Basic Course Information

Semester:	Spring 2023	Instructor Name:	Allyn Leon
Course Title & #:	Math 119, Elementary Statistics	Email:	allyn.leon@imperial.edu
CRN #:	20768	Webpage (optional):	imperial.instructure.com
Classroom:	2725	Office #:	2761
		Student Hours (Office):	Mon/Wed: 1:00pm to 2:00pm
Class Dates:	2/13/2023 - 6/9/2023	Student Hours (Zoom):	Tues/Thurs: 11:00am to 12:00pm
Class Days:	Monday/Wednesday	Office Phone #:	760-355-6523
Class Times:	3:45pm to 5:50pm	Emergency Contact:	Email me or call/text office phone
Units:	4	Class Format:	Face-to-Face

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)

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

By the end of this course, given a problem or a set of problems, the student will demonstrate problem solving strategies by identifying an appropriate method to solve a 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.

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

Through various activities and assessments:
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.
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**. These quizzes will be taken in class and completed in small groups.

Project(s): There will be four short projects that may involve the use of technology (such as Google Sheets, Minitab, StatDisk, or Microsoft Excel). 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 of the first three units will end with an exam on the skills covered. There are four main units. Material from the fourth unit will be included in the final.

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 @ 10 points each (take 13, count top 10)	100 points	~16.67%
4 Projects @ 25 points each	100 points	~16.67%
4 Exams @ 100 points each	400 points	~66.67%
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 02/25/2023
Last day to withdraw from the class with a "W": Saturday 5/13/2023

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.

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.

Anticipated Class Schedule/Calendar

Date or Week	Activity/Topic	Assignment
Week 1 Feb 13 - Feb 19	Orientation/Syllabus Quiz, Module 0 Sampling and Data, Module 1	Syllabus Quiz Quiz 1
Week 2 Feb 20 - Feb 26	*Campus Closed on Monday 2/20 (Washington's Birthday)* Descriptive Statistics Part 1, Module 2	 Quiz 2
Week 3 Feb 27 - Mar 5	Descriptive Statistics Part 2, Module 3 	 Quiz 3
Week 4 Mar 6 - Mar 12	Project 1 Review and Exam 1	Project 1 Exam 1
Week 5 Mar 13 - Mar 19	Probability Topics Part 2, Module 4 Probability Topics Part 2, Module 5	 Quiz 4
Week 6 Mar 20 - Mar 26	Probability Topics Part 2, Module 5 Discrete Random Variables, Module 6	Quiz 5 Quiz 6
Week 7 Mar 27 - Apr 2	Normal Distributions, Module 7 	 Quiz 7
Week 8 Apr 3 - Apr 9	Project 2 Review and Exam 2	Project 2 Exam 2
Week 9 Apr 10 - Apr 16	SPRING BREAK 	 SPRING BREAK
Week 10 Apr 17 - Apr 23	Confidence Intervals, Module 8 	 Quiz 8
Week 11 Apr 24 - April 30	Hypothesis Testing for 1 Sample, Module 9 	 Quiz 9
Week 12 May 1 - May 7	Hypothesis Testing for 2 Samples, Module 10 	 Quiz 10
Week 13 May 8 - May 14	Project 3 Review and Exam 3	Project 3 Exam 3
Week 14 May 15 - May 21	Correlation and Regression, Module 11 	 Quiz 11
Week 15 May 22 - May 28	Analysis of Variance, Module 12 	 Quiz 12
Week 16 May 29 - June 4	*Campus Closed on Monday 5/29 (Memorial Day)* Project 4	Project 4
Week 17 June 5 - June 9	Review for Final Exam Final Exam	 Final Exam