

R05 PM Master of Science (Management Science)

Year and Campus:	2009
Overview:	<p>The Master of Science (Management Science) uses 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 give statistical 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, which provide high-level training in areas of business, communications and science applications.</p> <p>Course structure (<i>all subjects are 12.5 points each, total points: 200</i>)</p> <p>Discipline Core (62.5 points)</p> <p>Students must take:</p> <ul style="list-style-type: none"> o Mathematics of Risk (this subject will not be offered until semester 1, 2010), plus o 620-616 Optimisation for Industry, plus o 600-655 Business Forecasting, plus o Cases in Business Modelling (this subject will not be offered until semester 2, 2010), plus o Scheduling and Optimisation (this subject will not be offered until semester 1, 2010). <p>Discipline Elective (37.5 points)</p> <p>Students must take 3 of the following subjects:</p> <ul style="list-style-type: none"> o 325-679 Supply Chain Management, and/or o 325-695 Project Management, and/or o 615-657 Enterprise Systems, and/or o 615-691 Decision Support using ICT, and/or o 615-644 Data Warehousing, and/or o 433-679 Evolutionary and Neural Computation <p>Project Module (12.5 points)</p> <ul style="list-style-type: none"> o 600-611 Industry Project (this subject will not be available until semester 2, 2010) <p>Professional Tools Module (87.5 points)</p> <p><i>Professional Tools Core (87.5 points)</i></p> <p>Students must take:</p> <p><i>2 Business Tools Units</i></p> <ul style="list-style-type: none"> o 600-614 Business Tools: Money, People and Projects, plus o Business Tools: The Market Environment (this subject will not be offered until semester 1, 2010), plus <p><i>3 Science Tools Units</i></p> <ul style="list-style-type: none"> o 600-617 Systems Modelling and Simulation, plus o 600-615 Thinking and Reasoning with Data, plus o 600-618 Ethics and Responsibility in Science, plus <p><i>2 Communication Tools Units</i></p> <ul style="list-style-type: none"> o 600-619 Science and Communication, plus

	o 600-616 Science in Context																																															
Objectives:	<p>After completing this course students should:</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; • have gained the ability to pursue further studies in related areas; • understand the basic principles of the construction of time series models; • be able to analyse the properties of the models and produce predictions based on them; and • be familiar with the most commonly used models and be able to apply the models in various situations. 																																															
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Links to further information:	http://graduate.science.unimelb.edu.au/																																															
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