BS356-15 Laboratories and Assessments for Biochemistry

23/24

Department
   Life Sciences
Level
   Undergraduate Level 3
Module leader
   Daniel Franklin
Credit value
   15
Module duration
   30 weeks
Assessment
   Multiple
Study location
   University of Warwick main campus, Coventry

Description

Introductory description

Subject specific laboratory classes and a small group tutorial programme.

Module aims

To complete the development of students' research and transferrable skills through a program of laboratory and tutorial activities (continuation of programs in Years 1 and 2).

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.

Students will complete the third year of a laboratory and tutorial-based skills program. The key aims of the year 3 program are to embed final year level literature and practical research skills. This will be achieved through a combination of tutorial set tasks, some of which are formative, some summatively assessed, and laboratory classes.

Learning outcomes

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

- Students should be able to critically analyse the primary research literature
- Students should be able to design experiments
- Students should be able to navigate ethical approval
- Gain an understanding of the relevance of lactate dehydrogenase
- Determine the key kinetic parameters necessary to assess enzyme inhibition of activation
- Use automated methods to analyse enzyme activity
- Understand the principles which underly study of novel enzyme modulators
- Gain an appreciation of how different techniques can be applied to a problem to reach a sound scientific conclusion
- Produce and interpret technically robust and complex experimental data
- Gain an appreciation of the strengths and limitations of conducting research as a member of a large team

Subject specific skills

a. Demonstrate clear understanding of the scientific topic

b. Contain evidence of extended reading and lateral integration of material not covered in the lectures

c. Demonstrate independent thought and deep understanding

d. Specifically answer the set question using information from multiple lectures and sources

e. Be structured and formatted in a way that demonstrates understanding and logical flow

f. Use multiple sources to construct complex scientific arguments and integrating these to build and develop the student's own scientific conclusions.

Transferable skills

1. Critical appraisal of source material
2. Self directed learning
3. Adult learning

Study

Study time

Type	Required
Tutorials	12 sessions of 1 hour (8%)
Practical classes	50 sessions of 1 hour (33%)
Total	150 hours

Type	Required
Private study	88 hours (59%)
Total	150 hours

Private study description

Labs - data analysis and report writing.
Tutorials - preparation of material for each contact session, and assessment reports.

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 A2

	Weighting	Study time	Eligible for self-certification
Structural Biology lab	40%		Yes (extension)
Enzyme lab 1 - plots and data	13%		Yes (extension)
Enzyme lab 2 - lab report	27%		Yes (extension)
Experimental design 1	10%		Yes (extension)
Deconstruction of rejected paper			
Experimental design 2	10%		Yes (extension)
Analysis of research paper with ethical approval submission			

Assessment group R2

	Weighting	Study time	Eligible for self-certification
No reassessment	100%		No

Feedback on assessment

Written individual feedback

Availability

Courses

This module is Core for:

- Year 3 of UBSA-C700 Undergraduate Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
  - Year 3 of C1A2 Biochemistry
  - Year 3 of C700 Biochemistry
- Year 4 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- Year 3 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)