

MC-SCIBIF Master of Science (Bioinformatics)

Year and Campus:	2012 - 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.																			
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Contact:	<p>Melbourne Graduate School of Science Faculty of Science The University of Melbourne</p> <p>Tel: + 61 3 8344 6128 Fax: + 61 3 8344 3351 Web: http://graduate.science.unimelb.edu.au (http://graduate.science.unimelb.edu.au/)</p>																			
Course Overview:	<p>The Master of Science (Bioinformatics) is a coursework masters degree incorporating a substantial research project.</p> <p>The Master of Science gives students the opportunity to undertake a substantive research project in a field of choice as well as a broad range of coursework subjects including a professional skills component, as a pathway to PhD study or to the workforce.</p>																			
Objectives:	<p>The objectives of this course are to provide students with:</p> <ul style="list-style-type: none"> # a broad education in bioinformatics with strong foundations in computer science, biology, and statistics; # significant experience in a specific area of bioinformatics; # ability to conduct independent research in bioinformatics; and # potential to proceed to a PhD degree. 																			
Course Structure & Available Subjects:	<p>Students undertaking the Master of Science - Bioinformatics program will complete 200 points comprising:</p> <ul style="list-style-type: none"> # Discipline subjects (137.5 points) including compulsory subjects listed for each specialisation plus electives; # Professional Skills subject (12.5 points) - SCIE90012 Science Communication; # Research Project (50 points), commencing in Semester 2. <p>Exemptions will be granted for students who have completed equivalent subjects in their undergraduate studies.</p>																			
Subject Options:	<p>First year Core - Biology/Biomedicine stream (for students with a biology / biomedicine background)</p> <p>Students must take:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MAST90057 Elements of Probability</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>COMP90041 Programming and Software Development</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>BINF90002 Elements of Bioinformatics</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MAST90058 Elements of Statistics</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>COMP90038 Algorithms and Complexity</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>		Subject	Study Period Commencement:	Credit Points:	MAST90057 Elements of Probability	Semester 1	12.50	COMP90041 Programming and Software Development	Semester 1, Semester 2	12.50	BINF90002 Elements of Bioinformatics	Semester 1	12.50	MAST90058 Elements of Statistics	Semester 2	12.50	COMP90038 Algorithms and Complexity	Semester 1, Semester 2	12.50
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BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
SCIE90012 Science Communication	Semester 2	12.50

and one 12.5 point elective subject selected in consultation with the Course Coordinator.

First year Core - Mathematics/Statistics stream (for students with a mathematics and statistics background)

Students must take:

Subject	Study Period Commencement:	Credit Points:
GENE90019 Genes Molecules and Cells	Semester 1	25
COMP90041 Programming and Software Development	Semester 1, Semester 2	12.50
BINF90002 Elements of Bioinformatics	Semester 1	12.50
PHYS90007 Principles of Physiology	Semester 2	12.50
COMP90038 Algorithms and Complexity	Semester 1, Semester 2	12.50
BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
SCIE90012 Science Communication	Semester 2	12.50

First year Core - Computer Science stream (for students with a computing background)

Students must take:

Subject	Study Period Commencement:	Credit Points:
GENE90019 Genes Molecules and Cells	Semester 1	25
MAST90057 Elements of Probability	Semester 1	12.50
BINF90002 Elements of Bioinformatics	Semester 1	12.50
PHYS90007 Principles of Physiology	Semester 2	12.50
MAST90058 Elements of Statistics	Semester 2	12.50
BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
SCIE90012 Science Communication	Semester 2	12.50

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Second year - All streams

Students must take:

Subject	Study Period Commencement:	Credit Points:
BINF90001 Statistics for Bioinformatics	Semester 1	12.50
BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
BINF90004 Bioinformatics Case Studies	Semester 2	12.50
COMP90014 Algorithms for Functional Genomics	Semester 2	12.50
BINF90006 Bioinformatics Research Project-25pts	Semester 1, Semester 2	25

and one of the following subjects:

	Subject	Study Period Commencement:	Credit Points:
	COMP90016 Computational Genomics	Semester 1	12.50
	BTCH90009 Genomics and Bioinformatics	Semester 1	12.50
and one 12.5 point elective subject selected in consultation with the Course Coordinator.			
Entry Requirements:	<p>An undergraduate degree with a major in biology, biomedicine, mathematics and statistics, or computer science, with at least an H3 (65%) in the major, or equivalent. Students should also have a background in calculus and computing.</p> <p>Quotas may be applied and preference may be given to applicants with evidence of appropriate preparation or potential to undertake research. Entry is subject to the capacity of a participating department to provide adequate supervision in a research project appropriate to the interests and preparation of the individual student and may be subject to the agreement of a member of academic staff to supervise the project module. Selection is not automatic and, in particular, is subject to competition.</p>		
Core Participation Requirements:	<p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a course are encouraged to discuss this with the relevant course coordinator and the Disability Liaison Unit.</p>		
Further Study:	<p>The Master of Science offers a pathway to a PhD.</p>		
Graduate Attributes:	<p>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, research or 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.</p>		
Links to further information:	<p>http://graduate.science.unimelb.edu.au/programs/msc/bioinfo.php</p>		