

# MC-ACTSCI Master of Actuarial Science

<b>Year and Campus:</b>	2011 - Parkville
<b>CRICOS Code:</b>	070382A
<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>	Professor David Dickson
<b>Contact:</b>	Graduate School of Business and Economics Level 4, 198 Berkeley Street Telephone: +61 3 8344 1670 <b>Online Enquiries</b> ( <a href="https://nexus.unimelb.edu.au/OnlineEnquiryForm.aspx?campaigncode=CMP-01278-SZ4C00&amp;cssurl=https://nexus.unimelb.edu.au/cssfiles/gsbe.css&amp;redirecturl=http://www.gsbe.unimelb.edu.au/contactus/nexus/mas.html">https://nexus.unimelb.edu.au/OnlineEnquiryForm.aspx?campaigncode=CMP-01278-SZ4C00&amp;cssurl=https://nexus.unimelb.edu.au/cssfiles/gsbe.css&amp;redirecturl=http://www.gsbe.unimelb.edu.au/contactus/nexus/mas.html</a> ) Web: <a href="http://www.gsbe.unimelb.edu.au">www.gsbe.unimelb.edu.au</a> ( <a href="http://www.gsbe.unimelb.edu.au/">http://www.gsbe.unimelb.edu.au/</a> )
<b>Course Overview:</b>	The overall aim of the Masters of Actuarial Science is to provide graduates who have a bachelor's degree that includes a strong mathematical component with a two-year program that provides a pathway to a professional actuarial career. Graduates of the degree will be well placed to undertake further graduate work in actuarial studies, or to enter the actuarial profession. The Master of Actuarial Science provides the fastest graduate pathway to professional entry to the actuarial profession.
<b>Objectives:</b>	<p><b>1. Learning Goal</b></p> <p>Graduates of this degree will be critical thinkers in relation to actuarial studies and related disciplines.</p> <p><b>Learning objectives to achieve this goal</b></p> <p>On successful completion of this degree students will be able to:</p> <ul style="list-style-type: none"> <li># Describe and explain the fundamental theories of actuarial science as they apply in life insurance, general insurance and superannuation;</li> <li># Assess the suitability of actuarial, financial and economic models in solving actuarial problems; and</li> <li># Interpret and critically evaluate articles in the actuarial research literature.</li> </ul> <p><b>2. Learning Goal</b></p> <p>Graduates of this degree will be analytical in the application of actuarial theory, knowledge, principles, techniques and data.</p> <p><b>Learning objectives to achieve this goal</b></p> <p>On successful completion of this degree students will be able to:</p> <ul style="list-style-type: none"> <li># Analyse actuarial data using advanced statistical techniques;</li> <li># Calculate quantities such as premiums, reserves and superannuation contribution rates using actuarial techniques; and</li> <li># Analyse real and hypothetical problems in insurance and superannuation.</li> </ul> <p><b>3. Learning Goal</b></p> <p>Graduates of this degree will be problem solvers capable of explaining, applying and critically evaluating the use of actuarial models, particularly in relation to insurance and superannuation.</p> <p><b>Learning objectives to achieve this goal</b></p> <p>On successful completion of this degree students will be able to:</p> <ul style="list-style-type: none"> <li># Describe the core areas of actuarial practice and relate to those areas actuarial principles, theories and models;</li> <li># Analyse and evaluate options in business decision making; and</li> <li># Critically analyse business decision making problems and apply relevant models and theories to generate effective solutions.</li> </ul>

