Elementary Statistics
Math 119
Fall, 2013

Monday/Wednesday/Friday   4 units
8:35 a.m. – 9:50a.m.   Code 10658
Room 2728

Monday/Wednesda/Friday   4 units
10:00 a.m. – 11:15 a.m. Code 10659
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: <u>Essentials of Statistics</u> 4th edition (soft bound)
             Author: Mario Triola

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

Materials: Scientific Calculator – **A Texas Instrument TI-30X IIS is recommended**

             1 inch ring binder notebook and dividers

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

             Homework – 100 points   (Math XL percentage)

             Exams - 100 points each   90% - 100%   A
             (4 tests will be given during the semester see schedule for dates)   80% - 89%   B
                                                         70% - 79%   C
             Technology Activity – 100 total points   60% - 69%   D
             (There will be 6-7 Tec. Activities – points will vary)   0% - 59%   F

             Project - 50 points

             SLO Assessment - 20 points

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

             Final Exam - 150 points
             (Wednesday, Dec. 5, 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 _____, _____, _____

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!!!

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 **November 9, 2013.**

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

Elementary Statistics
Math 119
Schedule, Fall, 2013 **

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

Mario Triola

Week	Dates	Content	Reading/Homework Assignment
1	August 19	Introduction to Statistics	Sec. 1-1 and 1-2
	August 21	Types of Data & Critical Thinking	Sec. 1-3 and 1-4
	August 23	Collecting Sample Data	Sec 1-5
2	August 26	Summarizing and Graphing Data	Sec. 2-1 and 2-2,
	August 28	Histograms	Sec. 2-3,
	August 30	Other Statistical Graphs	Sec. 2-4 and 2-5
3	September 2	**Holiday/No Class (Labor Day)**	
	September 4	Measures of Center	Sec. 3-1 and 3-2
	September 6	Measure of Variation	Sec. 3-3
4	September 9	Measures of Relative Standing	Sec. 3-4
	September 11	Boxplots	Sec 3-4
	September 13	***Test – Chapters 1 , 2 , 3**	
5	September 16	Intro to Probability/"And" Rule	Sec. 4-1, 4-2, and 4-3
	September 18	"Or" Rule, Conditional, Complement	Sec. 4-4 and 4-5
	September 20	***Lab Activity** (Location Pending)	
	September 23	Counting Methods	Sec. 4-6
	September 25	Discrete Probability Distributions	Sec. 5-1 and 5-2
	September 27	Binomial Probability Distributions	Sec. 5-3
7	September 30	Statistics of Binomial Distributions	Sec. 5-4
	October 2	Normal Probability Distributions	Sec. 6-1 and 6-2
	October 4	***Test – Chapters 4 and 5**	
8	October 7	Application of Normal Distribution	Sec. 6-3
	October 9	Sample Estimators/Central Limit Theorem	Sec. 6-4 and 6-5
	October 11	***Lab Activity** (Location Pending)	
9	October 14	Confidence Intervals & **Project**	Sec. Sec 7-1
	October 16	Confidence Interval for a Proportion	Sec. 7-2
	October 18	Confidence Interval for a Mean (T-Distribution)	Sec. 7-3 and 7-4
10	October 21	Confidence Intervals Variance (Chi Square Dis.)	Sec. 7-5
	October 23	Estimating Sample Size	Sec. 7-2 thru 7-5
	October 25	***Test – Chapters 6 and 7**	
11	October 28	Introduction to Hypothesis Testing	Sec. 8-1 and 8-2
	October 30	Testing a Proportion	Sec. 8-3
	November 1	Testing a Mean (σ Known)	Sec. 8-4
12	November 4	Testing a Mean (σ Unknown)	Sec. 8-5
	November 6	Testing a Variance	Sec. 8-6
	November 8	Pooled Data / **Project Due !!!**	Sec. 9-1
13	November 11	**Holiday/No Class Veteran's Day**	
	November 13	Inference of Two Proportions	Sec. 9-2
	November 15	***Test Chapters 8 and 9**	

Week	Dates	Content	Reading/Homework Assignment
14	November 18 November 20 November 22	Correlation and Bivariate Data Regression **SLO Activity**	Sec. 10-1, 10-2 Sec 10-3
15	November 25 November 27 November 29	Goodness of Fit ANOVA/Analysis of Variance **Holiday/No Class Thanksgiving**	Sec. 11-1 and 11-2 Sec. 11-3 and 11-4
16	December 2 December 4	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