

STP 226: Elements of Statistics

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Office Hours:	12:15-1:45 M, 1:30-3:00 T, 1:00-1:45 W and by appointment
Time:	TTh 10:30-11:45 \ TTh 12:00-1:15
Place:	UCENT 271 \ UCENT 207
SLN:	84212 \ 84214

Welcome to STP 226! This course is aimed at introducing you to the foundations of statistics and relating statistical practices to real world applications. We will cover basic concepts and methods of statistics, including descriptive statistics, sampling, confidence intervals, and hypothesis testing for various types of data. This course is open to students who have completed a math course at or above the level of college algebra (MAT 113, MAT 117, MAT 142) with a grade of C or better. This course also carries General Studies CS credit.

Tentative Schedule:

Week	Dates	Tuesday	Thursday
1	8/25-8/29	1.1 Statistics Basics 1.2 Simple Random Sampling	2.1 Variables & Data 2.2 Grouping Data 2.3 Graphs and Charts
2	9/1-9/5	2.4 Distribution Shapes 3.1 Measures of Center	3.2 Measures of Variation 3.3 The Five-Number Summary; Boxplots
3	9/8-9/12	Exam 1 Ch 1-3	5.1 Probability Basics 5.2 Events
4	9/15-9/19	5.3 Rules of Probability	3.4 Descriptive Measures for Populations 6.1 Normally Distributed Variables
5	9/22-9/26	6.2 Areas Under a Standard Normal 6.3 Normally Distributed Variables	6.4 Assessing Normality
6	9/29-10/3	7.1 Sampling Error and Distribution 7.2 Distribution of the Sample Mean	7.3 Sampling Distribution of Sample Mean
7	10/6-10/10	Exam 2 Ch 5-7	8.1 Estimating a Population Mean 8.2 Confidence Intervals, σ Known
8	10/13-10/17	8.3 Margin of Error	8.4 Confidence Intervals, σ Unknown
9	10/20-10/24	9.1 The Nature of Hypothesis Testing 9.2 Terms, Errors, Hypotheses	9.3 Hypothesis Tests, σ Known 9.4 p -values
10	10/27-10/31	9.5 Hypothesis Tests, σ Unknown	10.1 Sampling Distribution 10.3 Inferences for Two Population Means
11	11/3-11/7	10.4 Paired Samples	Exam 3 Ch 8-10
12	11/10-11/14	Veteran's Day - NO SCHOOL	11.1 Confidence Intervals, Proportions
13	11/17-11/21	11.2 Hypothesis Tests, Proportions 11.3 Inferences for Two Proportions	12.1 The χ^2 Distribution 12.2 χ^2 Goodness of Fit Test
14	11/24-11/28	12.3 Contingency Tables 12.4 χ^2 Test for Independence	Thanksgiving - NO SCHOOL
15	12/1-12/5	13.1 The F -Distribution 13.2 ANOVA	13.2 ANOVA
16	12/8-12/9	Review/Last Day	

Cell Phone Policy: I assume the responsibility of ensuring each of you is in a position to be successful in this class. Part of that responsibility is to ensure that all of us, collectively, are focused on the task at hand. Therefore, I request that your cell phone is turned off and put away while you are in this class, as its usage during class is disruptive and distracting to the learning environment, both individually and as a group.

Agreement of Terms: By remaining registered in the course through drop/add period, you agree to all terms and policies set forth in the syllabus.

Required Text: *Elementary Statistics*, 7th ed. by Weiss, Addison Wesley Publishing Company; ISBN 0-321-42209-0. It is expected that students read relevant sections before attending class.

Prerequisites: STP 226 students are expected to have completed a math course at or above the level of college algebra (MATT 113, MAT 117, MAT 142) with a grade of C or better.

Graphing Calculator: A calculator is required for this course. The recommended model is the TI-83. This is the model that most students use, but any scientific calculator will be adequate. I will be using the TI-83 for classroom demonstrations. Cellular phone calculators are not permitted in class or during an exam. Also, the sharing of calculators is not permitted during quizzes or exams.

Supplemental Instruction: Supplemental Instruction will be coordinated for this course in conjunction with the Student Success Center. Details of SI will be announced in class.

Exams: You will take 3 exams (in class) during the semester and one final exam according to the tentative dates listed below. Any changes will be announced at least one week in advance. Each exam will involve a mix of mechanical skills and conceptual reasoning. The best possible preparation for them is regular attendance and completion of assigned homework. No exam scores will be dropped.

Exam	Date	Chapters
1	Tuesday, September 9	1-3
2	Tuesday, October 7	5-7
3	Thursday, November 6	8-10
4	ASU Final Exam Schedule	11-13

Final Exam: The final exam will be given in our regular classroom as scheduled on the final exam scheduled located at: <http://students.asu.edu/node/318>. According to ASU policy, final exams can be rescheduled only under the following circumstances: (1) religious conflict, (2) the student has more than 3 exams scheduled on the same day, or (3) two finals are scheduled to occur at the same time. No final exams will be rescheduled for personal reasons or non-refundable airline tickets.

SLN 84212 (10:30)	Tuesday, December 16 9:50 - 11:40 AM
SLN 84214 (12:00)	Thursday, December 11 9:50 - 11:40 AM

Homework: In order to ensure all students stay on top of the material, homework will be graded regularly. Your homework will be submitted online at [WeBWorK](#). You are encouraged to work together on homework, but each individual student is required to submit his or her own work. It is highly recommended that the students work his or her WeBWorK problems on paper, and save these exercises as part of his or her notes. They come in handy when reviewing for an exam, or for obtaining help when the student has difficulty with the material. No late homework will be accepted, however, the approximate equivalent of one homework assignment will be dropped at the end of the semester. Some supplemental homework may also be collected throughout the semester as announced in class and posted on my website.

Semester Project: There will be one group project for the semester. The purpose of this project is to get you thinking about how statistical methods you have learned in class can be applied in a real world setting. This will be done collaboratively as to encourage the exchange of ideas. Details will be announced at a later date in class. This project will be due towards the end of the semester.

Make-Up Policy: Make-up exams are only given in the case of documented immediate family/medical emergencies. There are no exceptions to this policy. Please note that work emergencies do not constitute family/medical emergencies. Arrangements for any make-ups must be done within one week of the exam. There are no make-ups for quizzes or homework.

Attendance: All students are expected to come to class each day prepared to discuss assignments and material being presented in class. During class, any student can expect to be called upon to answer questions posed by the instructor and other students. Moreover, part of being prepared for class involves bringing all course materials to class, including your calculator. Statistics show that students who regularly come to class tend to do better than students who skip class every now and again. **Only three (3) unexcused absences will be allowed during the semester. The fourth absence is grounds for the student earning a grade of EN (failure due to lack of attendance) for the semester.**

How to Study: Students often ask me for advice on how to prepare for an exam. Be sure to look over the problems we covered in class, as well as the problems assigned for homework. Make sure you can work out these problems without the aid of your notes or textbook and check to make sure that your solution is correct. If you need assistance, please meet with me, use Success Express, or work with classmates for help. If you make a mistake, be sure you understand not only the correct way to do the problem, but why your method was wrong. If you understand the reasoning behind your actions, you are more likely to remember them and be successful. I often change or modify problems just enough to keep students from memorizing.

I highly recommend working in groups. Within your group, pick problems and present them to each other. Be sure you explain each step along the way, as if you were teaching a class. If you stumble over a step, you now know the concept on which you need to focus. If you can explain through an entire problem without any help or coaching, then you probably know the concept pretty well. This does take some extra time, but if you are determined and serious about doing well in the class, this is a great way to go about doing it.

Point Allocation:

Exams	55%
Final	20%
Homework	20%
Projects	5%

Grades:

Grade	x
A+	$98\% \leq x < 100\%$
A	$90\% \leq x < 98\%$
A-	$89.5\% \leq x < 90\%$
B+	$87\% \leq x < 89.5\%$
B	$80\% \leq x < 87\%$
B-	$79.5\% \leq x < 80\%$
C+	$77\% \leq x < 79.5\%$
C	$70\% \leq x < 77\%$
D	$60\% \leq x < 70\%$
E	$x < 60\%$

Additional Information:

- The highest standards of academic integrity are expected of all students at all times. The failure of any student to meet these standards may result in suspension or expulsion from the University or other sanctions as specified in the University Student Academic Integrity Policy. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism and/or facilitating such activities. We will act very harshly against any acts of academic dishonesty during quizzes or exams.
- Students with differing abilities should arrange to meet with me by the end of the first week of classes to arrange for reasonable accommodations for their learning needs. Students registered with DRS must notify the instructor at least one week prior to any exam.
- Arrangements for any religious observances, ASU sanctioned activity, or ASU student athlete obligations must be arranged with the instructor at least one week prior to the event.
- Classroom disturbances, including but not limited to: arriving late, talking in class, and cellular phones, are not tolerated. Each student is expected to show respect for every student registered in the course. Turn off any cellular phones and other electronic devices prior to entering class. Blatant cellular phone or other electronic device usage (i.e., text messaging) during class will result in the student being marked absent for the day. Recurring disturbances caused by an individual will result in an administrative withdrawal from the course. If you are an EMT, physician, firefighter, or serve in some other life-saving capacity that requires your mobile device to be on during class, please see me after class or in my office hours during the first week of the semester.
- No individual extra credit assignments will be offered.
- I reserve the right to make changes to this syllabus as necessary. Changes will be considered official if they are announced in class or placed on my web site.
- Welcome to the course! You should recognize that this is a 200-level course conducted at a steady pace with a workload appropriate for a 200-level university statistics course. Expect to spend at least 4-6 hours weekly during the semester for understanding the material, submitting homework sets, getting assistance, and completing written assignments. I encourage you to stay after class, visit Success Express, come to my office hours, or make an appointment with me to discuss any material that is unclear to you. I wish you well in the course and all of your other academic pursuits this semester.

Important Dates:

Last day to add/drop (in person)	August 29
Last day to add/drop (online)	August 31
Course withdrawal (in person)	October 31
Course withdrawal (online)	November 2
Complete withdrawal	December 9