

Math 140 B: Introductory Statistics

Fall 2017

- Instructor : Maria R. D'Orsogna
Lectures : Mon-Wed 5:00 - 6:40pm in Chaparral Hall 5122
Office hours : Mon and Wed 2:00-3:00 pm in Live Oak 1303D and by appointment
Contact : dorsogna@csun.edu or (818) 617 - 2781
Textbook : Statistics in Practice, Michael A. Fligner and William I. Notz
Workbook : Math 140 Introductory Statistics Course Workbook, Mark Schilling

Course description:

Whether aware of it or not, we come into contact with data, its collection, analysis and interpretation every day of our lives. Indeed, we are constantly bombarded by data. Referendum polls and results, imports and exports of goods, domestic manufacturing, median salaries, stock prices, the California drought, budget crisis and unemployment rates, are just a few examples of data coming to us from many different sources. Randomly collecting data will not tell us much however. We also need effective use of data, so that important features can be extracted, meaningful conclusions drawn, and trends presented. It is also important to plan data collection properly, knowing what questions we want to answer, designing experiments or surveys in the right way. Statistics is the science that studies how all this is done. In this class we will learn how to explore and display data, how to design experiments, how to tie subsample results to larger scale conclusions. We will also learn basic concepts of probability. The very first statistical study is assumed to be the 'Natural and Political Observations upon the Bill of Mortality' in 1663, by John Graunt. At the time people were interested in planning policies in relation to demographic and economic trends. Today, after more than three centuries, the advent of modern computers has allowed us to perform more and more sophisticated and automated analysis of data, and to visualize our results interactively. Statistics can be fun and useful as it is relevant to the sciences, business, government work, and to our daily lives.

Evaluation:

Three midterms determine 20% of your grade; the final cumulative exam is 40% of your grade. You will receive an F if you miss the final. **No make up tests will be given.** Midterms will be on Sept 27th, Oct 30th and Dec 3rd. The final is on Dec 16th 2-4 pm.

Scope of class, homework, etiquette:

Active learning is a core component of this class. You will participate in many in-class activities, often with a partner. Expect a lot of homework: math is like going to the gym, you will gain muscles only if you keep practicing and practicing. You will be asked to perform all your homework on a separate notebook which will be collected on the last day of class and used to determine borderline grades. You will need a simple scientific calculator. Cell phones and any other electronic devices must be shut down. Copying is not allowed. Please write out clearly, as it will make everyone's life easier. Any student caught violating academic honesty rules will be removed from the class. Since this is a large class, it is absolutely critical to behave in a disciplined manner. Talking during lectures, entering the classroom late, leaving the classroom early, all disrupt the class significantly, and will not be allowed. Food and drink are prohibited. The building you are sitting in costs in excess of 80 million tax-payer dollars. Please treat it with respect. Do not lean your skateboards against the wall, pick up your trash, leave the bathroom clean, and act as if it were your mother's living room.

Fundamental topics:

Constructing and interpreting graphical summaries of data; understanding variability, distribution, association, sampling, data collection, the role of probability in sampling and experiments; the normal distribution and the Central Limit Theorem; estimation, statistical significance; correlation and regression

A rough calendar:

Week 1: Chapters 0 – 1	Week 6: Chapters 7 – 8	Week 11: Chapters 19 – 20
Week 2: Chapters 1 – 2	Week 7: Chapters 9 – 10	Week 12: Chapters 20 – 21
Week 3: Chapters 2 – 3	Week 8: Chapters 15 – 16	Week 13: Chapters 22 – 23
Week 4: Chapters 3 – 4	Week 9: Chapters 16 – 17	Week 14: Chapters 6 – 24
Week 5: Chapters 4 – 5	Week 10: Chapters 17 – 18	Week 15: Review