap., Exam
Week 7: 10, 11	Week 7: 18, 19, 20	
Week 8: 14, 15	Week 8: 21, 22, 23	
Week 9: 16, 17	Week 9: 24	
Week 10: 18, 19	Week 10: optional chapter	
Week 11: 19, 20	Week 11: Final Exam	
Week 12: 21, 22		
Week 13: 23		
Week 14: 24		
Week 15: optional chapter		
Week 16: Final Exam		

Suggested Testing Scheme

Test 1: through Chapter 4
Test 2: through Chapter 9
Test 3: through Chapter 17 (omitting Chs. 12 & 13)
Test 4: through Chapter 22
Test 5: through the end of the course