Department of Science, Math and Engineering
Imperial Valley College
Imperial, CA 92251

MATH 119- ELEMENTARY STATISTICS
Syllabus
Summer 2013

<u>Instructor:</u>   Andres Noguez

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- Office Hours: N/A

<u>Course Information:</u>
- Lectures: MTWTh 7:30am-10:20am
- Room: 2725
- CRN: 30194
- Credit Units: 4
- Websites: : http://imperial.blackboard.com, http://www.mathxl.com

<u>Course Materials:</u>
- Textbook: Essentials of Statistics 4th edition by Mario F. Triola (Highly Recommended)
- MathXL (REQUIRED)
- TI-83 Plus (TI-84 is okay too) REQUIRED

<u>Prerequisites:</u> Math 091 with a minimum grade of C or better or appropriate placement.

<u>Description:</u> 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.

<u>Calculator:</u> A TI-83/84 will be required for this class. You are NOT ALLOWED to share calculators during tests. **TI 83 plus calculators may be rented from the Math Lab, you will need to pay the rental fee at the Cashier's window (building 10, to the side of the Admissions Office), you will be given a receipt, which you'll bring to the math lab.**

<u>Cell Phones:</u> Keep cell phones turned off during class. You are NOT ALLOWED to use a cell phone as a calculator during tests.

Keys to Success: 1. Positive attitude   2. Attend Class Regularly
                        3. Do Your Homework   4. Study

Keeping Up: Don't let yourself fall behind. Sign up for free tutorial service offered by the **Math Lab room 2500.**

Homework: In mathematics, homework is crucial. Homework is assigned through **MathXL** and done online. See instructions on Blackboard.

Tech Activities: There will be 4 technology activities. These are <u>not</u> optional. They are part of the course. Skipping these days will directly affect your grade.

Dropping: You may be dropped from this class if you miss the first day or if you miss three or more class sessions total. The last day to drop this class is July 23rd. After that date, I must give you a letter grade. It is your responsibility to drop, not mine.

DSP&S: Any student with a documented disability who may need educational accommodations should notify the Disabled Student Programs and Services (DSP&S) office as soon as possible. Room 2117 Health Sciences Building (760) 355-6312.

Test Days: People will be given the first hour and thirty minutes of class time to complete the exam. Those who finish the exam early are allowed to leave but must come back by 9:00 am otherwise they will be marked absent. Lecture will continue for the remainder of the time.

Grading: There will be 4 midterm tests, worth 100 points each. There will be a comprehensive final exam worth 200 points. Your homework is worth 200 points. Technology activity days are each worth 50 points, there will be four of these, and you must turn in the assignment by the end of class. Those who are absent during technology activity days or leave early will lose 50 points on that activity. **No early or make-up tests will be given. You can NOT make up technology activities either.**

Grading Policy	
Midterm Tests	400 points
MathXL Homework	200 points
Technology Activities AND attendance	200 points
Final Exam	200 points
Total	**1000 points**

Grading Scale	
90-100 %	A
80-89%	B
70-79 %	C
60-69 %	D
0-59 %	F

Academic Integrity is assumed and necessary. Disruptive students will be required to leave the class for the day. Continued disruptive behavior, cheating or plagiarism may result in severe academic penalty. See the college bulletin.

Math 119 Summer 2013 *Tentative* Schedule			
Date	Text	Event	Notes
6/24	1.2 through 1.5		Intro to Statistics
6/25	2.2 through 2.5		Summarizing and Graphing Data
6/26	3.2 through 3.4		Statistics for Describing Data
6/27	*Technology Activity*		
7/01	4.1, 4.2, **TEST1**	**TEST 1**	Basic Concepts of Probability **Test 1: Ch1, Ch2, and Ch3**
7/02	4.3, 4.4		Addition Rule, Basic Multiplication Rule
7/03	4.5, 4.6, 5.2		Mult. Rule, Counting, Random Variables
7/04		**HOLIDAY**	Independence Day
7/08	*Technology Activity*		
7/09	5.3, 5.4		Binomial Distribution, Poisson Distribution
7/10	6.2, 6.3, **TEST2**	**TEST 2**	Introduction to Normal Distribution **Test 2: Ch4 and Ch5**
7/11	6.4 through 6.6		Normal Distribution
7/15	*Technology Activity*		
7/16	7.1 through 7.3		Estimates of proportions, means with σ known
7/17	7.4, 7.5		Estimates of means with σ unknown variances
7/18	8.1, 8.2, **TEST3**	**TEST 3** *Projects Assigned*	**Test 3: Ch6 and Ch7** Basics of Hypothesis Testing
7/22	8.3 through 8.6		Hypothesis Testing
7/23	*Technology Activity*		
7/24	9.1, 9.2, **TEST4**	**TEST 4**	Inferences about two proportions **Test 4: Ch8**
7/25	9.3, 9.4		Inferences about two means indep. And dep.
7/29	10.1, 10.2,10.3		Linear Correlation and Regression
7/30	11.3, 11.4		Contingency Tables, ANOVA
7/31	**Catch Up Time**	**Catch Up Time**	**Catch Up Time**
8/01	Final Exam		Comprehensive Final

STUDENT LEARNING OUTCOMES: Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:
• Identify, compare, and contrast two articles that include both descriptive and inferential statistics on the same research topic. (ILO2, ILO4)

• Apply their knowledge of statistical inference to conduct formal significance tests concerning single populations. (ILO2)
• Demonstrate their knowledge of basic descriptive statistics. (ILO2, ILO4)
• Apply techniques of linear modeling to explore the relationship between two numerical variables. (ILO2)

MEASURABLE COURSE OBJECTIVES AND MINIMUM STANDARDS FOR GRADE OF "C":

Upon satisfactory completion of the course, students will be able to:

1. Distinguish the various ways of organizing, displaying, and measuring data.
2. Derive the numerical relationship that exists between bivariate data sets.
3. Demonstrate an understanding of the theory of probability and proficiency in solving problems of this nature.
4. Compute and interpret expected values and variance, and learn about the binomial distribution for discrete random variables.
5. Compute and interpret expected values and variance, and learn about the normal distribution or continuous random variables.
6. 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. Use the various types of distributions that are derived from the normal distribution.
8. Calculate and interpret confidence intervals for a population mean to show how probability connects to this type of statistical inference.
9. 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. Compare the means of the data from experiments involving more than two samples, including the single factor analysis of variance (ANOVA).
11. Fit a straight line to the given data in graphical form.
12. Make use of Chi-square distributions to analyze counts