Basic Course Information

Semester:	**Fall 2019**	Instructor Name:	**Duarte**
Course Title & #:	**Math 119**	Email:	
CRN #:	**11683**	Webpage (optional):	**NA**
Classroom:	**D YARD**	Office #:	**NA**
Class Dates:	**August 19 – December 14**	Office Hours:	**NA**
Class Days:	**Tuesday and Thursday**	Office Phone #:	**NA**
Class Times:	**4:30 - 6:35pm**	Emergency Contact:	**NA**
Units:	**4**		

Course Description

The use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision-making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-square and t-tests; and supervised use and practice in the application of technology for statistical analysis including the production of graphics, finding confidence intervals, test statistics, and regression lines, as well as the interpretation of the relevance of the statistical findings. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education. (CSU, UC)

Course Prerequisite(s) and/or Corequisite(s)

Appropriate placement as defined by AB705 or,

MATH 098 or MATH 091 with a grade of "C" or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Identify, compare, and contrast two articles that include both descriptive and inferential statistics on the same research topic. (ILO2, ILO4)
2. Apply their knowledge of statistical inference to conduct formal significance tests concerning single populations. (ILO2)
3. Demonstrate their knowledge of basic descriptive statistics. (ILO2, ILO4)
4. Apply techniques of linear modeling to explore the relationship between two numerical variables. (ILO2)

## Course Objectives and Minimum Standards for a Grade of "C"

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

1. Distinguish among different scales of measurement and their implications.
2. Interpret data displayed in tables and graphically.
3. Apply concepts of sample space and probability.
4. Calculate measures of central tendency and variation for a given data set.
5. Identify the standard methods of obtaining data and identify advantages and disadvantages of each.
6. Calculate the mean and variance of a discrete distribution.
7. Calculate probabilities using normal and t-distributions.
8. Distinguish the difference between sample and population distributions and analyze the role played by the Central Limit Theorem.
9. Construct and interpret confidence intervals.

10. Determine and interpret levels of statistical significance including p-values.
11. Interpret the output of a technology-based statistical analysis.
12. Identify the basic concept of hypothesis testing including Type I and II errors.
13. Formulate hypothesis tests involving samples from one and two populations.
14. Select the appropriate technique for testing a hypothesis and interpret the result.
15. Use linear regression and ANOVA analysis for estimation and inference, and interpret the associated statistics.
16. Make use of Chi-square distributions to analyze counts.
17. Use appropriate statistical techniques to analyze and interpret applications based on data from disciplines including business, social sciences, psychology, life science, health science, and education.

Textbooks & Other Resources or Links

Statistics Informed decisions using data, 5th edition, Author(s): Sullivan, Michael
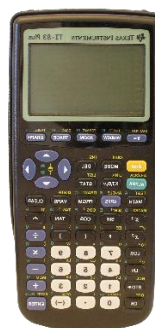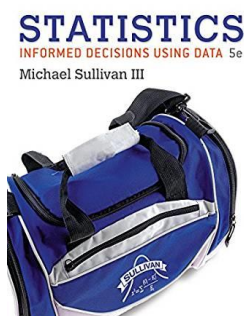
Calculators: Highly Recommended Texas Instruments (TI-83, TI-83 Plus, TI-84, TI-84 Plus)

Although calculators are not required, it is highly recommended that you bring one to class. A simple scientific calculator can help, it is **HIGHLY RECOMMENDED that you bring a graphing calculator (TI-83, TI-83 Plus, TI-84, TI-84 Plus).**

NO SHARING OF CALCULATORS WILL BE ALLOWED, EVEN IF YOU ARE DONE WITH THE TEST.

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Course Requirements and Instructional Methods

Tests (75%)

You can't show up late for tests! **You will have a total of 3 tests each worth 25% (total of 75%).** Tests will be announced at least one day before, but I am hoping to give you more notice if possible. **Tests will be on the chapters being covered and most likely will include some material from previous tests.** You can only miss ONE test. If you miss a test, the NEXT test will count for two scores (the previous test will NOT be counted as two scores). If you miss two or more tests, the other tests will be given zeros for a score. You must take the test in the class you are registered for (no exceptions).

Final Exam (25%)

The Final Exam will consist of 20 questions. It will be comprehensive. **You CAN'T miss the final exam. USE OF AN UNAUTHORIZED ELECTRONIC DEVICE (CELL PHONE, TABLET, ECT…) WILL RESULT IN A ZERO SCORE.**

REQUIRED FOR A TEST AND THE FINAL: (NEITHER WILL BE PROVIDED BY THE INSTRUCTOR)

ON THE TEST AND THE FINAL, YOU WILL BE ALLOWED TO USE:

1. Tables
2. Calculator
3. TI-Reference Guide
4. Statistic Guide

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time <u>and </u>two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

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Course Grading Based on Course Objectives

GRADING SCALE		GRADE DISTRIBUTION	
A	100 – 90		
B	89 – 80	Tests (3 tests @ 25% each)	75%
C	79 – 70	Final Exam	25%
D	69 – 60		
F	59 – under		

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student, whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- Four instances of the following may result in you being dropped from the course:
  1. Missing class
  2. Leaving class early
  3. Missing a quiz
  4. Missing an exam
  5. Failure to complete assignments

Classroom Etiquette

- THE USE OF AN UNAUTHORIZED ELECTRONIC DEVICE (CELL PHONE, TABLET, ECT…) IN ANY TEST AND/OR FINAL EXAM WILL RESULT IN A ZERO SCORE.
- Respect class start and end time. DO NOT come in late or leave early from class (it disrupts the flow of the class).
- Copies of books are not allowed in class.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.
- Humor is a big part of the class. To break up the monotony of class, I will pick points during class to stop so that the four hours and fifteen minutes do not seem as long. This is strategically done to help students cope with the long class.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Additional Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- CANVAS LMS. Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: Canvas Student Login. The Canvas Student Guides Site provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- Learning Services. There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your Campus Map for the Math Lab; Reading, Writing & Language Labs; and the Study Skills Center.
- Library Services. There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.
- The classroom notes, old tests, study guides are available through www.MyMathLab.com under "View Course Documents"
- Also suggest looking for tutorials on www.youtube.com and www.khanacademy.org

Disabled Student Programs and Services (DSPS)

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 Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center**. A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6128 in Room 1536 for more information.
- **Mental Health Counseling Services**. Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information.

