

2006/07 Taught Postgraduate Module Catalogue

BIOL5223M

Human Genetic Data Analysis

10 credits

Module manager Dr. M. Shaw

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Taught Semester 2 [View Timetable](#)

Year running 2006/07

Pre-requisite qualifications

BSc or equivalent

Pre-requisites

BIOL5221M (or equivalent)

Module replaces BLGY5045M

This module is not approved as an Elective

Objectives

On completion of this module, students should be able to design human genetic studies which will involve:

- establishing heritability and mode of inheritance;
- consideration of heterogeneity;
- assessing population structure and linkage disequilibrium;
- understanding the range of genetic markers available and their uses;
- knowledge of parametric and non parametric linkage and association approaches.

Syllabus

Genetic segregation analysis; linkage analysis; genetic linkage mapping, hypervariable markers, SNPs, PIC values, heterozygosities; F statistics; linkage disequilibrium; lod scores by hand and using the program LINKAGE; autozygosity mapping; genetic heterogeneity; risk estimation with linkage information and mutation analysis; complex polygenic and multifactorial disorders; the analysis of complex disorders: linkage disequilibrium, population-based and family-based association methods, non-parametric methods of linkage analysis; immunogenetics and the HLA system; estimation of heritability.

Teaching methods

Lectures: 5 x 1 hour;

Tutorials: 5 x 1 hour;
Computer classes: 7 x 2 hours, 5 x 3 hours.

Private study

3 hours reading per lecture or tutorial: 30 hours;
31 hours assessed essay.

Progress monitoring

Performance in computer classes assessed on the day.

Methods of assessment

1 x 2500 word essays, each 25%;
Computer class writing-up, 5 x 15%.

Reading list

The [reading list](#) is available from the Library website