Research Methods

Module Information

2022.01, Approved

Summary Information

Module Code	7107NATSCI
Formal Module Title	Research Methods
Owning School	Biological and Environmental Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Biological and Environmental Sciences

Learning Methods

Learning Method Type	Hours
Lecture	2
Online	2
Workshop	38

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	The aim of this module is to provide extensive training in generic research knowledge and statistical techniques for the Natural Sciences as part of the preparation for the MSc dissertation.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design a research grant proposal around a research question: logistics, funding, timetabling, ethics, background.
MLO2	2	Identify and discuss the impact of their study – both academically and non-academically.
MLO3	3	Determine appropriate analytical methods for their project, including data collection.
MLO4	4	Present ideas in written format suitable for scientific communications by placing the research project into the broader context of the field, including logistics, dissemination and budget.

Module Content

Outline Syllabus	1) The scientific method: Inquiry, parsimony. Observation, problem, hypothesis, methods, results, conclusion, communication. 2) Project logistics. Sample, funding, remaining flexible, timeline, ethics, 3) Ethics, data protection and intellectual property. Managing research data.4) Library Databases research, Endnote. 5) Presenting posters and presentations – the good and the bad. Publishing – where? Impact factor, quartiles, citation index, R index. Where should I present and why? Authorship order and acknowledgements. How to prepare a manuscript.6) Communicating your work outside academia: Creating website, blog, podcast. Use of social media. Use of media.7) Developing a research question. Developing ideas. Open and close ended questions. Bias. Read articles and narrow it down. Brainstorming. Feasibility. 8) Grant applications (assessment). Includes: measuring impact.9) CV writing, applying for jobs. Making yourself employable.10) Statistics. What is data. Statistical analyses and manipulating data in SPSS. Intro to other packages (R, etc.)
Module Overview	This module provides extensive training in generic research knowledge and statistical techniques for the Natural Sciences. It aims to: provide you with a broad appreciation of research methods and methodology including an understanding of the uses and limitations of different research methods teach you how to design and execute a research project keeping in mind feasibility, ethics, data protection, and project logistics and funding
Additional Information	The aim of this module is to provide extensive training in generic research knowledge and statistical techniques for the Natural Sciences. It will provide the student with a broad appreciation of research methods and methodology including an understanding of the uses and limitations of different research methods. It will teach the students how to design and execute a research project keeping in mind feasibility, ethics, data protection, and project logistics and funding. In addition, attention will be given to dissemination to both academic and non-academic audiences: from writing academic manuscripts to creating blogs and speaking to the media. Univariate and multivariate statistics will be taught by lectures and online exercises, and students will be introduced to statistical software packages such as SPSS and R.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping

Report	Full grant application.	100	0	MLO1, MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Carlo Meloro	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings