**Liverpool** John Moores University

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|---|---|
| Title: | Operational Research and Information Management |
| Status: | Definitive |
| Code: | **7033MAR** (118455) |
| Version Start Date: | 01-08-2016 |
| Owning School/Faculty: | Maritime and Mechanical Engineering |
| Teaching School/Faculty: | Maritime and Mechanical Engineering |

| Team | Leader |
|---|---|
| Alan Wall | Y |

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| **Academic Level:** | FHEQ7 | **Credit Value:** | 20 | **Total Delivered Hours:** | 39 |
| **Total Learning Hours:** | 200 | **Private Study:** | 161 | | |

**Delivery Options**
Course typically offered: Semester 2

| Component | Contact Hours |
|---|---|
| Lecture | 24 |
| Tutorial | 12 |

**Grading Basis:** 40 %

**Assessment Details**

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|---|---|---|---|---|
| Exam | Exam | | 70 | 3 |
| Essay | Assignment | | 30 | |

**Aims**

*To develop the student's ability to apply numerate operational research techniques to business problems and appraise the uses of satellite navigation and timing systems for the maritime and logistics industries.*

**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 maritime and logistics-related areas
3 Appraise different satellite navigation and timing services
4 Evaluate applications to transport and communication services

## Learning Outcomes of Assessments

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

| | | | |
|---|---|---|---|
| Examination | 1 | 3 | 4 |
| Assignment | 2 | | |

## Outline Syllabus

*Linear programming and derivatives (including Transportation technique), network analysis, queueing theory (including comparison with simulation), game theory.*

*Applications to transport and related areas of industry*

*Global Navigation Satellite Systems (GPS, Glonass, Galileo, Compass), simple DGPS, Wide area GPS (WAAS, EGNOS), EUROFIX, Regional satellite navigation/timing systems. Competitor terrestrial systems such as eLoran.*

*Transport applications of navigation, tracking, timing and monitoring systems.*

## Learning Activities

Lectures and class based tutorials. Use will also be made of operational research teaching software to aid student learning and students will also be made familiar with Microsoft Project or equivalent software.

## Notes

This module allows students on Maritime and Logistics Masters programmes to obtain an in-depth critical understanding of the use of IT-based systems within their relevant industry and apply management science techniques to the solution of problems.