Liverpool John Moores University

Title:	Operations Research
Status:	Definitive
Code:	**7052MAR** (120366)
Version Start Date:	01-08-2016

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

Team	Leader
Trung Thanh Nguyen	Y
Charles Roberts	

Academic Level:	FHEQ7	Credit Value:	10	Total Delivered Hours:	18
Total Learning Hours:	100	Private Study:	82		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	12
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	Online Ass	Weekly, time constrained online assignments	100	

Aims

To develop the student's ability to apply numerate operational research techniques to business problems.

Learning Outcomes

After completing the module the student should be able to:

1   Critically assess the applicability of different operational research techniques
2   Formulate and solve operational research problems in a variety of discipline areas
3   Develop and solve optimisation problems to aid management decision making

Learning Outcomes of Assessments

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

Weekly on line   1   2   3
assignments

Outline Syllabus

Modelling and solving business problems in mathematical programming: minimising cost and maximising profits.

Network models and applications:

- Network modelling and designing networks,
- Finding the least amount of travel/lines/cables to connect multiple locations.
- Finding the shortest transport route,
- Maximising amount of goods sent between locations.

Transportation models and applications:

- Dealing with product supplies and demands in multiple locations.
- Allocation of workers/machines to jobs
- Transhipment problems
- Production scheduling to meet future demands

Learning Activities

A programme of lectures supported by computer-based tutorials

Notes

This module introduces a set of fundamental techniques and tools to assist making better decisions in real world management/business problems. It will teach students how to model an operational problem in their business or organisation, how to select and apply a quantitative method to solve it, and how to interpret the results to make a better management decision.

Specific tools are used to illustrate solving strategies for business operation problems. The relationship is established between the various models and computer packages used in their solutions.