Mathematics and Statistics

Year and Campus:	2012
Coordinator:	Prof Omar Foda
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Overview:	**Entry Requirements:** Prior study requires at least two first year and three second or higher level Mathematics and Statistics subjects. If students have completed accelerated subjects one fewer subject can be deemed appropriate.
Objectives:	The objectives of this diploma are to: # 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:	The Mathematics and Statistics program consists of eight Coursework subjects only (100 points). Subjects are chosen from three sources. 1. Advanced Discipline Subjects available to students enrolled into Master of Science (Mathematics and Statistics). The advanced discipline subjects are clustered into four areas: # 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 may be chosen from latter-year, normally third year, undergraduate Mathematics and Statistics subjects.
Subject Options:	**Coursework** Students usually take at least three advanced subjects from a single area. - **Applied Mathematics and Mathematical Physics Specialisation**

Subject	Study Period Commencement:	Credit Points:
MAST90064 Advanced Methods: Differential Equations	Not offered 2012	12.50
MAST90067 Advanced Methods: Transforms	Semester 1	12.50
MAST90026 Computational Differential Equations	Semester 1	12.50
MAST90066 Continuum Mechanics and Applications	Not offered 2012	12.50
MAST90011 Modelling: Mathematical Biology	Semester 2	12.50
MAST90060 Mathematical Statistical Mechanics	Not offered 2012	12.50
MAST90065 Exactly Solvable Models	Not offered 2012	12.50
MAST90069 Introduction to String Theory	Semester 2	12.50

Discrete Mathematics and Operations Research Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90030 Advanced Discrete Mathematics	Semester 2	12.50
MAST90014 Optimisation for Industry	Semester 1	12.50
MAST90013 Network Optimisation	Not offered 2012	12.50
MAST90050 Scheduling and Optimisation	Semester 2	12.50
MAST90031 Enumerative Combinatorics	Not offered 2012	12.50
MAST90053 Experimental Mathematics	Semester 1	12.50

Pure Mathematics Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90012 Measure Theory	Not offered 2012	12.50
MAST90023 Algebraic Topology	Semester 1	12.50
MAST90025 Commutative and Multilinear Algebra	Semester 1	12.50
MAST90017 Representation Theory	Not offered 2012	12.50
MAST90068 Groups, Categories & Homological Algebra	Semester 2	12.50
MAST90029 Differential Topology and Geometry	Not offered 2012	12.50
MAST90020 Functional Analysis	Semester 2	12.50
MAST90056 Riemann Surfaces and Complex Analysis	Not offered 2012	12.50

Statistics and Stochastic Processes Specialisation

Subject	Study Period Commencement:	Credit Points:
MAST90062 Probability & Mathematical Statistics I	Semester 1	12.50
MAST90063 Probability & Mathematical Statistics II	Semester 2	12.50
MAST90009 Business Forecasting	Not offered 2012	12.50
MAST90051 Mathematics of Risk	Semester 2	12.50
MAST90059 Stochastic Calculus with Applications	Not offered 2012	12.50
MAST90061 Modern Statistical Methods	Not offered 2012	12.50
MAST90019 Random Processes	Semester 1	12.50
MAST90027 The Practice of Statistics	Semester 2	12.50

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Students may choose the following subject:

Subject	Study Period Commencement:	Credit Points:
MAST90045 Systems Modelling and Simulation	Semester 1	12.50

	- Students may select up to four subjects may be chosen from latter-year, normally third year, undergraduate Mathematics and Statistics subjects. *subject to approval by the Departmental Program Coordinator. -
Links to further information:	http://graduate.science.unimelb.edu.au
Related Course(s):	Postgraduate Diploma in Science