

2005/06 Taught Postgraduate Module Catalogue

BIOL5203M

Bioscience Core Skills 3 (Modern Bioscience Tools)

10 credits

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Taught Semesters 1 & 2 [View Timetable](#)

Year running 2005/06

Pre-requisite qualifications

B.Sc. or equivalent

Co-requisites

BIOL5100, 5202 and 5204

This module is not approved as an Elective

Objectives

On completion of this module, students should have an awareness of and an understanding of a range of techniques and technologies that are applicable to the modern biosciences ranging from whole organism biology through to molecular biology. Students will have developed an appreciation of the theoretical bases of these techniques and their appropriateness of their application to biological problems. Students will be able to demonstrate a sound knowledge of the concepts and equipment that underpin molecular biology methods, genetic analyses, genomics, physiology and structural biology with particular reference to their application within the biological sciences.

Syllabus

The module will consist of formal lectures and workshops focused on specific techniques used in modern biosciences including Protein analysis, Proteomics, Chromatographic techniques, X-ray crystallography, Mass spectrometry, Protein expression, Nuclear magnetic resonance (NMR), Bioimaging, Confocal laser scanning microscopy, Surface plasmon resonance (SPR), Polymerase chain reaction (PCR), Circular dichroism, Fourier-transform infra-red spectroscopy (FTIR), Light scattering, Electron microscopy, Microarrays, Transcriptomics, Atomic force microscopy, Wave DNA fragment analysis and Phylogenetics

Four of the topic areas will form the basis of data analysis and interpretation sessions.

Teaching methods

Lectures/workshops: 15 x 2 hours;
Data analysis seminars: 4 x 2 hours.

Private study

2 hours reading per lecture: 30 hours;
8 hours preparation per seminar: 32 hours.

Progress monitoring

In addition to activities in data analysis seminars students will also maintain a log of notes on techniques that will be monitored at the end of each term.

Methods of assessment

4 data-handling problems associated with specific techniques discussed in the course (2 per term) (25% each).

Reading list

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