STP 226: Elements of Statistics

Spring 2010 Course Syllabus

Instructor: Dr. Jenifer Boshes	**Class Number: 12864 (2:00); 12865 (3:30); 20375 (9:00); 21237 (10:30); 22687 (1:30)**
E-mail : jboshes@asu.edu	**Office Phone: (602) 496-0572**
Office : UCENT 360P	**Office Hours: Mon 12:30-1:30; TTh 12:15-1:15; Wed 11:00 – 12:00 and by appointment**

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		
1	January 18 – 22 *1/18 – Martin Luther King, Jr. Day Observed*	Intro 1.1: Statistics Basics 1.2: Simple Random Sampling	Discussion on Sampling 2.1: Variables and Data 2.2: Grouping Data
2	January 25 – 29	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 1 – 5	5.1: Probability Basics 5.2: Events 5.3: Some Rules of Probability	**Exam 1 – Chapters 1, 2, 3, and 5**
4	February 8 – 12	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 15 – 19	7.1: Sampling Distributions 7.2: Mean and St. Deviation of $\bar{x}$	7.3: Sampling Distribution of the Sample Mean
6	February 22 – 26	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 1 – 5	8.4: Confidence Intervals for One Pop. Mean When σ is Unknown	**Exam 2 – Chapters 6, 7, and 8**
8	March 8 – 12	9.1: Nature of Hypothesis Testing 9.2: Terms, Errors, and Hypotheses	9.3: Hypothesis Tests - σ Known
9	March 15 – 19	**Happy Spring Break!**	
10	March 22 – 26	9.4: *P*-Values	9.5: Hypothesis Tests - σ Unknown
11	March 29 – April 2	10.1: Sampling Distribution 10.3: Inferences for Two Pop Means	10.4: Using Paired Samples
12	April 5 – 9	Hypothesis Testing	**Exam 3 – Chapters 9 and 10**
13	April 12 – 16	11.1: Confidence Intervals for One Population Proportion 11.2: Hypothesis Tests for One Pop.	11.3: Inferences for Two Pop
14	April 19 – 23	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 26 – 30	13.1: The *F*-Distribution 13.2: One-Way ANOVA: The Logic	13.3: ANOVA: The Procedure
16	May 3 – 4	Last Day of Class/Review	

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* (Custom Package); by Weiss; Pearson Custom Publishing; ISBN 0-558-32634-X

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.

Blackboard:
All homework assignments, class handouts, review sheets etc., will be posted on the Blackboard site for this class. You can access blackboard by going to **My ASU** and clicking on this class. Check the Blackboard site regularly for updates and announcements.

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-3pm. 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	Week of February 1	Chapters 1-5 Topics
Exam #2	Week of March 1	Chapters 6-8 Topics
Exam #3	Week of April 5	Chapters 9-10 Topics
Final Exam	See below.	Chapters 11-13 Topics

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 12864 (MW 2:00)	Monday, May 10, 2010; 12:10 – 2:00pm
SLN 12865 (MW 3:30)	Wednesday, May 12, 2010; 12:10 – 2:00pm
SLN 20375 (TTh 9:00)	Thursday, May 6, 2010; 7:30 – 9:20am
SLN 21237 (TTh 10:30)	Tuesday, May 11, 2010; 9:50 – 11:40am
SLN 22687 (TTh 1:30)	Tuesday, May 11, 2010; 12:10 – 2:00pm

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.

Projects:
There are two individual mini-projects and one group project for the semester. The purpose of these projects is to get you thinking about how statistical methods you have learned in class can be applied in a real world setting. Details will be announced in class.

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. 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:
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 see that your solution is correct. If you need assistance, please meet with me, visit the Student Success Center, or work with classmates for help. If you make a mistake, be sure you understand not only the correct solution, 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 modify problems just enough to keep students from memorizing.

I highly recommend working in groups. Within your group, present problems 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:

Component	Percentage
4 Exams	70%
Homework Assignments / Participation / Misc.	20%
Projects	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 and other electronic devices 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 in class, 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 who feel they will need disability accommodations in this class but have not registered with the Disability Resource Center (DRC) should contact DRC immediately. Their office is located on the first floor of the University Center Building, Suite 160. 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 Period:	January 19 – 24, 2010
Course Withdrawal: (In-person)	Friday, April 9, 2010
Course Withdrawal: (Online)	Sunday, April 11, 2010
Complete Withdrawal:	Tuesday, May 4, 2010