# MD4A1-90 Integrated Science Research Project

#### 21/22

Department Warwick Medical School Level Taught Postgraduate Level Module leader Andrew McAinsh Credit value 90 Module duration 24 weeks Assessment 100% coursework Study location University of Warwick main campus, Coventry

# Description

# Introductory description

MD4A1-90 - Integrated Science Research Project

# Module aims

The module aims to enable students to perform original high quality research at the forefront of a field and be exposed to a cutting edge research environment.

To develop students' ability to produce and communicate a substantial, independent piece of work drawing on skills from at least two disciplines.

# **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.

To undertake a scientific research project in a laboratory environment incorporating the following aspects:

- Experimental Design
- Execution of experimental protocols
- Keeping records of methods, data and other observations in laboratory notebooks
- Quantitative analysis of data
- Reporting and interpreting research data

#### Learning outcomes

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

- Independently formulate a scientific hypothesis and demonstrate advanced skills in designing, planning and executing experiments to test the hypothesis.
- Integrate methods and thinking from different disciplines as applied to their project work.
- Produce and communicate an extended critical appraisal of the current scientific literature to evaluate the limitations of research evidence
- Demonstrate advanced skills in data interpretation and critical appraisal to relate results to the scientific literature.
- Write in the format of an academic article for an appropriate scientific journal and present work orally in the format of a seminar-style presentation

# Indicative reading list

Each project will focus on a different research question. Therefore, bibliography is not specified as it will depend on the topic and nature of the research project and will be guided by the allocated supervisor who will provide students with an appropriate list of reviews and original research manuscripts.

For general working in the lab we recommend reading:

At the Bench: A Laboratory Navigator, Updated Edition By Kathy Barker, The Institute for Systems Biology, Seattle © 2005 • 465 pp., illus., appendices, index ISBN 978-087969708-2

# Subject specific skills

Independently formulate a scientific hypothesis and demonstrate advanced skills in designing, planning and executing experiments to test the hypothesis.

# Transferable skills

Integrate methods and thinking from different disciplines as applied to their project work. Produce and communicate an extended critical appraisal of the current scientific literature to evaluate the limitations of research evidence.

Demonstrate advanced skills in data interpretation and critical appraisal to relate results to the scientific literature.

Write in the format of an academic article for an appropriate scientific journal and present work

#### Study

#### Study time

Туре	Required
Seminars	24 sessions of 3 hours (8%)
Project supervision	24 sessions of 1 hour (3%)
Supervised practical classes	24 sessions of 4 hours (11%)
Private study	708 hours (79%)
Total	900 hours

#### **Private study description**

Self-directed study and laboratory research: 708 hours

#### 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 A

	Weighting	Study time	Eligible for self-certification
Assessment component			
Structured Dissertation	80%		Yes (extension)
Reassessment component is the same			
Assessment component			
Oral Presentation	20%		Yes (extension)
Oral presentation			

Reassessment component is the same

#### Feedback on assessment

Students will be offered formative feedback from the laboratory supervisor throughout the project. The written dissertation and oral presentation will be marked using standardised rubrics, which will provide feedback to the students (including individualised feedback) in line with WMS assessment criteria (including submission to Plagiarism software). Further verbal feedback will be available to students on request.

#### Availability

#### Courses

Course availability information is based on the current academic year, so it may change. This module is Core for:

• Year 4 of UMDA-CF10 Undergraduate Integrated Natural Sciences (MSci)