

Statistics for Environmental Scientists

ENVS222

Statistics for Environmental Scientists is a second-year module led by Matthew Spencer, running in the first semester. The module aims to develop the statistical skills needed by students in subjects such as ecology, environmental science, marine biology, and oceanography. We emphasize the use of software to analyze real data. We do not assume extensive prior knowledge of statistics. Essential theory is taught alongside the practical components.

The module starts with ideas about graphical and numerical summaries of data, which will be familiar to some but not all students. We build on these basic ideas to study the principles of statistical inference. We then work through some of the most important statistical methods, including t-tests, analysis of variance, correlation, regression, general linear models, and chi-square tests for categorical data. We end with classes on the design of surveys and experiments.

We learn how to use the Minitab software package in weekly workshops. In many of these workshops, we collect the data we are going to analyze. This helps students appreciate the complexities of data recording.

The module is assessed by two reports on practical sessions and a multiple-choice exam.

