Elementary Statistics
Math 119
Spring, 2014

Monday/Wednesday/Friday   4 units
8:35 a.m. – 9:50a.m.   Code 20143
Room 2728

Monday/Wednesda/Friday   4 units
10:00 a.m. – 11:15 a.m. Code 20144
Room 2728

Instructor: Mrs. Riehle   *Phone:*   1-760-355-6521   *Email*: betsy.riehle@imperial.edu
*Office***:**   Rm. 2761

Office hours: <u>Monday & Wednesday</u>   11:30 a.m. – 12:30 p.m.
                <u>Tuesday & Thursday</u>   10:15 a.m. - 11:15a.m.

Office by Appointment times are also available

Prerequisite: Math 90 with a grade of "C" or better

Course Description:
Graphical representation of statistical data, calculations and uses of various averages, measures of variability, introduction to probability distributions, confidence intervals, sample size determination, hypothesis testing, ANOVA, Chi-square, and regression analysis. Use of technology will be given throughout the semester.

Student Learning Outcome: By the end of the semester students will be able to:
- Identify, compare, and contrast two articles that include both descriptive and inferential statistics on the same research topic.
- Apply their knowledge of basic descriptive statistics
- Apply knowledge of statistical inferences to conduct formal significance tests concerning single populations
- Apply techniques of linear modeling to explore the relationship between two numerical variables

Course Objectives:
Through various activities and assessments:
1. The student will distinguish the various ways of organizing, displaying, and measuring data.
2. The student will derive the numerical relationship that exists between bivariate data sets.
3. The student will demonstrate an understanding of the theory of probability and proficiency in solving problems of this nature.
4. The student will compute and interpret expected values and variance, and learn about the binomial distribution for discrete random variables.
5. The student will compute and interpret expected values and variance, and learn about the normal distribution for continuous random variables.
6. The student will examine the joint probability structure of two or more random variables and understand the limiting behavior of the sum of independent random variables as the number of the sample becomes larger.
7. The student will use the various types of distributions that are derived from the normal distribution.
8. The student will calculate and interpret confidence intervals for a population mean to show how probability connects to this type of statistical inference.
9. The student will use hypothesis testing as a formal means of distinguishing between probability distributions on the basis of random variables generated from one of the distributions.
10. The student will compare the means of the data from experiments involving more than two samples, including the single factor analysis of variance (ANOVA).
11. The student will fit a straight line to the given data in graphical form.
12. The student will make use of Chi-square distributions to analyze counts.

Text: *Essentials of Statistics* 4*th* edition (soft bound)
   Author: Mario Triola

   Math XL Access Code (this may be purchased with the text or separately)

Materials: Scientific Calculator capable of statistical calculations –
   A Texas Instrument TI-30X IIS is recommended
   (instructions for using this calculator will be given)

    1 inch ring binder notebook and dividers

Grading: The semester grade will be based on an accumulation of points:

Exams - 50 points each	90% - 100% A
(4 tests will be given during the semester see schedule for dates)	80% - 89% B
	70% - 79% C
Homework – 100 points (Math XL percentage)	60% - 69% D
	0% - 59% F

   Technology Activity – 100 total points
   (There will be 6-7 Tec. Activities – points will vary)

   Project - 50 points

   SLO Assessment - 20 points

   Notebook - 30 points   (graded 3 times @ 10 points each)

   Final Exam - 100 points
   (Wednesday, May 14, comprehensive)

Grade Record

You can always know your grade if you keep a record: add all your points and divide by the total points possible as of that time. This will give you a percentage of your points. Use the scale above to translate into a letter grade.

Test 1 _____   Project   _____   Tec. 1 _____   Tec. 5 _____

Test 2 _____   SLO Assessment _____   Tec. 2 _____   Tec. 6 _____

Test 3 _____   Homework _____   Tec. 3 _____   Tec. 7 _____

                        Tec. 4 _____   Final Exam _____

Notebook _____, _____, _____
       (10)   (10)   (10)

Comments:

1. Attendance is required   (3 absences are allowed, 3 tardies equal 1 absence)
   Leaving class early will be counted as an absence unless cleared with instructor in advance.

2. **If you leave the classroom for any reason during a test, you will not be allowed to continue working on the test.**

3. **Homework (MathXL) can be accessed online. You will need access to a computer. You may use the computers in the Math Lab. Check for new assignments after every class meeting.**
   Every assignment has a due date . Make sure you know the due date.

