Programme Specification and Curriculum Map for *MSc Operational Research*

1. Programme title	MSc Operational Research
2. Awarding institution	Middlesex University
3. Teaching institution	Middlesex University
4. Programme accredited by	
5. Final qualification	MSc Operational Research
6. Academic year	2014-15
7. Language of study	English (UK)
8. Mode of study	Full time

9. Criteria for admission to the programme

For admission onto this programme, applicants will have a first degree or equivalent with a minimum lower second in a subject area with a high quantitative content. This includes, but is not limited to, Mathematical Sciences, Physical Sciences, Computer Sciences, Engineering, Economics and Finance. Alternatively, applicants may enter the programme with a suitable professional qualification with evidence of quantitative ability.

Non-UK students must demonstrate an appropriately good command of English, as evidenced by a score of at least 6.5 on the IELTS test, or recognised equivalent.

10. Aims of the programme

The programme aims to:

- provide students with a thorough grounding in the fundamental concepts, techniques and tools of operational research;
- develop advanced skills in critical evaluation, quantitative and statistical analysis and communication with non-specialists;
- develop students' knowledge and understanding of the practical applications of analytic methods;
- provide students with the analytic and communication skills sought by employers.

11. Programme outcomes

A. Knowledge and understanding On completion of this programme the successful student will have knowledge and understanding of: A1 Key concepts and tools in operational research; A2 Current theory and practice of key analytical methods in decision-making and problem solving; A3 The strengths and limitations of operational research techniques,	**Teaching/learning methods** Students gain knowledge and understanding through a combination of lectures, practical computer lab sessions, directed reading, independent study, coursework and research. **Assessment methods** Students' knowledge and understanding is assessed by a combination of individual and collaborative coursework, presentations, examinations and project

including statistical and simulation methods; A4 The role of operational research in the external context of business, government and industry; A5 Methods, techniques and theoretical perspectives deployed in relevant research and scholarship.	work.
B. Cognitive (thinking) skills On completion of this programme the successful student will be able to: B1 Critically evaluate operational research concepts, theories, models and techniques; B2 Select and apply appropriate operational research models and tools for real world problems and critically evaluate their impact in business, government and industry; B3 Exercise critical judgement in the development of hypotheses or in analysing flaws in reasoning; B4 Synthesise information from multiple sources, evaluate options and reach justifiable conclusions in relation to problem solving and decision-making; B5 Analyse and develop analytical techniques and tools for organisational and operational problem solving.	**Teaching/learning methods** Students learn cognitive skills through a combination of lectures, practical computer lab sessions, directed reading, independent study, facilitated discussion, coursework and research. Analyses and critical thinking are strengthened through participation in lectures and seminars, and independent study. Formative and post-assessment feedback is provided on all assessed coursework. **Assessment methods** Students' cognitive skills are assessed by a combination of individual and collaborative coursework, presentations, examinations and project work.
C. Practical skills On completion of the programme the successful student will be able to: C1 Formulate analyse and solve practical organisational and operational problems using appropriate analytical, numerical, computational and comparative techniques; C2 Effectively organise, present and interpret quantitative information and results of statistical analyses; C3 Evaluate complex material and use it to present reasoned arguments to support decisions based on the results of analysis and modelling of data; C4 Deploy a range of communication and interpersonal skills; C5 Undertake substantial research in the context of operational research, problem solving and decision-making	**Teaching/learning methods** Students learn practical skills through participation in workshops, seminars, guided discussions, individual and collaborative work and independent study. . **Assessment methods** Students' practical skills are assessed by individual coursework, presentations, lab coursework examinations and project work.

12. Programme structure (levels, modules, credits and progression requirements)
12. 1 Overall structure of the programme
See page 12

12.2 Levels and modules

Starting in academic year 2010/11 the University is changing the way it references modules to state the level of study in which these are delivered. This is to comply with the national Framework for Higher Education Qualifications. This implementation will be a gradual process whilst records are updated. Therefore the old coding is bracketed below.

Level 7 (4)

COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: MSO4511 MSO4512 MSO4513 MSO4514 MSO4991	Students must also choose two from the following: MSO4345 MSO4351 MSO4522	Students must pass 120 credits to progress to the dissertation

12.3 Non-compensatable modules

Module level	***Module code***
N/A	

13. Curriculum map

See below.

14. Information about assessment regulations

Middlesex University Assessment Regulations apply to this programme, without exception.

15. Placement opportunities, requirements and support (if applicable)

16. Future careers (if applicable)

The programme develops students' knowledge, skills and capabilities to an advanced level in operational research. These attributes are sought after in a variety of public and private sector organisations, and this programme will prepare them for key positions at a strategic or decision-making level.

As a result of the enhancement of students' independent problems solving and decision-making abilities during the programme, graduates are also better equipped for entrepreneurial activity.

For students who have taken a career break to continue their formal education, this programme will enhance opportunities for career progression.

17. Particular support for learning (if applicable)

- Specialise software and database resources
- Induction and orientation programme
- English Language Support and Numeracy support offered by the Learner Development Unit
- Access to student counsellors
- Virtual Learning Environment

18. JACS code (or other relevant coding system)	G200
19. Relevant QAA subject benchmark group(s)	Mathematics, Statistics and Operational Research

20. Reference points

- QAA Guidelines for programme specifications
- QAA Qualifications Framework
- Middlesex University Regulations
- Middlesex University Learning Framework – Programme Design Guidance, 2012

21. Other information

Please note programme specifications provide a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve if s/he takes full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the rest of your programme handbook and the university regulations.