

Module Information

2022.02, Approved

Summary Information

Module Code	7020DATSCI
Formal Module Title	Research Methods in Data Science
Owning School	Astrophysics Research Institute
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Astrophysics Research Institute

Learning Methods

Learning Method Type	Hours
Lecture	24
Seminar	16

Module Offering(s)

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

Aims and Outcomes

Aims	The module aims to equip students with the research skills necessary to undertake their dissertation project, including the preparation of a research proposal or business case for the activity (depending on the academic/industrial context), consideration of ethical and legal issues, literature review, selection of an appropriate methodology and data set, oral and written presentation skills and project management.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Analyse the legal and ethical issues surrounding prior and proposed experiments in data science.
MLO2	2	Synthesize the results from the academic literature to evaluate outstanding research problems and effectively disseminate that information.
MLO3	3	Propose the creation of an innovative data science experiment following the theory and principals of research design and project management.

Module Content

Outline Syllabus	1. The scientific method and hypothesis testing 2. Data science methods and the data driven research approach 3. Data set and methodology selection 4. Legal and ethical issues in research and data science 5. Bias and unintended consequences in data science 6. Privacy and security 7. Project management 8. Version control 9. Teamwork and conflict resolution 10. Research dissemination (papers, proceedings, conferences, seminars) 11. Conducting a literature search 12. Presenting your research - oral and written communications 13. Developing a Research Proposal 14. Developing a Business Case 15. Career Development
Module Overview	This module aims to equip you with the research skills necessary to undertake your dissertation project. It covers the preparation of a research proposal or a business case (depending on the academic/industrial context), consideration of ethical and legal issues, literature review, oral and written presentation skills and project management.
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Test	Paper Review	50	3	MLO1, MLO2
Presentation	Project Proposal	50	0.5	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Iain Steele	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings