

STP 226: Elements of Statistics Spring 2009 Course Syllabus

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Office: UCENT 360P	Office Hours: M 1:30-3:00pm, T 3:00-4:00pm, W 2:30-3:15pm, Th 12:15-1:15pm, or by appointment.
Instructor URL: http://www.public.asu.edu/~jboshes/	

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	January 19 – 23	Intro 1.1: Statistics Basics 1.2: Simple Random Sampling	2.1: Variables and Data 2.2: Grouping Data
2	January 26 – 30	2.3: Graphs and Charts 2.4: Distribution Shapes	3.1: Measures of Center 3.2: Measures of Variation 3.3: The Five-Number Summary; Boxplots
3	February 2 – 6	5.1: Probability Basics 5.2: Events 5.3: Some Rules of Probability	Exam 1
4	February 9 – 13	3.4: Descriptive Measures for Pop. 6.1: Normally Distributed Variables	6.2: Areas Under Normal Curve 6.3: Working with Normally Dist.
5	February 16 – 20	7.1: Sampling Distributions 7.2: Mean and St. Deviation of \bar{x}	7.3: Sampling Distribution of the Sample Mean
6	February 23 – 27	8.1: Estimating a Population Mean 8.2: Confidence Intervals for One Pop. Mean When σ is Known	8.3: Margin of Error
7	March 2 – 6	8.4: Confidence Intervals for One Pop. Mean When σ is Unknown	Exam 2
8	March 9 – 13	No Class <i>Spring Break</i>	No Class <i>Spring Break</i>
9	March 16 – 20	9.1: Nature of Hypothesis Testing 9.2: Terms, Errors, and Hypotheses	9.3: Hypothesis Tests - σ Known
10	March 23 – 27	9.4: P-Values	9.5: Hypothesis Tests - σ Unknown
11	March 30 – April 3	10.1: Sampling Distribution	10.3: Inferences for Two Pop Means
12	April 6 – 10	10.4: Using Paired Samples	Exam 3
13	April 13 – 17	11.1: Confidence Intervals for One Population Proportion 11.2: Hypothesis Tests for One Pop.	11.3: Inferences for Two Pop.
14	April 20 – 24	12.1: The Chi-Square Distribution 12.2: Chi-Square Goodness-Of-Fit	12.3: Contingency Tables; Assoc. 12.4: Chi-Square Independence Test
15	April 27 – May 1	13.1: The F-Distribution 13.2: One-Way ANOVA: The Logic	13.3: ANOVA: The Procedure
16	May 4 – May 8	Last Day of School/Review	Finals Week Begins

Cellular 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, Seventh Edition; by Weiss; Addison Wesley Publishing Company; ISBN 0-321-42209-0

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.

Student Success Center:

The Student Success Center, located on the first floor of University Center, will be open Monday-Thursday from 8am-6pm and on Friday from 8am-5pm. Be sure to go for help before it is too late and several days before an exam. Additional information for the Student Success Center can be found on their webpage at: <http://studentsuccess.asu.edu/downtown>.

Exams:

You will take 3 exams 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	Topics on Exam
Exam #1	Thursday, February 5, 2009	Chapters 1, 2, 3, 5
Exam #2	Thursday, March 5, 2009	Chapters 6, 7, 8
Exam #3	Thursday, April 9, 2009	Chapters 9, 10
Final Exam	See below.	Chapters 11, 12, 13

Final Exam:

The final exam will be given in our regular classroom as scheduled on the final exam scheduled located at: <http://www.asu.edu/registrar/registration/finals.html>. 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.

Class Number & Time	Date & Time of Final Exam
SLN 25868 (9:00am)	Thursday, May 7, 2009; 7:30-9:20am
SLN 20672 (10:30am)	Tuesday, May 12, 2009; 9:50-11:40am
SLN 25869 (1:30pm)	Tuesday, May 12, 2009; 12:10-2:00pm

WeBWorK:

Homework will be graded on a regular basis. Your homework will be submitted online at <http://webwork.asu.edu/>. You are encouraged to work together, 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.

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 in class on Tuesday, March 31, 2009. This project will be due on Thursday, April 30, 2009.

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.

Final Grade Breakdown:

Your final grade is determined as follows:

Component	Percentage
3 Mid-term Exams	55%
Final Exam	20%
WeBWorK Assignments / Misc.	20%
Semester Project	5%

Grade	$x = \text{Final Percentage}$
A+	$98\% \leq x \leq 100\%$
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. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, 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 DRC 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, completing assignments, submitting homework sets, and getting assistance. I encourage you to stay after class, attend Supplemental Instruction sessions, 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.

Key Semester Dates

Drop/Add Period:	January 20-23, 2009
Course Withdrawal: (In-person)	Friday, April 3, 2009
Course Withdrawal: (Online)	Sunday, April 5, 2009
Complete Withdrawal:	Tuesday, May 5, 2009

