STP 226: Elements of Statistics

Spring 2013 Course Syllabus

Instructor: Dr. Jenifer Boshes	**Office Hours:** Monday and Wednesday 1:00-2:00, Tuesday and Thursday 12:00-12:30 and by appointment
E-mail: jboshes@asu.edu	**Office:** UCENT 360P
Class Number: 15030	**Office Phone: 602-496-0572**

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	**Jan 7-Jan 11** *Classes begin Mon*	Introduction 1.1: Statistics Basics	1.2: Simple Random Sampling 1.3: Other Sampling Designs
2	**Jan 14-Jan 18**	2.1: Variables and Data 2.2: Organizing Qualitative Data 2.3: Organizing Quantitative Data	2.4: Distribution Shapes 3.1: Measures of Center 3.2: Measures of Variations
3	**Jan 21 – Jan 25** *MLK Mon Jan 21*	3.3: The Five-Number Summary; Boxplot	Chapter 5: Probability
4	**Jan 28 – Feb 1**	**Exam 1**	3.4: Descriptive Measures for Pop. 6.1: Normally Distributed Variables
5	**Feb 4 – Feb 8**	6.2: Areas Under Standard Normal Curve 6.3: Working with Normally Dist.	Chapter 7: The Sampling Distribution of the Sample Mean
6	**Feb 11- Feb 15**	8.1: Estimating a Population Mean 8.2: Confidence Intervals for One Pop. Mean When σ is Known	8.3: Margin of Error
7	**Feb 18 –Feb 22**	8.4: Confidence Intervals for One Pop. Mean When σ is Unknown	**Exam 2**
8	**Feb 25 – Mar 1**	9.1: Nature of Hypothesis Testing	9.2-9.4: Critical Values, *P*-Values and Hypothesis Testing for One Pop Mean σ Known
9	**Mar 4- Mar 8**	9.2-9.4: Critical Values, *P*-Values and Hypothesis Testing for One Pop Mean σ Known	9.5: Hypothesis Tests for One Pop Mean, σ Unknown
10	**Mar 11 – Mar 15** **Spring break**	**Spring Break**	
11	**Mar 18- Mar 22**	10.1: Sampling Distribution for the Differences in Two Pop Means 10.3: Inferences for Two Pop Means	10.4: Using Paired Samples
12	**Mar 25 – Mar 29**	Hypothesis Testing	**Exam 3**
13	**Apr 1- Apr 5**	11.1: Confidence Intervals for One Pop Prop 11.2: Hypothesis Tests for One Pop. Proportion	11.3: Inferences for Two Pop.
14	**Apr 8 – Apr 12**	12.1: The Chi-Square Distribution 12.2: Chi-Square Goodness-Of-Fit	12.3: Contingency Tables; Association 12.4: Chi-Square Independence Test
15	**Apr 15 – Apr 19**	Group Meeting	Chapter 4: Regression & Correlation
16	**Apr 22- Apr 26**	14.1: The Regression Model 14.4: Inferences in Correlation	Question Session/ Hypothesis Testing
17	**Apr 29 –Apr 30** **Last day of classes is Tues, Apr 30**	**Exam 4**	**Project Presentations During Final Exam Time**

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, 8th Edition (Custom Package); by Neil A. Weiss; Pearson Custom Publishing
Students are expected to read relevant sections of the textbook prior to attending class.

Calculator:
A graphing calculator is required for this course. The recommended model is the TI-84, but any graphical calculator that performs statistical hypothesis tests (such as the TI-83) will be sufficient. You are expected to bring your calculator to class daily. Cellular phone calculators are not permitted in class or during an exam. Also, the sharing of calculators is not permitted during exams.

Student Success Center:
The Student Success Center is located on the first floor of University Center. Be sure to go for help before it is too late and several days before an exam. Hours for when a STP 226 tutor is available at the Student Success Center can be found on their webpage at: http://studentsuccess.asu.edu/downtown. As of the first day of classes, hours TBD.

Exams:
You will take 4 exams during the semester 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	Tuesday, January 29th	Chapters 1-3, 5 Topics
Exam #2	Thursday, February 21st	Chapters 6-8 Topics
Exam #3	Thursday, March 28th	Chapters 9-10 Topics
Exam #4	Tuesday, April 30th	Chapters 11, 12, 14 Topics

Projects:
There will be one group project assigned during 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. Details for the project will be announced in class. There will be a group project presentation during the final exam period in our regular classroom, as scheduled on the final exam scheduled located at: http://www.asu.edu/registrar/registration/finals.html. Attendance during the project presentations is required!

Class Number & Time	Date & Time of Project Presentations
15030	Tuesday, May 7th 9:50-11:40AM

Homework/MyStatLab:
Homework will be graded on a regular basis. You are encouraged to work together, but each individual student is required to submit his or her own work. Most of your homework will be submitted online at http://www.coursecompass.com using MyStatLab, but some written homework assignments will be collected and graded to supplement MyStatLab. All written assignments must be turned in neat, organized, and stapled if there are multiple pages. If not, your written homework will not be graded. No late assignments will be collected if you miss class for any reason, however, the approximate equivalent of one homework assignment will be dropped at the end of the semester. Written homework assignments are considered late if they are turned in after the instructor has collected them at the beginning of class. For the MyStatLab problems, it is highly recommended that you work the problems on paper, and save these exercises as part of your notes. They come in handy when reviewing for an exam or for obtaining help if you have difficulty with the material. The MyMathLab course ID will be announced in class.

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.

Final Grade Breakdown:

Your final grade is determined as follows:

Component	Percentage
4 Exams	70%
Homework / Participation / Misc.	20%
Project	10%

Grade	x = 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:

- Turn off any cellular phones prior to entering class. Blatant cellular phone usage (i.e., text messaging) during class is not tolerated and will negatively affect the student's participation grade for the semester.
- Classroom disturbances, including but not limited to: arriving late, leaving early, leaving during the middle of class, talking during lecture, and cellular phones, are not tolerated. Each student is expected to show respect for every student registered in the course. Recurring disturbances caused by an individual will result in an administrative withdrawal from the course.
- 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 disabilities should arrange to meet with me as soon as possible 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.
- 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 posted on Blackboard.
- 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. I encourage you to stay after class, visit the Student Success Center, 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 Deadline (Online):	Sunday, January 13th, 2013
Course Withdrawal (Online):	Sunday, March 31st, 2013
Complete Withdrawal:	Tuesday, April 30th, 2013