

STAT4102 Schedule and Student Goals

Students should be able to ...

Wed, Jan 23

Understand that the goal of statistics is to make an inference about a population based on a sample. (1.4)

Describe what the central limit theorem says about the sample mean. (7.3)

Fri, Jan 25

Use the central limit theorem to make (approximate) probability statements about the sample mean. (7.3)

Find the sample size required to reach a desired probability level. (7.3)

Mon, Jan 28

Understand the basics of the proof the central limit theorem and be able to apply the basic technique in similar, but simpler, situations. (7.4)

Wed, Jan 30

Construct confidence intervals for the population mean using the CLT (8.6, 8.7)

Interpret confidence intervals and describe why that interpretation is correct. (8.5)

Fri, Feb 1

Use pivotal statistics to find confidence intervals for other parameters. (8.5)

Mon, Feb 4

Construct confidence intervals for proportions and differences between proportions and means (8.6).

Know what the distribution of s^2 is, where the T distribution comes from, and why it's needed instead of the Z . (7.2, 8.8)

Wed, Feb 6

Construct small-sample (T) confidence intervals, and describe the differences between these and the large-sample (Z) intervals. (8.8)

Construct confidence intervals for the population variance. (8.9)

Fri, Feb 8

Describe what a point estimate is. (8.1)

Describe the relationship between bias, variance, and mean square error and calculate them to compare point estimates. (8.2)

Mon, Feb 11

Compute and interpret the relative efficiency of two estimators. (9.2)

Wed, Feb 13

Determine if a given estimate is consistent and describe what that means. (9.3)

Fri, Feb 15

Compute the likelihood function and describe how it is similar and different from the probability distribution. (9.4)

Determine if a given estimate is sufficient and describe what that means. (9.4)

Mon, Feb 18

Use the Rao-Blackwell Theorem to find minimum variance unbiased statistics. (9.5)

Wed, Feb 20

Construct point estimates using maximum likelihood and method of moments. (9.6, 9.7)

Fri, Feb 22

Flex day.

Mon, Feb 25

Review.

Wed, Feb 27

Exam.