MD3A1-15 Laboratories and Assessments for Integrated Science

26/27

Department
Warwick Medical School
Level
Undergraduate Level 3
Module leader
Karuna Sampath
Credit value
15
Module duration
12 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

Laboratories and Assessments for Integrated Science

Module aims

To increase the practical and laboratory skills of Integrated Science students, including experimental design.
To increase the written, critical evaluation and presentation skills of Integrated Science students.
To continue to encourage students to use the primary literature to research topics.
To support the student’s overall development as effective working scientists.

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 in

preparation for their final year research projects. This will be achieved through a combination of tutorial set tasks and laboratory classes.

Learning outcomes

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

- Efficiently design & perform experiments following Good Laboratory Practice taking an Integrated Science approach – i.e. combining principles and techniques from more than one discipline to answer biological questions.
- Write detailed, well-researched, concise, effective summaries of scientific information on a variety of topics.
- Demonstrate ability to critically interpret scientific papers
- Research topics in the literature.

Indicative reading list

Reading lists can be found in Talis

Specific reading list for the module

Interdisciplinary

Students will learn to solve scientific problems by integrating concepts and approaches from different scientific disciplines, including biology, physics, chemistry and computing, with the underlying mathematics serving as a common language

Subject specific skills

Be able to harness the methods and concepts of more than one discipline to answer biological questions.

Transferable skills

Carry out experiments following Good Laboratory Practice taking an Integrated Science approach
Skills with written detail, well-researched, concise, effective summaries of scientific information
The ability to critically interpret scientific papers, to design experiments, analyse data and write lab reports

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Study

Study time

Type	Required
Tutorials	12 sessions of 1 hour (8%)
Practical classes	8 sessions of 6 hours (32%)
Private study	30 hours (20%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

Student led reading of methodological topics and data analysis from the reading list and beyond.
Pursuit of independent learning surround research topics covered in the practical labs.
Time for reading more broadly the literature around the allocated papers for the Project plan.

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
Assessment component			
Integrated Science Lab 1 Report	35%	20 hours	Yes (extension)
Project Lab Report 2000 words or 5 pages (with the font size specified e.g. 12).			
Reassessment component is the same			
Assessment component			
Integrated Science Lab 2 Report	35%	20 hours	Yes (extension)
Project Lab Report 2000 words or 5 pages (with the font size specified e.g. 12).			

	Weighting	Study time	Eligible for self-certification

Reassessment component is the same

Assessment component

Project plan	30%	20 hours	No

Oral presentation of a mini-project plan for a 6-month student project including brief background, objectives , experimental methods and expected outcomes.

Reassessment component

Project plan reassessment	No

Reassessment of the Project plan to be submitted as a written report. The report will consist of no more that four slides with up to 750 words in total explaining the project in lieu of an oral presentation.

Feedback on assessment

The Lab reports will be written in the format of a scientific paper, in line with and further developing the approach first used in Y1 and Y2 Integrated Science. Feedback on project plan selection will be given in tutorial sessions. Written feedback will be given individually for project plan presentations.

Availability

Courses

This module is Core for:

- Year 3 of UMDA-CF10 Undergraduate Integrated Natural Sciences (MSci)