

**Basic Course Information**

Semester:	Fall 2019	Instructor Name:	Carlos Canez
Course Title & #:	Math 119	Email:	
CRN #:	11684	Webpage (optional):	
Classroom:	CAL	Office #:	
Class Dates:	Aug 19 to Dec 14	Office Hours:	
Class Days:	MW	Office Phone #:	
Class Times:	4:30 to 6:35	Emergency Contact:	
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**

*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**

*ELementary Statistics*

### **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)

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 and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

### Course Grading Based on Course Objectives

#### GRADING SCALE GRADE DISTRIBUTION

A 100 – 90	Homework	20%
B 89 – 80	Tests (6 tests)	60%
C 79 – 70	Final/Midterm Exam	20%
D 69 – 60		
F 59 – under		

### Attendance

**[Required Information:** *The below information is the IVC attendance policy. Use this information in addition to any specific attendance policies you have for your course.]*

- 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.

### Classroom Etiquette

**[Required Information:** *Describe your policies regarding classroom conduct. The below is suggested language and may be modified for your course.]*

- **Electronic Devices:** Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.

- 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 by the instructor.
- 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, only students enrolled in the class may attend; children are not allowed.

### Online Netiquette

*[Required Information for web-enhanced, hybrid and online courses: Describe your policies regarding netiquette. The below is suggested language and may be modified for your course.]*

- 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

*[Required language.]*

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**

#### ***[Suggested Language.]***

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.

### **Disabled Student Programs and Services (DSPS)**

#### ***[Required language.]***

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**

#### ***[Required language.]***

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**

#### ***[Required language.]***

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](mailto: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](mailto: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

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#### 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

**\*\*\*Tentative, subject to change without prior notice\*\***