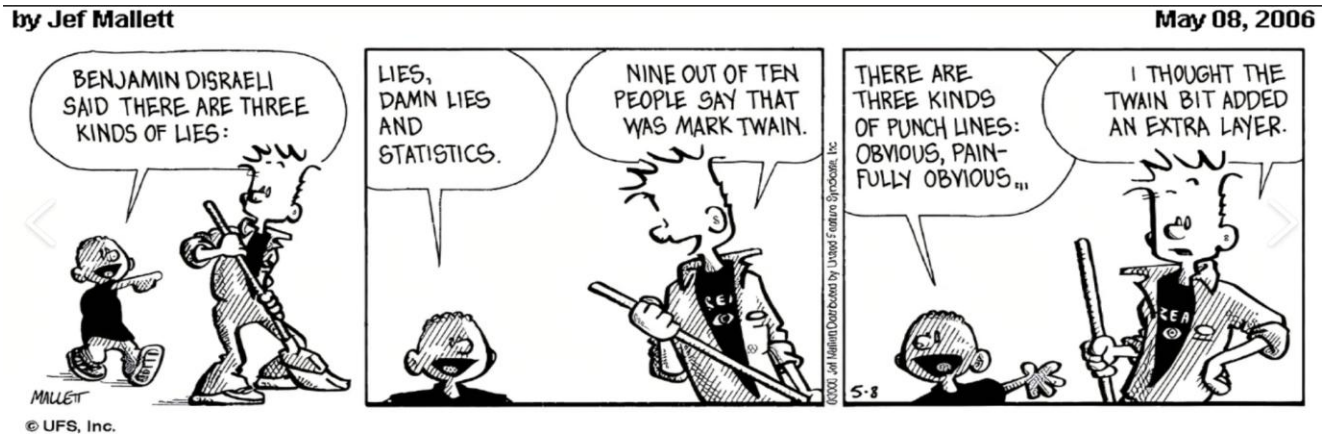
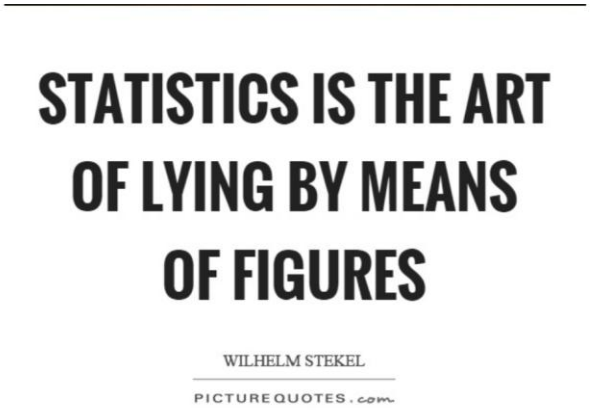
IMPERIAL VALLEY COLLEGE

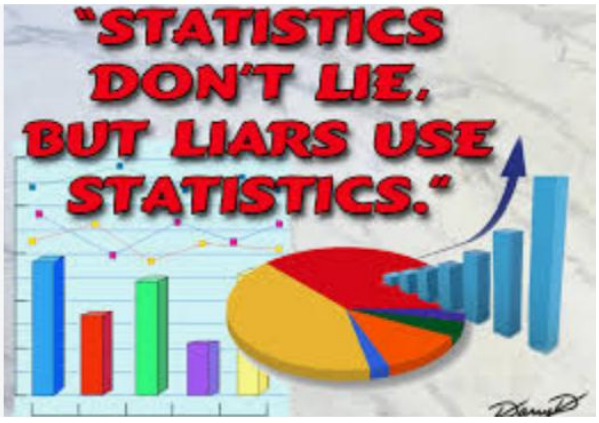
Basic Course Information

Semester:	**Spring 2022**	Instructor Name:	**Jill Nelipovich**
Course Title & #:	**Math 119**	Email:	**Jill.nelipovich@imperial.edu**
CRN #:	**20769**	Webpage (optional):	**Canvas**
Classroom:	**T: 2723 R: RT-OL**	Office #:	**2768**
Class Dates:	**2/14/22 – 6/10/22**	**Student Hours: (Text/Email/Zoom) =(T/E/Z)**	1. Monday: 9:00 – 9:30 T/E/Z 2. Tuesday: 7:30 – 8:00 am (2723) 1:30 – 2:30 (2768) 3. Wednesday: (T/E/Z) 8:00 – 9:00 a.m. 8:00 – 9:00 p.m. 4. Thursday: 7:30 – 8:00 am (2723)
Class Days:	**T/TR**	Office Phone #:	**760-355-6297 (cell in canvas)**
Class Times:	10:15 – 12:20	Emergency Contact:	**760-355-6201**
Units:	4	Class Format:	Hybrid

There are three kinds of lies – lies, damned lies, and statistics! (Disraeli or Twain)?







