IMPERIAL VALLEY COLLEGE

vBasic Course Information

Semester:	Fall 2024	Instructor Name:	Allyn Leon
Course Title & #:	Math 119, Elementary Statistics	Email:	allyn.leon@imperial.edu
CRN #:	11064	Webpages (optional):	Canvas Login
Classroom:	N/A	Office #:	2761
Class Dates:	08/12/2024 - 12/07/2024	Student Hours (2761):	Wed/Thurs: 10:00 am to 11:00 am
Class Days:	N/A	Student Hours (Zoom):	Mon/Tues: 9:00 am to 10:00 am
Class Times:	N/A	Office Phone #:	760-355-6523
Units:	4	Emergency Contact:	Email me or call/text office phone

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; Probability Theory, such as counting principles, conditional probability and the Poisson distribution. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education.(C-ID: MATH 110) (CSU, UC credit limited. See a counselor.)

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

Successful completion of Intermediate Algebra or appropriate placement as defined by AB705.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to demonstrate problem solving strategies by identifying an appropriate method to solve a given problem, correctly set up the problem, perform the appropriate analysis and computation, and share their interpretation of the conclusion or the outcome, using correct grammar or in an oral presentation. This outcome will be assessed through selected exercises on exams throughout the semester.

Textbooks & Other Resources or Links

Recommended Textbook: Elementary Statistics Using Excel, 7th Edition, by Mario Triola, Pearson Publisher.
The OPTIONAL textbook is available at the bookstore or online. There are also numerous online resources in Canvas.

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, and there are also various apps that you can use instead; it really depends on what other math or science classes you plan on taking later on. You NEED a calculator of some sort to do the work on the tests.

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. Make use of Chi-square distributions to analyze counts.
13. Identify the basic concept of hypothesis testing including Type I and II errors.
14. Formulate hypothesis tests involving samples from one and two populations.
15. Select the appropriate technique for testing a hypothesis and interpret the result.
16. Use linear regression and ANOVA analysis for estimation and inference, and interpret the associated statistics.
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.
18. Apply concepts of probability theory, such as counting principles, conditional probability and the Poisson distribution.

Course Requirements and Instructional Methods

Quizzes: Each unit (or module) has a set of specified skills to learn, along with study materials and "quizzes" to help you practice these skills. There are four general units in the course, and each unit has several modules. Each module has one quiz. Quizzes are your chance to **practice**, to make mistakes, to learn. Making mistakes is part of the process of learning math and is expected. For this reason, **quizzes will only count as a small portion of your grade**. There are an **unlimited** number of attempts on quizzes and these assignments will be available for the entirety of the course. There are due dates listed for each of these assignments to **help keep you on pace** to complete the class by the last day.

Project(s): There will be four short projects that will involve the use of technology (such as Microsoft Excel, Google Sheets, or StatDisk). More information will be provided through Canvas. These projects will fulfill some of the skill objectives and a rubric will be provided (in Canvas) detailing how to fulfill the requirements for this category. There will be one project aligned with each main unit (there are four units).

Exams: Each unit will end with an exam on the skills covered. There are four main units, so there will be four exams. The exams are your chance to show you have learned the skills that your grade will be based on. You will **NEED to submit your work for MOST problems**, so make sure to review the rubric for each skill and show work that explains your solution. If you do not submit or upload work for your exam exercises I will not be able to verify the skill completed. Exam grades will "count" once the written work is graded. **How to show your work?** You will take pictures of the work you did and upload them into Canvas, or create a document that has the steps and upload that.

Note: If you do not have written work uploaded for your exam, your score will not count and will be recorded as a zero.

Updated 6/2023

Exams 1, 2, and 3 will allow for one retake (2 attempts total). Before attempting a retake exam, you will be expected to study, work on quizzes, and seek out tutoring help. If you show improvement on a retake or future exam, then your grade on that skill will be replaced to reflect your most recent work. Details on retakes will be in one of the orientation videos in Canvas. Please check those out.

Note: Do not log out in the middle of an exam or your score will be automatically recorded. If you run into a problem with this, please contact me right away.

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

Your grade will be calculated based on the following items:

10 Quizzes (take 13, top 10 count) @ 10 points each	100 points	~16.7%
4 Projects @ 25 points each	100 points	~16.7%
4 Exams @ 100 points each	400 points	~66.7%
Total	*600 points*	*100%*

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

90% to 100%	540-600 points	A
80% to 89%	480-539 points	B
70% to 79%	420-479 points	C
60% to 69%	360-419 points	D
Below 60%	Below 360 points	F

The **Canvas Gradebook** 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.

Other Course Information

Last day to add the class: Saturday 8/24/2024
Last day to withdraw from the class with a "W": Saturday 11/2/2024

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit http://www.imperial.edu/studentresources or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic	Assignment Dates
Week 1 Aug 12 - Aug 18	Introduction	SYLLABUS QUIZ DUE 08/15 NO EXCEPTIONS
Week 2 Aug 19 - Aug 25	Sampling and Data, Module 1	Quiz 1
Week 3 Aug 26 - Sept 1	Descriptive Statistics Part 1, Module 2	Quiz 2
Week 4 Sept 2 - Sept 8	Descriptive Statistics Part 2, Module 3	Quiz 3 Project 1
Week 5 Sept 9 - Sept 15	Probability Topics Part 1, Module 4	Quiz 4 Unit Exam 1
Week 6 Sept 16 - Sept 22	Probability Topics Part 2, Module 5	Quiz 5
Week 7 Sept 23 - Sept 29	Discrete Random Variables, Module 6	Quiz 6
Week 8 Sept 30 - Oct 6	Normal Distributions, Module 7	Quiz 7 Project 2
Week 9 Oct 7 - Oct 13	Confidence Intervals, Module 8	Quiz 8 Unit Exam 2
Week 10 Oct 14 - Oct 20	Hypothesis Testing for 1 Sample, Module 9	Quiz 9
Week 11 Oct 21 - Oct 27	Hypothesis Testing for 2 Samples, Module 10	Quiz 10
Week 12 Oct 28 -Nov 3	Hypothesis Testing Roundup	Project 3 Unit Exam 3
Week 13 Nov 4 - Nov 10	Correlation and Regression, Module 11	Quiz 11
Week 14 Nov 11 - Nov 17	Analysis of Variance, Module 12	Quiz 12
Week 15 Nov 18 - Nov 24	Review for Final	Project 4
Week 16 Nov 25 - Dec 1	THANKSGIVING BREAK	THANKSGIVING BREAK
Week 17 Dec 2 - Dec 7	Final Exam	Exam 4/Final Exam

THE SYLLABUS QUIZ IS DUE BY 11:59 PM ON THURSDAY 08/15/2024. IF THE SYLLABUS QUIZ IS NOT COMPLETED BY THEN, YOU WILL BE DROPPED FROM THE CLASS.

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Course Policies

- 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.
- *Attendance in an online class is more than just logging in*
    - You will need to make sure that you log in and check announcements regularly
    - There are weekly readings and assignments that need to be done in a timely manner
    - There will be exams completed online in Canvas as well
    - **The Syllabus Quiz, based on the syllabus, counts as an attendance check for the first week**
    - **The Syllabus Quiz is due by 11:59 pm on Thursday, 08/15/2024**
    - **If you do not complete the Syllabus Quiz on time, you will be dropped from the class**