

Module: Bioinformatics and Analysis

Module coordinator: Helen Brown

Module outline

This module introduces the students to modern analysis methods, including statistical approaches and design, bioinformatics and modelling. The students will attend workshops run by active researchers in the area, covering the R statistical environment, mathematical modelling, phylogenetics, transcriptomic analysis and large data handling, genome wide association analysis and genetic modelling. All topics will involve extensive hands on experience and guided practice with biologically relevant data sets.

Topics

Statistics for the biosciences
Experimental design, power calculations
Introduction to statistical modelling
Phylogenetics of pathogen organisms
Mathematical modelling in infectious diseases
Transcriptomic analysis and large data sets
Epidemiology and introduction to the R statistical environment

Learning : 5 ECTS

Lectures: 20h
Workshops: 20h
Guided Practices: 40h
Independent work: 45h

Assessment

30% Poster presentation on a statistical test
70% Performance on practical exercises