

## MC-SCIBIF Master of Science (Bioinformatics)

<b>Year and Campus:</b>	2016 - Parkville																			
<b>CRICOS Code:</b>	062189B																			
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>																			
<b>Level:</b>	Graduate/Postgraduate																			
<b>Duration &amp; Credit Points:</b>	200 credit points taken over 24 months full time. This course is available as full or part time.																			
<b>Coordinator:</b>	Dr Andrew Lonie Email: <a href="mailto:alonie@unimelb.edu.au">alonie@unimelb.edu.au</a>																			
<b>Contact:</b>	<p>Currently enrolled students:</p> <ul style="list-style-type: none"> <li># General information: <a href="https://ask.unimelb.edu.au">https://ask.unimelb.edu.au</a> (<a href="https://ask.unimelb.edu.au">https://ask.unimelb.edu.au</a>)</li> <li># <b>Contact Stop 1</b> (<a href="http://students.unimelb.edu.au/stop1">http://students.unimelb.edu.au/stop1</a>)</li> </ul> <p>Future students:</p> <ul style="list-style-type: none"> <li># Further information: <a href="http://science.unimelb.edu.au/">http://science.unimelb.edu.au/</a> (<a href="http://science.unimelb.edu.au/">http://science.unimelb.edu.au/</a>)</li> </ul>																			
<b>Course Overview:</b>	<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>																			
<b>Learning Outcomes:</b>	<p>The objectives of this course are to provide students with:</p> <ul style="list-style-type: none"> <li># a broad education in bioinformatics with strong foundations in computer science, biology, and statistics;</li> <li># significant experience in a specific area of bioinformatics;</li> <li># ability to conduct independent research in bioinformatics; and</li> <li># potential to proceed to a PhD degree.</li> </ul>																			
<b>Course Structure &amp; Available Subjects:</b>	<p>Students undertaking the Master of Science - Bioinformatics program will complete 200 points comprising:</p> <ul style="list-style-type: none"> <li># Discipline subjects (137.5 points) including compulsory subjects listed for each specialisation plus electives;</li> <li># Professional Skills subject (12.5 points);</li> <li># Research Project (50 points), commencing in Semester 2.</li> </ul> <p>Exemptions will be granted for students who have completed equivalent subjects in their undergraduate studies.</p>																			
<b>Subject Options:</b>	<p><b>First year Core - Biology/Biomedicine stream (for students with a biology / biomedicine background)</b></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
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																		

BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
---	------------------------	-------

and two 12.5 point elective subjects 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
COMP90038 Algorithms and Complexity	Semester 1, Semester 2	12.50
BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
PHYS20008 Human Physiology	Semester 1, Semester 2	12.50

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

**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
MAST90058 Elements of Statistics	Semester 2	12.50
BINF90007 Bioinformatics Research Project-12.5pts	Semester 1, Semester 2	12.50
PHYS20008 Human Physiology	Semester 1, Semester 2	12.50

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

**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
SCIE90013 Communication for Research Scientists	Semester 1	12.50

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
<b>Entry Requirements:</b>	<p><b>In order to be considered for entry, applicants must have completed:</b></p> <ul style="list-style-type: none"> <li>• an undergraduate degree in a discipline appropriate to the stream of the Master of Science into which entry is sought, with a weighted average mark of at least H3 (65%) in the best 50 points in appropriate discipline studies at third year; and</li> <li>• appropriate prerequisite studies for the stream into which entry is sought.</li> </ul> <p>For stream specific requirements please <b>click here</b> (<a href="http://science.unimelb.edu.au/available-stream-requirements">http://science.unimelb.edu.au/available-stream-requirements</a>) .</p> <p>-</p> <p>Meeting these requirements does not guarantee selection.</p> <p>In ranking applications, the Selection Committee will consider prior academic performance.</p> <p>The Selection Committee may seek further information to clarify any aspect of an application in accordance with the Academic Board <b>rules</b> (<a href="http://about.unimelb.edu.au/academicboard/resolutions">http://about.unimelb.edu.au/academicboard/resolutions</a>) on the use of selection instruments.</p> <p>Applicants are required to satisfy the university's <b>English language requirements for postgraduate courses</b> (<a href="http://www.policy.unimelb.edu.au/schedules/MPF1035-ScheduleA.pdf">http://www.policy.unimelb.edu.au/schedules/MPF1035-ScheduleA.pdf</a>) . For those applicants seeking to meet these requirements by one of the standard tests approved by the Academic Board, performance band 6.5 is required.</p> <p>-</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• Quotas may be applied to the degree as a whole, or to an individual stream, and preference may be given to applicants with evidence of appropriate preparation or potential to undertake research.</li> <li>• Entry into a stream of the Master of Science is subject to the capacity of the department(s) or schools(s) offering the program stream 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.</li> </ul>		
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.&lt;/p&gt; &lt;p&gt;It is University 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 University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>		
<b>Further Study:</b>	The Master of Science offers a pathway to a PhD.		
<b>Graduate Attributes:</b>	<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>		
<b>Links to further information:</b>	<a href="http://science.unimelb.edu.au/">http://science.unimelb.edu.au/</a>		