Basic Course Information

Semester:	**Spring 2024**	Instructor Name:	**Jeffrey Burt**
Course Title & #:	**Math 119 Elementary Statistics**	Email:	**jeff.burt@imperial.edu**
CRN #:	**20769**	Webpage (optional):	**N/A**
Classroom:	**402**	Office #:	**2765**
Class Dates:	**2/12-6/7**	Office Hours:	**TBD**
Class Days:	**T/TH**	Office Phone #:	**7603556489**
Class Times:	10:15-12:45	Emergency Contact:	**email**
Units:	4	Class Format/Modality:	In Person

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)

PREREQUISITES: - 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:

1. 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.

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.
18. Apply concepts of probability theory, such as counting principles, conditional probability and the Poisson distribution.

Textbooks & Other Resources or Links

Elementary Statistics Using Excel by M. Triola, 7th edition, 2022; ISBN:978-0136921721
1.

Course Requirements and Instructional Methods

Homework: Homework will be assigned at each class meeting. It is due on Tuesdays and must be turned in as a pdf on Canvas. The pdf must be in the correct order to count for credit.

Quiz: A quiz may be given at any time during any class period. It may not be announced. The number of quizzes or group work in the semester will be instructor's discretion. The purpose is to provide a feedback on your learning. The lowest 2 scores will be dropped.

Tests: There will be three tests. The purpose of these tests is to check your understanding of the concepts covered in the course. Most of the questions on these tests will require showing a significant amount of work. A correct answer with insufficient work will receive partial credit or no credit.

Final Exam: At the end of the semester, a COMPREHENSIVE/CUMULATIVE Final Exam will be given. If you miss the final, it will be recorded as a zero.

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

There will be 4 in class exams, each worth 15% of your final grade. The final is comprehensive and is also worth 25% of your total grade. There are no makeups for the exams or final. Plan to be available for the exam dates in the schedule, but also note that those dates can change, so make sure you are paying attention and staying up to date. Any missed exam will result in the grade of a '0'. The homework and quizzes will be combined and their average score will also be worth 15% points.

Grading: You need at least a total of 70% for a 'C' grade. It is broken down as follows

Homework and Quizzes 15%
Exams 60%
Final 25%

Updated 6/2023

The grade categories are as follows: A 100%-90%, B 89.9%-80%, C 79.9%-70%, D 69.9%-60%, F 59.9%-0% Attendance, class participation and a subjective instructor's interpretation of work may be used in assigning a final grade to borderline cases

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

The goal of this course is for you to gain the necessary skills and knowledge to do well, and improve your mathematical abilities, so you are able to succeed in future courses. My responsibility is to help you in any way I can to accomplish these goals, however it is your responsibility to be committed to your own success and keep up with the pace of the class. To do so you need to complete assignments on time and please ask questions when you have them.

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Course Rules:
1) Late work is not accepted. If you are going to be gone, contact me before the absence to make arraignments.
2) There are no make up tests.
3) It is your responsibility to drop or withdraw the class. Failure to do so will result in a regular grade (most probably an F).
4) Regular attendance is recommended and expected. The instructor can drop you from the class if you have more than the allowed number of absences.
5) You need to ask questions whenever you have them. If not in class, please come to my office during office hours, call me, email me, go to the math lab, google it, YouTube it, etc.
 6) It is your responsibility to make up the work you missed if you are absent. I highly recommend finding someone else to copy notes and material from that were covered in your absence.

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

Subject to change without prior notice

Week 1 2/12-2/16	1.1, 1.2, 1.3, 1.4
Week 2 2/19-2/23	2.1,2.2, 2.3, 2.4, 3.1
Week 3 2/26-3/1	3.2, 3.3, **Exam 1**
Week 4 3/4-3/8	4.1, 4.2, 4.3
Week 5 3/11-3/15	4.4, 5.1, 5.2
Week 6 3/18-3/22	5.3, 6.1, 6.2,
Week 7 3/25-3/29	**Exam 2,** 6.3
Week 8 4/1-4/5	Spring Break
Week 9 4/8-4/12	6.4, 6.5, 7.1
Week 10 4/15-4/19	7.2, 7.3
Week 11 4/22-4/26	8.1, 8.2, 8.3
Week 12 4/29-5/3	8.4, **Exam 3**
Week 13 5/6-5/10	9.1, 9.2, 9.3,
Week 14 5/13-5/17	9.4, 10.1,
Week 15 5/20-5/24	10.2, 11.3,
Week 16 5/27-5/31	12.2 **Exam 4**
Week 17 6/3-6/7	Review**, Final Exam**