

Research Methods

Module Information

2022.01, Approved

Summary Information

Module Code	7505MSIDL
Formal Module Title	Research Methods
Owning School	Engineering
Career	Postgraduate Taught
Credits	10
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	12
Online	1
Tutorial	5

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-CTY	CTY	April	12 Weeks
JAN-CTY	CTY	January	12 Weeks
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	The aims of this module are to develop the students' ability to formulate a coherent and well-designed research project and associated proposal. The module also aims to develop the skills required to critically analyse and evaluate research findings and the effective presentation of the results.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically review/analyse and reflect on the work of other practitioners/researchers
MLO2	2	Formulate research questions or hypothesis and develop a research plan and deliver a fully developed research proposal
MLO3	3	Extract results from industrial data/surveys/empirical work/computer based models and undertake critical evaluation of results using appropriate statistical analysis techniques and appropriate significance tests
MLO4	4	Present research findings according to appropriate conventions and demonstrate critical analysis and the development of coherent conclusions

Module Content

Outline Syllabus	Introduction to search methods for literature Development of a research question or hypothesis Styles and conventions associated with technical writing, presentations and speaking to technical audiences including the presentation of technical results relevant to the subject discipline Strategies for the design of experimental or other investigations, including statistical considerations so as to ensure the significance of the findings through application of the most appropriate statistical tests and software tools Data handling using suitable software tools, qualitative and quantitative analysis of results using appropriate robust scientific methods Management of project risk and uncertainty Research ethics, data protection, health and safety considerations and responsibilities others Development of critical analysis skills, robust formulation of dependable conclusions resulting in the need for recommendations for further work
Module Overview	
Additional Information	The module is very important as it sets the groundwork for the completion of the MScProject. The module provides grounding in the skills required to formulate a project question or hypothesis and the development of credible project plan for the resulting investigation(s). The module will explore techniques for the design of interviews/surveys/empirical work/computer simulation and visualisation/design testing and provide underpinning knowledge to aid the selection of the most appropriate statistical methods and data analysis tools. Tools for considering and mitigating against risk and uncertainties will also be explored. An important part of the module will look at the statistical treatment of project results, their critical evaluation, questioning validation and reliability. The module is delivered via distance learning, described as follows: Lecture: Slides and slide notes for self-study. Tutorial: Online activities and exercises with teacher feedback. Virtual classrooms. Email support. Online: summative tests

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Portfolio	Literature Review and Research	95	0	MLO1, MLO2, MLO3, MLO4
Portfolio	Test	5	0	MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Robyn Pyne	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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