Imperial Valley College
SCIENCE, MATH, AND ENGINEERING DIVISION
MATH 119
ELEMENTARY STATISTICS
Fall 2013
CRN: 10664 and 10665

Class Location/Dates/Times:

This is an online course. The only meetings are the midterm and final as noted below...
Midterm: Monday 10/14/2013 from 6pm to 8pm in Room 2734
Final: Monday 12/02/2013 from 6pm to 8pm in Room 2734

Credit Hours: 4 Lec
Instructor: Mr. Allyn Leon
Office: 2760.2
Office Phone: (760) 355-6523
Email: allyn.leon@imperial.edu
Website: https://imperial.blackboard.com/
Office Hours:

Monday/Tuesday/Friday from 1:30 pm to 2:30 pm
Thursday from 10:00 am to 11:00 am

Prerequisites: MATH 090 with a grade of "C" or higher, or appropriate placement.
Recommended Preparation: ENGL 101 or ENGL 111.

***** Final exam is on Monday, December 2, 2013*****
*****Last day to Add the class is Saturday, August 31, 2013*****
***** Last day to withdraw from the class with a "W" is Saturday, November 9, 2013 *****

REQUIRED TEXTBOOKS AND ELECTRONIC RESOURCES

Textbook: Collaborative Statistics by Illowsky and Dean, Connexions Web site.
This is an open source FREE textbook. You will have three options for the textbook.

Option 1: Purchase the textbook through the IVC bookstore.
Option 2: View the book online at the Connxions Web site.
http://cnx.org/content/col10522/1.40/
Option 3: Download the textbook in pdf from Blackboard.

Calculator: A basic calculator, like a TI-30 (costs around $10) is recommended, or you can go with a graphing calculator, like the TI-83 or TI-84; it really depends on what other math or science classes you plan on taking later on.

COURSE DESCRIPTION

Graphical representation of statistical data, calculations, and uses of various averages, measures of variability, introduction to probability, probability distributions, confidence intervals, sample size determination and hypothesis testing, ANOVA, linear regression and Chi-square analysis. Students will learn to use technology to find confidence intervals, test statistics, regression lines, and to produce graphics. This course also provides supervised practice in the appropriate use of technology designed to assist students in calculations required in beginning statistics. (CSU, UC)

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.

STUDENT LEARNING OUTCOMES

By the end of this course, you will be able to (1) identify, compare, and contrast two articles that include both descriptive and inferential statistics on the same research topic, (2) demonstrate your knowledge of basic descriptive statistics, (3) apply your knowledge of statistical inference to conduct formal significance tests concerning single populations, and (4) apply techniques of linear modeling to explore the relationship between two numerical variables.

COURSE COMPONENTS

HOMEWORK

- There will be ***practice exercises*** assigned from every section that we cover. A list of practice exercises will be included for each week (see the Weekly Assignments folder in Blackboard). A master list will also be available. These are not to turn in, but for practice.

QUIZZES

- There will be fifteen (15) short quizzes given throughout the semester, to be taken online through Blackboard. These will be accessible through the Weekly Assignments folder. Quizzes have no official due date, and will remain open throughout the semester, but... if you have not completed a quiz by the end of the week that it is assigned, don't be surprised if it counts against you until you complete it!

TESTS

- There will be two (2) tests during the semester. Test 1 is the midterm and Test 2 is the final. The tests will be worth 250 points each. These tests are in person (see the first page of this document for dates/times).
- **There will be no make-up exams**. If you miss the midterm, it will be recorded as a zero, and **the final exam percentage** will be used to replace that score at the end of the semester. If you miss the final, it will be recorded as a zero.

TECH ACTIVITIES

- There will be a series of five (5) activities in which we use Minitab, Excel, Fathom, or a combination of technology resources to go through statistical computations. These activities will be carried out in groups of 3-4 students, and work will be summarized in the wiki tool within Blackboard (there will be instructions on how to do this). Each activity will be worth 40 points.

GRADING POLICY

Your grade will be comprised of the following items:

15 Quizzes @ 20 points each	300 points	~30%
5 Group Activities @ 40 points each	200 points	~20%
2 Tests @ 250 points each	500 points	~50%
Total	*1000 points*	*100%*

Your final grade will be based on the following points and percentages:

90% to 100%	900-1000 points	A
80% to 89%	800-899 points	B
70% to 79%	700-799 points	C
60% to 69%	600-699 points	D
Below 60%	Below 600 points	F

The **Blackboard gradebook (Grades link)** is where you want to go to check your grades and progress. You can do this at any time to get an idea of how you are doing in the class.

TENTATIVE SCHEDULE

Week #	Week of	Description/Readings/Tests
1	08/19	Introduction
2	08/26	Chapter 1 (Sampling and Data) and Chapter 2 (Descriptive Statistics - Graphics)
3	09/02	Chapter 2 (Descriptive Statistics - Numbers)
4	09/09	Chapter 3 (Probability and Counting)
5	09/16	Chapter 4 (Discrete Random Variables)
6	09/23	Chapter 5 (Continuous Random Variables)
7	09/30	Chapter 6 (Normal Distribution)
8	10/07	Chapter 7 (Central Limit Theorem)
9	10/14	**Test 1 from 6pm to 8pm in Room 2734 on Monday 10/14/2013**
10	10/21	Chapter 8 (Confidence Intervals)
11	10/28	Chapter 9 (Hypothesis Testing for One Sample)
12	11/04	Chapter 10 (Hypothesis Testing for Two Samples)
13	11/11	Chapter 11 (The Chi-Square Distribution)
14	11/18	Chapter 12 (Linear Regression and Correlation)
15	11/25	Chapter 13 (F-Distribution and One-Way ANOVA)
16	12/02	**Test 2 from 6pm to 8pm in Room 2734 on Monday 12/02/2013**

IVC POLICIES

- Under IVC policy, students are expected to attend every session of class in which they are enrolled. If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. **In an online class, this means that if you "disappear" and do nothing for two consecutive weeks, I will drop you from the class.** If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
- 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. The DSP&S office is located in Room 2117, in the Health Sciences Building. Their phone number is (760) 355-6312.
- Student Responsibilities and Expectations: You are expected to attend class on a regular basis. Make sure you come to every class meeting. How does this work online? Make sure that you check the announcements every day! Check your weekly assignments every week and keep up with our schedule. You will find it very hard to succeed in this class if you do not come to class regularly. Make sure that you read ahead in the textbook and that you work out the problems that I have assigned. Math is like playing the piano; the more you practice, the better you get.