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Course Description

Welcome to the ***wonderful world of statistics***! Inevitably, you have seen and heard more statistics than you EVER wanted to in the past couple of years. In this class, we will evaluate the real-world statistics we see and hear every day, we will design our own experiments, collect data, analyze the data, interpret the results and share our results with the world (or the class)! We will challenge ourselves to pick apart some papers that we do not understand (myself included) – and see if we can rely on the statistics or determine if the author is writing a bunch of jibberish! So, let's take a look at a dry and boring video to get us started!

William Farr's Cholera Study --- we learn and we learn and we learn --- it is always important to look at data with an open mind!

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 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. 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

Elementary Statistics Using Excel, 6th Edition, by Mario Triola.

You will need to purchase either MyMathLab or the textbook. You may choose to do the homework in the textbook or MyMathLab.

MyMathLab Course ID: nelipovich91055 (Registration instructions posted in CANVAS)

TI83/84 Calculator – Available to rent in the study skills center. The rental costs $10.00 and it payment is made to the business office. The calculator is picked up in the Library (Study Skills Center).

The calculator can also be downloaded on most phones at no cost. I am okay with you using the phones on the exams – but your phones must remain flat at the calculator should be the only access. Phones must be put on do not disturb.

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.

Course Requirements and Instructional Methods

Projects: There will be a minimum of 4 group projects throughout the semester. The projects are designed to help you create an experimental design: design an experiment, collect the data, analyze the results, interpret the results and share the outcomes of the experiment. The data analysis portion will be completed on excel or StatCrunch.

Quizzes: Quizzes will be given either every week or every other week. This will often be done in class or in zoom class – and you may work with your peers.

Homework: Assigned on MyStatLab or bookwork. You may choose how to submit your homework.

Exams: There are three exams in the semester where you are given the opportunity to share your knowledge and what you have learned.

You may use TI 83/84 calculator on an exam (this can be downloaded on your phone for free to a nominal cost). The TI83/84 calculators are available to rent on campus.

Final Exam: The final exam is cumulative. The emphasis will be on the latter chapters.

Course Grading Based on Course Objectives

Projects ……20%

Homework & Quizzes..……..5%

Quizzes……5%

Exams…….45%

Final……25%

To be assured the grade you want to earn:

A: $90\% \leq x$

B: $80\% \leq x < 90\%$

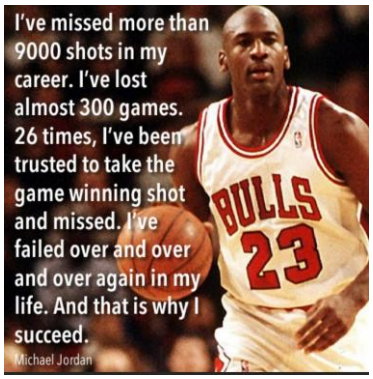
C: $70\% \leq x < 80\%$

D: $60\% \leq x < 70\%$

F: $60\% > x$

Course Policies

1. Have a lot of fun! Learning is no fun if you stress about learning! Always have a positive attitude. Stop, think, and relax! Allow your mind to be creative, give yourself permission to fail and embrace your successes!



2. Come to class AND participate in class! It doesn't do you, your peers or myself any good if you are texting throughout class and your mind is concentrated on your weekend rather than "the present".
3. Someday, you may need to use the statistics you learned. Take advantage of the opportunity today. The knowledge may come in handy at some point in your career. Your knowledge may be the difference of you earning the promotion over another person.

Other Course Information

Last Day to add; 2/26/22

Last Day to Drop with a W: 5/14/22

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
Week 1 Feb 14 – Feb 18	Syllabus & Introduction; Airplane activity Introduction to Statistics (Chapter 1)
Week 2 Feb 21 – Feb 25	Exploring Data with Tables and Graphs (Chapter 2)
Week 3 Feb 28 – Mar 4	Exploring Data with Tables and Graphs (Chapter 2) Describing, Exploring and Comparing Data (Chapter 3)
Week 4 Mar 7 – Mar 11	Describing, Exploring and Comparing Data (Chapter 3)
Week 5 Mar 14 – Mar 18	Review Exam 1
Week 6 Mar 21 – Mar 25	Probability (Chapter 4)
Week 7 Mar 28 – Apr 1	Discrete Probability Distributions (Chapter 5)
Week 8 Apr 4 – Apr 8	Normal Probability Distributions (Chapter 6)
Week 9 Apr 11 – Apr 15	Review Exam 2
Apr 18 – Apr 22	Spring Break
Week 10 Apr 25 – Apr 29	Estimating Parameters and Determining Sample Size (Chapter 7)
Week 11 May 2 – May 6	Hypothesis Testing (Chapter 8)
Week 12 May 9 – May 13	Inferences from two Samples (Chapter 9)
Week 13 May 16 – May 20	Correlation and Regression (Chapter 10)
Week 14 May 23 – May 27	Review Exam 3
Week 15 May 30 – Jun 3	Goodness of fit and contingency tables (Chapter 11) ANOVA (Chapter 12)
Week 16 Jun 6 – Jun 10	Review Final Exam

*****Subject to change without prior notice*****