4. No Make-Up Tests will be given!! If you miss a test your score will be recorded as a zero.
   (Possibility of rescheduling test with at least one class meeting advanced notice)

5. No Food or Drinks consumed in the classroom (campus rule)
   (water bottles are o.k. if you keep the cap secure)

6. Cell Phones must be turned off while in the classroom
   This rule will be strictly enforced during tests!!!

   Electrical outlets in the classroom **may not** be used for charging.
   Cell phones may not be used as your calculator during tests.

7. Any Student creating a disturbance or disrupting class may be dropped. (be respectful of other students . . . do not use disrespectful or offensive language)

8. Tutoring is available in the Math Lab or Learning Center (Library)

9. Any evidence of cheating will result in a failing grade!!

10. The last day to drop with a grade of **"W"** is **April 11, 2014.**

11. Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible:

    DSP&S: Room 2117
                          Health Science Building

                          1-760-355 – 6312

*Accessing Blackboard***:** http://www.imperial.blackboard.com
 Use the first part of your IVC Email Address in the username field.
 For the password field use your WebSTAR/Student Portal PIN.

Elementary Statistics
Math 119
Schedule, Spring, 2014 **

Text: Essentials of Statistics 4th edition   Instructor: Mrs. Riehle
     Mario Triola

Week	Dates	Content	Reading/Homework Assignment
1	January 20	Holiday/No Class	
	January 22	Introduction to Statistics	Sec. 1-1 and 1-2
	January 24	Types of Data & Critical Thinking,	Sec. 1-3 and 1-4
		Collecting Sample Data	Sec 1-5
2	January 27	Summarizing and Graphing Data	Sec. 2-1 and 2-2,
	January 29	Histograms	Sec. 2-3,
	January 31	Other Statistical Graphs	Sec. 2-4 and 2-5
3	February 3	Measures of Center	Sec. 3-1 and 3-2
	February 5	Measure of Variation	Sec. 3-3
	February 7	Measures of Relative Standing	Sec. 3-4
4	February 10	Boxplots	Sec 3-4
	February 12	**Test – Chapters 1 , 2 , 3	
	February 14 ♡	Holiday-Lincoln's Birthday/No Class	
5	February 17	Holiday-President's Day/No Class	
	February 19	Intro to Probability/"And" Rule	Sec. 4-1, 4-2, and 4-3
	February 21	**Lab Activity (Location Pending)	
	February 24	"Or" Rule, Conditional, Complement	Sec. 4-4 and 4-5
	February 26	Counting Methods	Sec. 4-6
	February 28	Discrete Probability Distributions	Sec. 5-1 and 5-2
7	March 3	Binomial Probability Distributions	Sec. 5-3
	March 5	Statistics of Binomial Distributions	Sec. 5-4
	March 7	**Test – Chapters 4 and 5	
8	March 10	Normal Probability Distributions	Sec. 6-1 and 6-2
	March 12	Application of Normal Distribution	Sec. 6-3
	March 14	**Lab Activity (Location Pending)	
9	March 17	Sample Estimators/Central Limit Theorem	Sec. 6-4 and 6-5
	March 19	Confidence Intervals & **Project**	Sec. Sec 7-1
	March 21	Confidence Interval for a Proportion	Sec. 7-2
10	March 24	Confidence Interval for a Mean (T-Distribution)	Sec. 7-3 and 7-4
	March 26	Confidence Intervals Variance (Chi Square Dis.)	Sec. 7-5
	March 28	Estimating Sample Size	Sec. 7-2 thru 7-5
11	March 31	Introduction to Hypothesis Testing	Sec. 8-1 and 8-2
	April 2	**Test – Chapters 6 and 7	
	April 4	Testing a Proportion	Sec. 8-3

Week	Dates	Content	Reading/Homework Assignment
12	April 7 April 9 April 11	Testing a Mean (σ Known) Testing a Mean (σ Unknown) Testing a Variance **Project Due !!!**	Sec. 8-4 Sec. 8-5 Sec. 8-6
13	April 14 April 16 April 18	Pooled Data Inference of Two Proportions ***Test Chapters 8 and 9**	Sec. 9-1 Sec. 9-2
	April 21-26	**Spring Break/No Class**	
14	April 28 April 30 May 2	Correlation and Bivariate Data Regression Technology and Regression	Sec. 10-1, 10-2 Sec 10-3
15	May 5 May 7 May 9	Goodness of Fit **SLO Quiz** (regression) ANOVA/Analysis of Variance	Sec. 11-1 and 11-2 Sec. 11-3 and 11-4
16	May12 May 14	Review **Final Exam** (vocabulary, symbols, short calculations, use of calculator and technology)	**Chapters 1-11**

*Test Dates may change with notification

** I reserve the right to change this schedule with due notice to students