

Introduction to Statistics

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Chapter 1

Course Information

The purpose of this elementary statistics course is to introduce students to the relationship between statistics and the world through use of a wide variety of real applications that bring life to theory and methods.

1.1 Course Description

The course covers sampling methods, classification of data, probability, frequency and probability distributions, confidence intervals, tests of statistical significance, and simple regression and correlation.

1.2 Course Outcomes

Upon successful completion of this course, the student will be able to:

1. Interpret quantitative data using graphs and descriptive statistics with emphasis on histograms and boxplots.
2. Compute measures of expectation and variation for a discrete probability distribution
3. Compute probability for a binomial and normal distribution.
4. Perform calculations to estimate parameters using confidence intervals based on the normal distribution and t -distribution.
5. Perform hypotheses testing involving a sample mean, proportion, and standard deviation/variance
6. Perform hypotheses testing involving two sample means (independent and dependent), two population proportions, and two standard deviations/variances.
7. Construct linear regression models and correlation coefficients from datasets.

Chapter 2

Introduction

All chapters start with a first-level heading followed by your chapter title, like the line above. There should be only one first-level heading (**#**) per .Rmd file.

2.1 A section

All chapter sections start with a second-level (**##**) or higher heading followed by your section title, like the sections above and below here. You can have as many as you want within a chapter.

An unnumbered section

Chapters and sections are numbered by default. To un-number a heading, add a `{.unnumbered}` or the shorter `{-}` at the end of the heading, like in this section.