BS215-24 Biological Sciences Laboratories

20/21

Department
Life Sciences
Level
Undergraduate Level 2
Module leader
Robert Spooner
Credit value
24
Module duration
8 weeks
Assessment
10,000% coursework, 0% exam
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module aims to increase the practical laboratory skills, data handling, and problem-solving skills of Biological Science students and to reinforce the need to use Good Laboratory Practice. It covers core labs taken by all students (bioinformatics and molecular cell biology) and labs specific for Biological Science students (Multicellular Systems, Genetics and Evolution and an Environmental Field Trip). The core labs introduce students to the techniques of PCR and cloning, and to sequence –handling i.e. from clone to genome. The specific labs are strongly linked to lecture modules, with the aim of co-ordinating theory with practical skills.

Module aims

Improving laboratory, data-handling and problem-solving skills.

Carry out experiments following GLP (Good Laboratory Practice)
Understand the links between nucleic acid amplification/ cloning and collating/building a genome
Understand responses to light in plants and animals
Demonstrate keen observational skills
Develop skills in recording phenotypes

Apply predictive modelling
Use and understand phylogenetic techniques
Use SPSS
Identify organisms using keys
Understand ecological principles such as zonation, succession and population estimation

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Bioinformatics
Molecular Biology
Multicellular Systems
Genetics and Evolution
Plus:
Environmental Field Trip

Learning outcomes

By the end of the module, students should be able to:

- Carry out experiments following GLP (Good Laboratory Practice) Understand the links between nucleic acid amplification/ cloning and collating/building a genome Understand responses to light in plants and animals Demonstrate keen observational skills Develop skills in recording phenotypes Apply predictive modelling Use and understand phylogenetic techniques Use SPSS Identify organisms using keys Understand ecological principles such as zonation, succession and population estimation

Indicative reading list

Not applicable.
Students are provided with comprehensive laboratory manuals before each laboratory class or block of classes.

Subject specific skills

Carry out experiments following GLP (Good Laboratory Practice)

Understand the links between nucleic acid amplification/ cloning and collating/building a genome

Understand responses to light in plants and animals

Demonstrate keen observational skills
Develop skills in recording phenotypes
Apply predictive modelling
Use and understand phylogenetic techniques

Use SPSS

Identify organisms using keys
Understand ecological principles such as zonation, succession and population estimation

Transferable skills

Adult learning, self directed learning, group work, quantitative skills, field work

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Study

Study time

Type	Required
Practical classes	14 sessions of 6 hours (35%)
Fieldwork	5 sessions of 1 hour (2%)
Private study	151 hours (63%)
Total	240 hours

Private study description

Self directed learning, preparation for lab sessions and report writing.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A1

	Weighting	Study time
Bioinformatics lab	833%	
Molecular Cell Biology Lab	1,667%	
Multicellular Systems Lab	2,500%	
Genetics and Evolution Lab	2,500%	
Environmental Biology Lab	2,500%	

Feedback on assessment

Group feedback via Moodle and individual feedback on reports\r\n\r\n

Availability

Courses

This module is Core optional for:

- UBSA-3 Undergraduate Biological Sciences
    - Year 2 of C100 Biological Sciences
    - Year 2 of C100 Biological Sciences
- Year 2 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 2 of UBSA-4 Undergraduate Biological Sciences (with Intercalated Year)
- Year 2 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)