Introduction to Biostatistics and Bioinformatics

August 30  Week 1
Introduction to course, review of basic probability, types of variables, Introduction to GraphPad Prism

Experiments with one dependent variable

September 06  Week 2
Hypothesis testing and confidence intervals; Single-sample tests for means and proportions

Experiments with one dependent, one independent variable

September 13  Week 3
t-tests: 1 group measured at 2 time points

September 20  Week 4
Conditional probability; t-tests: Mean difference between 2 groups

September 27  Week 5
ANOVA: Mean differences across many groups, post-hoc comparisons

October 04  Week 6
Repeated Measures ANOVA: 1 group measured at many time points

October 11  Week 7
Dealing with outliers and non-normally distributed data, power analysis

October 18  Week 8
Classification and ROC curves

October 25  Week 9
Survival analysis

November 01  Week 10
Linear correlation, simple linear regression

November 08  Week 11
Review day

Experiments with one dependent, multiple independent variables

November 16 (Thursday)  Week 12
Factorial analysis of variance, understanding interactions

November 22  No Class, Happy Thanksgiving

Bioinformatics Techniques

November 29  Week 13
Introduction to classification with multiple independent variables

December 06  Week 14
Introduction to clustering