

Course Syllabus for DS 705: Statistical Methods

NOTE: This syllabus document contains the basic information of this course. The most current syllabus is available in the full course.

Course Description

This course will present statistical methods and inference procedures with an emphasis on applications, computer implementation, and interpretation of results. Familiarity with the R programming language is highly recommended. Topics include simple and multiple regression, model selection, correlation, moderation/interaction analysis, logistic regression, the chi-square test, the Kruskal-Wallis test, analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), factor analysis, and canonical correlation analysis.

Prerequisite: DS 700 or 701.

Course Objectives

By the end of this course, you will be able to:

- Analyze data and questions to determine proper statistical procedures in a variety of practical situations.
- Implement and interpret output from a variety of statistical procedures using R software.
- Efficiently author reports combining plots and numerical summaries to communicate results to stakeholders.

Course Components

Homework: Weekly homework assignments will be completed by conducting analyses in R/RStudio and answering auto-graded quiz questions on Canvas. There are 11 of these weekly homework assignments, each worth 30 points.

Project: There are three projects that are worth 100 points each. Project subtasks will be assigned and submitted in the weeks prior to the final, complete project submission. Instructor feedback will be provided after each of these steps. Roughly half of the points for each project submission are for technical correctness, while the other half are for clear, effective communication with complete sentences, correct grammar, and correct spelling.

Grading

Your mastery of course content is assessed using a variety of methods:

Activity	Points
Homework (11)	330 total points

Project (3)	300 total points
TOTAL	630 total points

Final grades are assigned using the following scale:

90–100%	A
80–89%	B
60–79%	C
0–59%	F