MD3A2-30 MD3A2-30 Integrated Science Research Project

26/27

Department
Warwick Medical School
Level
Undergraduate Level 3
Module leader
Anne Straube
Credit value
30
Module duration
30 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

Students select a project in an area of their interest. The Year 3 research project is a key module, in which students bring together all the research and practical skills they have been taught in Year 1 and 2 laboratories and the tutorial program. Students select a project, keep a laboratory notebook, give an oral presentation and a 6,000 word thesis.

Module aims

The aim of the module is to give students the opportunity to utilise the research and evaluation skills developed throughout years 1 and 2 in order to produce a substantial piece of research. • Students complete a seminar based on their research project aimed at an educated lay audience. • Students complete a research project which includes:

A high quality scientific literature review of their chosen research field.
Critical appraisal of source material and statistical analysis
Construction of scientific arguments based on multiple sources
Production of a scientific abstract
Production of a discussion and conclusion which include evidence of independent thought and

reasoning
Evidence of laboratory record keeping

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.

The students will conduct a research project in which they use an integrated science approach to address a specific research question. They will read relevant literature, acquire, analyse and interpret data and produce a thesis and oral presentation summarising their findings.

Learning outcomes

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

- Plan and engage in an independent and sustained investigation and evaluation of a chosen research topic
- Identify and appraise relevant scientific literature using on-line literature search engines, relate this to appropriate methodologies and draw appropriate conclusions
- Maintain a research record detailing experimental procedures, observations and quantitative data from experiments
- Effectively construct scientific results and arguments, using multiple sources.
- Apply an integrated science approach to a research question drawing from tools of different disciplines to acquire, analyse and interpret research data.
- Critically review relevant research papers
- Communicate research findings orally and in writing

Indicative reading list

Reading lists can be found in Talis

Specific reading list for the module

Research element

Advanced laboratory techniques in microscopy, molecular biology & biochemistry to acquire data
Analysis of data, including quantitative image analysis and statistical analysis
Construction of scientific arguments based on multiple sources
Production of a scientific abstract, presentation of data, critical discussion and drawing conclusion
Keeping appropriate laboratory records

Interdisciplinary

Students will use tools from physics, mathematics and computer science to address a biological problem.

Subject specific skills

Critical appraisal of source material
Advanced laboratory techniques in microscopy, molecular biology & biochemistry to acquire data
Analysis of data, including quantitative image analysis and statistical analysis
Construction of scientific arguments based on multiple sources
Production of a scientific abstract, presentation of data, critical discussion and drawing conclusion
Keeping appropriate laboratory records

Transferable skills

Critical appraisal of source material
Self directed learning
Adult learning
Public speaking

Study

Study time

Type	Required
Tutorials	3 sessions of 1 hour (1%)
Project supervision	20 sessions of 1 hour (9%)
Placement	189 hours (89%)
Total	212 hours

Private study description

No private study requirements defined for this module.

Costs

Category	Description	Funded by	Cost to student
Equipment and project costs	research consumables for the project	Department	£0.00

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			
Project overview talk	20%	20 hours	No

Students will present their project in the form of a brief oral communication, explaining the rationale and background for the project and their approach so that it is accessible to non-specialists. They will be expected to answer a couple of questions from the audience.

Reassessment component is the same

Assessment component			
Thesis	64%	48 hours	Yes (extension)

Students write a 6,000 word thesis including an abstract, introduction, methodology, results, and discussion.

Reassessment component is the same

Assessment component			
Laboratory performance and research record	16%	20 hours	Yes (extension)

Students get marked for their laboratory performance (practical competence, initiative, independence, originality, commitment and organisation). They submit their lab book / research record that documents their work throughout the project as evidence.

Reassessment component is the same

Feedback on assessment

Written feedback on thesis and project performance, verbal feedback from tutor and peers for oral presentation

Availability

Anti-requisite modules

If you take this module, you cannot also take:

- MD3A2-45 MD3A2-45 Integrated Science Research Project

Courses

This module is Core optional for:

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

This module is Core option list A for:

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