

Syllabus for ABT 775 Tools for Data Analysis

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 introduces methods of data analysis and their implementation using R and RStudio, with applications in biotechnology, business, and research. Students will explore methods of data wrangling, visualization, simulation, and modelling, with an emphasis on machine learning. Prior knowledge of R and statistical analysis are assumed.

Prerequisite(s)

ABT 705, ABT 715

Course Outcomes

Upon completing this course, you will be able to do the following:

- Evaluate and apply methods of data analysis that are commonly used in biotechnology, business, and research;
- Explain the rationale behind these methods;
- Select an appropriate method of data analysis for a given problem;
- Implement data analysis procedures using R and RStudio;
- Communicate statistical findings in biotechnology research to stakeholders.

Course Requirements/Components

Take-home Exams

You will complete take-home exams to assess your comprehension of materials from given modules.

Data Analysis Proficiency Challenges

These are a series of assignments that give you the opportunity to show your competency in using various data analysis programs with given data sets.

Discussions

Discussions will allow you to contemplate and interact with your peers regarding the application of biotechnology with data analysis.

Reflective Assessments

These will give you the opportunity to take the time to reflection upon what you've learned from previous lessons or modules.

Grading

The following grading scale will be used to evaluate all course requirements and to determine your final grade:

Grade	Percentage Range
A	93% - 100%
A-	90% - 92.9%
B+	86% - 89.9%
B	83% - 85.9%
B-	80% - 82.9%
C+	76% - 79.9%
C	73% - 75.9%
C-	70% - 72.9%
F	0 – 69.9%

Assignment	Points
Two take-home midterms (2 x 100 pts)	200
Comprehensive Final	200
Data Analysis Proficiency Challenges (25 x 10 pts)	250
Online Discussions (5 x 10 pts)	50
Reflective Assessments (8 x 10 pts)	80
Total Points	780