

MC-SCIMAN Master of Operations Research and Management Science

Year and Campus:	2011 - Parkville
CRICOS Code:	062189B
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Graduate/Postgraduate
Duration & Credit Points:	200 credit points taken over 24 months full time. This course is available as full or part time.
Coordinator:	Professor Peter Taylor taylorpg@unimelb.edu.au
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Course Overview:	<p>The Master of Operations Research and Management Science teaches students how to employ mathematical models and other analytical methods to help make better business management decisions. Using stochastic models, simulation, statistics and forecasting methods, students will be able to design measures of performance and reliability, understand the key drivers of system behaviour, predict future trends, manage large-scale interacting systems, control complex planning, scheduling and operational processes and help to maximise profits and efficiency.</p> <p>The range of topics include:</p> <ul style="list-style-type: none"> # Mathematics of Risk # Optimisation for Industry # Business Forecasting # Project Management # Systems Modelling and Simulation <p>This professional entry program offers students the opportunity to undertake core science studies as well as professional tools modules that provide high-level training in areas of business, communications and science applications.</p>
Objectives:	<p>After completing this course students will:</p> <ul style="list-style-type: none"> # have learned how basic techniques in operations research are applied in industry; # understand how to turn an industrial problem into a mathematical formulation; # know how to solve important mathematical optimisation problems arising in industrial framework; # be familiar with the most commonly used mathematical models and be able to apply them in various situations; and # be able to estimate the values of parameters that drive models from statistical data and have an appreciation of the uncertainty in those estimates.
Course Structure & Available Subjects:	<p>Course structure (all subjects are 12.5 points each, total points: 200)</p> <p>Discipline Core (62.5 credit points)</p> <p>MAST90014 Optimisation for Industry MAST90009 Business Forecasting BUSA90470 Cases in Business Modelling MAST90050 Scheduling and Optimisation MAST90051 Mathematics of Risk</p> <p>Discipline Electives (62.5 credit points)</p> <p>Students choose 5 from:</p> <p>MGMT90026 Supply Chain Management</p>

ISYS90036 Enterprise Systems
 SINF90004 Data Warehousing
 COMP90038 Algorithms and Complexity
 MAST90013 Network Optimisation
 MAST90027 The Practice of Statistics
 MAST90061 Modern Statistical Methods

Professional Skills (Compulsory) Core (50 credit points)

Core pair of subjects:
 MGMT90110 Organisational Fundamentals
 MKTG90004 Marketing Management
 Or:
 BUSA90403 Business Tools: Money, People and Processes
 BUSA90471 Business Tools: The Market Environment
 And:
 MAST90045 Systems Modelling and Simulation
 SKIL90004 Project Management in Science

Professional Skills Electives (25 credit points)

Students choose 2 from:
 ECON90015 Managerial Economics
 FNCE90055 Financial Decision Making
 SCIE90006 Scientists, Communication and the Workplace
 MULT90012 Industry Project in Science

Up to two third-year level undergraduate subjects will be allowed as discipline electives to meet prerequisite/assumed knowledge requirements.

Subject Options:

Discipline Core

Subject	Study Period Commencement:	Credit Points:
MAST90014 Optimisation for Industry	Semester 1	12.50
MAST90009 Business Forecasting	Semester 2	12.50
BUSA90470 Cases in Business Modelling	Semester 1	12.50
MAST90050 Scheduling and Optimisation	Not offered 2011	12.50
MAST90051 Mathematics of Risk	Not offered 2011	12.50

Discipline Electives

Students choose 5 from:

Subject	Study Period Commencement:	Credit Points:
MGMT90026 Supply Chain Management	Semester 1	12.50
ISYS90036 Enterprise Systems	Not offered 2011	12.50
SINF90004 Data Warehousing	Not offered 2011	12.50
COMP90038 Algorithms and Complexity	Not offered 2011	12.50
MAST90013 Network Optimisation	Semester 2	12.50
MAST90027 The Practice of Statistics	Not offered 2011	12.50
MAST90061 Modern Statistical Methods	Semester 2	12.50

Professional Skills (Compulsory) Core

Subject	Study Period Commencement:	Credit Points:
MGMT90110 Organisational Fundamentals	Semester 1, Semester 2	12.50

	MKTG90004 Marketing Management	Summer Term, Semester 1, Semester 2	12.50
	BUSA90403 Business Tools: Money People & Processes	Semester 2	12.50
	BUSA90471 Business Tools: The Market Environment	Semester 1	12.50
	MAST90045 Systems Modelling and Simulation	Semester 1	12.50
	SKIL90004 Project Management in Science	Not offered 2011	12.50
Professional Skills Electives			
	Subject	Study Period Commencement:	Credit Points:
	ECON90015 Managerial Economics	Semester 1, Semester 2	12.50
	FNCE90055 Financial Decision Making	Semester 1, Semester 2	12.50
	SCIE90006 Scientists, Communication & the Workplace	Not offered 2011	12.50
	MULT90012 Industry Project in Science	Not offered 2011	12.50
Entry Requirements:	A bachelor degree in an appropriate discipline including mathematics, statistics and operations research, engineering, information technology, computing, commerce or business, with at least H3 (65%) in the major or equivalent. As part of their degree studies, applicants must have completed an appropriate sequence of mathematics and statistics or related subjects to at least second year level.		
Core Participation Requirements:	The Master of Operations Research and Management Science welcomes applications from students with disabilities. It is University and degree policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the degree. The Master of Operations Research and Management Science requires all students to enrol in subjects where they will require: (1) the ability to comprehend complex science and technology related information; (2) the ability to clearly and independently communicate a knowledge and application of science, and technology principles and practices during assessment tasks; (3) the ability to actively and safely contribute in clinical, laboratory, and fieldwork/excursion activities. Students must possess behavioural and social attributes that enable them to participate in a complex learning environment. Students are required to take responsibility for their own participation and learning. They also contribute to the learning of other students in collaborative learning environments, demonstrating interpersonal skills and an understanding of the needs of other students. Assessment may include the outcomes of tasks completed in collaboration with other students. There may be additional inherent academic requirements for some subjects, and these requirements are listed within the description of the requirements for each of these subjects. Students who feel their disability will impact on meeting this requirement are encouraged to discuss this matter with the relevant Subject Coordinator and the Disability Liaison Unit: http://www.services.unimelb.edu.au/disability/		
Graduate Attributes:	Graduates will: have the ability to demonstrate advanced independent critical enquiry, analysis and reflection; have a strong sense of intellectual integrity and the ethics of scholarship; have in-depth knowledge of their specialist discipline(s); reach a high level of achievement in writing, project activities, problem-solving and communication; be critical and creative thinkers, with an aptitude for continued self-directed learning; be able to examine critically, synthesise and evaluate knowledge across a broad range of disciplines; have a set of flexible and transferable skills for different types of employment; and be able to initiate and implement constructive change in their communities, including professions and workplaces.		
Links to further information:	http://graduate.science.unimelb.edu.au		