

Mathematics and Statistics

Year and Campus:	2013																											
Coordinator:	Prof Omar Foda																											
Contact:	Email: omar.foda@unimelb.edu.au (mailto:omar.foda@unimelb.edu.au)																											
Overview:	Entry Requirements: Prior studies in Mathematics and Statistics including at least two first year and three second or higher level subjects, with at least an H3 (65%) mark for each of the two best second or higher level subjects. If students have completed accelerated subjects then one fewer subject can be deemed appropriate.																											
Objectives:	The objectives of this diploma are to: <ul style="list-style-type: none"> # further the understanding of Mathematics and Statistics across a wide range of theoretical and practical topics; # encourage the development of abilities to think critically and independently; # provide a pathway for entry into graduate study in Mathematics and Statistics for students whose main undergraduate field of study was not Mathematics and/or Statistics. 																											
Structure & Available Subjects:	<p>The Mathematics and Statistics program consists of eight Coursework subjects only (100 points).</p> <p>Subjects are chosen from three sources.</p> <ol style="list-style-type: none"> 1. Advanced Discipline Subjects available to students enrolled into Master of Science (Mathematics and Statistics). The advanced discipline subjects are clustered into four areas: <ul style="list-style-type: none"> # Applied Mathematics & Mathematical Physics # Discrete Mathematics and Operations Research Specialisation # Pure Mathematics # Statistics & Stochastic Processes. 2. Students may choose MAST90045 Systems Modelling and Simulation. 3. Students may select up to four subjects from latter-year, normally third year, undergraduate Mathematics and Statistics subjects subject to Departmental Program Coordinator approval. 																											
Subject Options:	<p>Coursework</p> <p>Students usually take at least three advanced subjects from a single area.</p> <p>-</p> <p>Applied Mathematics and Mathematical Physics Specialisation</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MAST90064 Advanced Methods: Differential Equations</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90067 Advanced Methods: Transforms</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90026 Computational Differential Equations</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90066 Continuum Mechanics and Applications</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90011 Modelling: Mathematical Biology</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90060 Mathematical Statistical Mechanics</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MAST90065 Exactly Solvable Models</td> <td>Not offered 2013</td> <td>12.50</td> </tr> <tr> <td>MAST90069 Introduction to String Theory</td> <td>Not offered 2013</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MAST90064 Advanced Methods: Differential Equations	Not offered 2013	12.50	MAST90067 Advanced Methods: Transforms	Not offered 2013	12.50	MAST90026 Computational Differential Equations	Not offered 2013	12.50	MAST90066 Continuum Mechanics and Applications	Not offered 2013	12.50	MAST90011 Modelling: Mathematical Biology	Not offered 2013	12.50	MAST90060 Mathematical Statistical Mechanics	Semester 1	12.50	MAST90065 Exactly Solvable Models	Not offered 2013	12.50	MAST90069 Introduction to String Theory	Not offered 2013	12.50
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Discrete Mathematics and Operations Research Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90030 Advanced Discrete Mathematics	Not offered 2013	12.50
MAST90014 Optimisation for Industry	Not offered 2013	12.50
MAST90013 Network Optimisation	Not offered 2013	12.50
MAST90050 Scheduling and Optimisation	Not offered 2013	12.50
MAST90031 Enumerative Combinatorics	Not offered 2013	12.50
MAST90053 Experimental Mathematics	Not offered 2013	12.50

Pure Mathematics Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90012 Measure Theory	Not offered 2013	12.50
MAST90023 Algebraic Topology	Not offered 2013	12.50
MAST90025 Commutative and Multilinear Algebra	Not offered 2013	12.50
MAST90017 Representation Theory	Not offered 2013	12.50
MAST90068 Groups, Categories & Homological Algebra	Not offered 2013	12.50
MAST90029 Differential Topology and Geometry	Not offered 2013	12.50
MAST90020 Functional Analysis	Not offered 2013	12.50
MAST90056 Riemann Surfaces and Complex Analysis	Not offered 2013	12.50

Statistics and Stochastic Processes Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90062 Probability & Mathematical Statistics I	Not offered 2013	12.50
MAST90063 Probability & Mathematical Statistics II	Not offered 2013	12.50
MAST90009 Business Forecasting	Not offered 2013	12.50
MAST90051 Mathematics of Risk	Not offered 2013	12.50
MAST90059 Stochastic Calculus with Applications	Not offered 2013	12.50
MAST90061 Modern Statistical Methods	Not offered 2013	12.50
MAST90019 Random Processes	Not offered 2013	12.50
MAST90027 The Practice of Statistics	Not offered 2013	12.50

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Students may choose the following subject:

Subject	Study Period Commencement:	Credit Points:
MAST90045 Systems Modelling and Simulation	Not offered 2013	12.50

Links to further information:	http://graduate.science.unimelb.edu.au
Notes:	This program has a start-year and a mid-year intake.
Related Course(s):	Postgraduate Diploma in Science