Module Definition Form (MDF)

Module code: MOD005464	**Version:** 6 **Date Amended:** 12/Sep/2023

1. Module Title
Biological Research Skills

2a. Module Leader
Andrew Smith

2b. School
School of Life Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
5

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions			
Type	**Module Code**	**Module Name**	**Condition**
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	BSc (Hons) Zoology BSc (Hons) Zoology (with sandwich year) BSc (Hons) Zoology (extended degree) BSc (Hons) Marine and Terrestrial Conservation BSc (Hons) Marine and Terrestrial Conservation (with sandwich year) BSc (Hons) Marine and Terrestrial Conservation (extended degree) BSc (Hons) Animal Behaviour BSc (Hons) Animal Behaviour (extended degree) BSc (Hons) Life Sciences		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description
Learn how to plan research projects in preparation for the rest of your studies. These skills will be key to your final year where you will develop your own research project. You will be introduced to the knowledge and skills needed to ask critical biological questions and plan a project to discover the answers in a scientifically valid, ethical and safe way, through lectures. You will then consolidate your knowledge and practice what you have learnt during hands-on workshops. The quantitative, communication, critical thinking and IT skills that you'll gain from this module are applicable to a wide range of graduate employment opportunities.

6b. Outline Content

Develop a conceptual framework (how to ask and answer questions including developing research hypotheses and predictions where appropriate)

Manage a project to fit time scales

Work safely and follow risk assessment procedures.

Appreciate the history and importance of research ethics and following ethical approval procedures

Understand data, design research and plan analyses

Distinguish statistical and biological significance (using effect sizes and their confidence intervals)

Manage and clean data (from raw data to working files to files used in analyses)

Conduct analyses involving more than two variables using the

Apply Generalized Linear Model using SPSS or R

Present data (statistical reporting, graphs and tables)

Interpret data (in the context of the appropriate conceptual framework)

Critically evaluate your own work and that of others

Communicate biological research through report writing and other (e.g. oral, posters, repositories, media, and social media)

Identify (non-intellectual) impact

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

Computer facility and software (Excel, SPSS and R). Supporting material available through the intranet and/or module website.

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Critically review the scientific literature to develop a valid scientific question.
2	Knowledge and Understanding	Plan a programme of work incorporating appropriate and feasible methods needed to address a scientific question.
3	Intellectual, practical, affective and transferrable skills	Apply the principles of appropriate project management, including risk minimisation (ethics and health and safety), planning of timescales and budget, to a scientific research project.
4	Intellectual, practical, affective and transferrable skills	Analyse, interpret and present data using the appropriate scientific conventions and methods.

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2025/6	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	22	1-4	11 x 2 hrs active learning
Other teacher managed learning	11	1-4	11 x 1hr Supervisor-led support for project preparation
Student managed learning	117	1-4	Background reading, online activities, preparation for lectures and practicals, and completion of assessments
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1-4	60 (%)	Fine Grade	30 (%)
Coursework. Reflection 2000 word Project Plan					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	3-4	40 (%)	Fine Grade	30 (%)
Coursework. In class test 1000 word equivalent.					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]