Module Proforma

Approved, 2022.02

Summary Information

Module Code	7020MSC
Formal Module Title	Research Methods
Owning School	Engineering
Career	Postgraduate Taught
Credits	10
Academic level	FHEQ Level 7
Grading Schema	50

Module Contacts

Module Leader

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

Module Team Member

Contact Name	Applies to all offerings	Offerings
Chia-Hsun Chang	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	6
Online	6
Tutorial	6

Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	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.

Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Critically review/analyse and reflect on the work of other practitioners/researchers
MLO2	Formulate research questions or hypothesis and develop a research plan.
MLO3	Extract results from sources such as industrial data/surveys/empirical work/computer based models and undertake critical evaluation using appropriate statistical analysis techniques and appropriate significance tests
MLO4	Synthesise a fully developed research proposal according to appropriate conventions containing introduction, literature review and evaluation of previous work and a project plan

Module Content

Outline Syllabus
Introduction to search methods for literatureDevelopment of a research question or hypothesisStyles and conventions associated with technical writing, presentations and speaking to technical audiences including the presentation of technical results relevant to the subject disciplineStrategies 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 toolsData handling using suitable software tools, qualitative and quantitative analysis of results using appropriate robust scientific methodsManagement of project risk and uncertaintyResearch ethics, data protection, health and safety considerations and responsibilities othersDevelopment 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.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Portfolio	Portfolio of VLE tests	40	0	MLO3
Report	Literature Review and Research	60	0	MLO4, MLO3, MLO1, MLO2