

Liverpool John Moores University

Title: Research Planning and Quantitative Methods
Status: Definitive
Code: **5036MAR** (116862)
Version Start Date: 01-08-2019

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Charles Roberts	Y

Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 60
Total Learning Hours: 240 **Private Study:** 180

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	26
Practical	10
Seminar	12
Tutorial	10

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Rpt	Report	20	
Exam	Exam	Exam	30	2
Portfolio	Port	Portfolio	50	

Aims

To provide academic study techniques necessary for higher levels of learning. Within this aim, to introduce the major models of management science/operations research and indicate their practical application to business problems.

Learning Outcomes

After completing the module the student should be able to:

- 1 Prepare to undertake a self directed programme of academic learning
- 2 Demonstrate knowledge of broad application of management science to business environment
- 3 Formulate, use and interpret a variety of quantitative models
- 4 Conduct a literature search and review.
- 5 Effectively communicate academic information

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Report	3		
Exam	2		
Portfolio	1	4	5

Outline Syllabus

Project planning and role of quantitative methodologies.

Discussion of mathematical formulation of decision problems under resource constraints.

Introduction of OR/MS models, in particular linear programming, networks analysis, queues. Statistical concepts in support of OR/MS modelling. Use of computer packages in solving OR problems; interpretation of output.

Application of OR/MS in business and its validity. Limited case study and evaluation.

Literature searches and reviews. Academic writing. Formulation of Aim and Objectives

Primary and secondary data and methods of obtaining same. Writing research/project proposals. Interview techniques. Analytical methods and applications

Formatting of written reports. Dissertation structure and layout. Presentation techniques. Personal development planning.

Learning Activities

Integrated series of formal lectures, computer-based tutorials, group work and presentation seminars.

Notes

Develops the research and personal skills of the student and provides academic study techniques necessary for higher levels of learning. It makes specific reference to quantitative techniques. Operations research models are introduced and specific algorithms are used to illustrate problem solving strategies. The relationship is established between the various models and computer packages used in their solution.