Veteran's Center

The mission of the IVC Military and Veteran Success Center is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

 To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

Student Equity Program

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and

economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC General Catalog.

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC Library Department provides numerous Information Literacy Tutorials to assist students in this endeavor.

Anticipated Class Schedule/Calendar

WEEK	TOPIC	

1-6	**Chapter 1. Data Collection**
	    1.1 Intro to The Practices of Statistics
	    1.2 Observational Studies vs Designed Experiments
	    1.3 Simple Random Sampling
	    1.4 Other Effective Sampling Methods
	    1.5 Bias of Sampling
	    1.6 The Design of Experiments
	Chapter 2. Organizing And Summarizing Data
	    2.1 Organizing Qualitative Data
	    2.2 Organizing Qualitative Data: The Popular Displays
	    2.3 Additional Displays of Qualitative Data
	    2.4 Graphical Misrepresentations of Data
	Chapter 3. Numerically Summarizing Data
	    3.1 Measures of Central Tendency
	    3.2 Measures of Dispersion
	    3.3 Measures of Central Tendency and Dispersion from Grouped Data
	    3.4 Measures of Position And Outliers
	    3.5 The Five-Number Summary And Boxplots
	Chapter 4. Describing The Relation Between Two Variables
	    4.1 Scatter Diagrams and Correlation
	    4.2 Least-Squares Regression
	    4.3 Diagnostics on The Least-Squares Regression Line
	    4.4 Contingency Tables and Association
	    4.5 Nonlinear Regression : Transformations (Online)
		TEST AFTER THESE CHAPTERS 1-4

7-12	**Chapter 5. Probability**
	    5.1 Probability Rules
	    5.2 The Addition Rule And Complements
	    5.3 Independence and The Multiplication Rule
	    5.4 Conditional Probability And The General Multiplication Rule
	    5.5 Counting Techniques
	    5.6 Putting It Together: Which Method Do I Use?
	    5.7 Bayes's Rule (Online)
	Chapter 6. Discrete Probability Distributions
	    6.1 Discrete Random Variables
	    6.2 The Binomial Probability Distribution
	    6.3 The Poisson Probability Distribution
	    6.4 The Hypergeometric Probability Distribution (Online)
	Chapter 7. The Normal Probability Distribution
	    7.1 Properties of The Normal Distribution
	    7.2 Applications of The Normal Distribution
	    7.3 Assessing Normality
	    7.4 The Normal Approximation to The Binomial Probability Distribution
	Chapter 8. Sampling Distributions
	    8.1 Distribution of the Sample Mean
	    8.2 Distribution of the Sample Proportion
		TEST AFTER THESE CHAPTERS 5-8

13-15	**Chapter 9. Estimating The Value Of A Parameter**
	    9.1 Estimating A Population Proportion
	    9.2 Estimating A Population Mean
	    9.3 Estimating A Population Standard Deviation
	    9.4 Putting It Together: Which Procedure Do I Use?
	    9.5 Estimating With Bootstrapping
	Chapter 10. Hypothesis Tests Regarding A Parameter
	    10.1 The Language Of Hypothesis Testing
	    10.2 Hypothesis Tests For A Population Proportion
	    10.3 Hypothesis Tests For A Population Mean
	    10.4 Hypothesis Test For A Population Standard Deviation
	    10.5 Putting It All Together: Which Method Do I Use?
	    10.6 The Probability Of A Type II Error and The Power Of The Test
	Chapter 11. Inferences On Two Samples
	    11.1 Inference About Two Population Proportions
	    11.2 Inference About Two Means: Dependent Samples
	    11.3 Inference About Two Means: Independent Samples
	    11.4 Inference About Two Population Standard Deviations
	    11.5 Putting It Together: Which Method Do I Use?
	Chapter 12. Inferences On Categorical Data
	    12.1 Goodness-Of-Fit Test
	    12.2 Test for Independence And The Homogeneity Of Proportions
	    12.3 Inferences About Two Population Proportions: Dependent Samples
	Chapter 13. Comparing Three Or More Means
	    13.1 Comparing Three or More Means
	    13.2 Post Hoc Tests on One-Way Analysis Of Variance
	    13.3 The Randomized Complete Block Design
	    13.4 Two-Way Analysis of Variance
	Chapter 14. Inference On The Least-Squares Regression Model And Multiple Regression
	    14.1 Testing The Significance of the Least-Squares Regression Model
	    14.2 Confidence and Prediction Intervals
	    14.3 Introduction to Multiple Regression
	    14.4 Interaction and Dummy Variables
	    14.5 Polynomial Regression
	    14.6 Building a Regression Model
	
	Chapter 15. Nonparametric Statistics
	    15.1 An Overview of Nonparametric Statistics
	    15.2 Runs Test for Randomness
	    15.3 Inference About Measures of Central Tendency
	    15.4 Inference About the Difference Between Two Medians: Dependent Sample
	    15.5 Inference About the Difference Between Two Medians: Independent Samples
	    15.6 Spearman's Rank-Correlation Test
	    15.7 Kruskal-Wallis Test
		TEST AFTER THESE CHAPTERS 9-12

Tentative, subject to change without prior notice