

This is an intermediate level course designed to introduce students to advance techniques used in data analysis and database management. Focus is placed on the use of scripts, the appropriate use of parametric and nonparametric test, regression analysis and Decision Trees. The incorporation of these techniques will provide the tools necessary to perform sophisticated analysis and management of data.

Students will be able to create and run scripts.

Students will appropriately use parametric and nonparametric test.

Students will be able to perform a Two-way ANOVA and repeated measure ANOVA.

Students will be able to perform linear and multiple regression analysis.

Students will be able to generate a decision tree.

I. Scripts

- 1) Creating syntax file:
- 2) Through GUI
- 3) Command line
- 4) Importing and modifying syntax files

II. Non parametric test

- 5) Testing for skewness
- 6) One sample Wilcoxon signed rank test
- 7) Mann-Whitney
- 8) Paired sample Wilcoxon signed rank test
- 9) Kruskal-Wallis H-test
- 10) Bootstrapping

III. Regression analysis

- 11) Linear regression (linear)
- 12) Linear regression (curvilinear)
- 13) Multiple regressions with dummy variables
- 14) 2 Way ANOVA
- 15) Repeated measure ANOVA
- 16) Decision Tree