<b>Course Structure &amp; Available Subjects:</b>	The degree is designed to be completed in two-years of full time study and requires completion of 200 points. The degree consists of 16 semester-length subjects comprising 8 compulsory core subjects and 8 elective subjects. It is recommended that students take four core and four elective subjects in both the first and second years of the program.																											
<b>Subject Options:</b>	<p><b>Core subjects</b>  <b>Students must take a total of eight core subjects:</b></p> <table border="1" data-bbox="392 349 1490 898"> <thead> <tr> <th data-bbox="392 349 1074 439">Subject</th> <th data-bbox="1074 349 1350 439">Study Period Commencement:</th> <th data-bbox="1350 349 1490 439">Credit Points:</th> </tr> </thead> <tbody> <tr> <td data-bbox="392 439 1074 495">ACTL90001 Mathematics of Finance I</td> <td data-bbox="1074 439 1350 495">Semester 1</td> <td data-bbox="1350 439 1490 495">12.50</td> </tr> <tr> <td data-bbox="392 495 1074 551">ACTL90002 Mathematics of Finance II</td> <td data-bbox="1074 495 1350 551">Semester 2</td> <td data-bbox="1350 495 1490 551">12.50</td> </tr> <tr> <td data-bbox="392 551 1074 607">ACTL90003 Mathematics of Finance III</td> <td data-bbox="1074 551 1350 607">Not offered 2011</td> <td data-bbox="1350 551 1490 607">12.50</td> </tr> <tr> <td data-bbox="392 607 1074 663">ACTL90004 Insurance Risk Models</td> <td data-bbox="1074 607 1350 663">Not offered 2011</td> <td data-bbox="1350 607 1490 663">12.50</td> </tr> <tr> <td data-bbox="392 663 1074 719">ACTL90005 Life Contingencies</td> <td data-bbox="1074 663 1350 719">Not offered 2011</td> <td data-bbox="1350 663 1490 719">12.50</td> </tr> <tr> <td data-bbox="392 719 1074 775">ACTL90006 Life Insurance Models I</td> <td data-bbox="1074 719 1350 775">Semester 1</td> <td data-bbox="1350 719 1490 775">12.50</td> </tr> <tr> <td data-bbox="392 775 1074 831">ACTL90007 Life Insurance Models 2</td> <td data-bbox="1074 775 1350 831">Semester 2</td> <td data-bbox="1350 775 1490 831">12.50</td> </tr> <tr> <td data-bbox="392 831 1074 887">ACTL90008 Statistical Techniques in Insurance</td> <td data-bbox="1074 831 1350 887">Not offered 2011</td> <td data-bbox="1350 831 1490 887">12.50</td> </tr> </tbody> </table> <p><b>Elective subjects</b>  <b>Eight electives to be taken from the Master of Management elective or foundation subject listings. Depending on the background of students entering the Masters degree, some students may also take subjects in probability and statistics.</b></p>	Subject	Study Period Commencement:	Credit Points:	ACTL90001 Mathematics of Finance I	Semester 1	12.50	ACTL90002 Mathematics of Finance II	Semester 2	12.50	ACTL90003 Mathematics of Finance III	Not offered 2011	12.50	ACTL90004 Insurance Risk Models	Not offered 2011	12.50	ACTL90005 Life Contingencies	Not offered 2011	12.50	ACTL90006 Life Insurance Models I	Semester 1	12.50	ACTL90007 Life Insurance Models 2	Semester 2	12.50	ACTL90008 Statistical Techniques in Insurance	Not offered 2011	12.50
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<b>Entry Requirements:</b>	<p>1. The Selection Committee will evaluate the applicant's ability to pursue the course successfully using the following criteria:</p> <ul style="list-style-type: none"> <li># An undergraduate or postgraduate degree with the equivalent of a major in mathematically based subjects;</li> <li># Performance on the Graduate Records Examination (GRE) unless the applicant has met one of the approved conditions for GRE exemption; and</li> <li># The applicant's submitted statement of intent in seeking entry.</li> </ul> <p>2. The Selection Committee may conduct interviews and tests and may call for referee reports or employer references to elucidate any of the matters referred to above.</p> <p>Note: Students who successfully complete the Postgraduate Diploma in Actuarial Science may be eligible to progress to the Master of Actuarial Science with 100 points credit.</p>																											
<b>Core Participation Requirements:</b>	<p>The Faculty of Business and Economics welcomes applications from students with disabilities. It is University and Faculty 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 Faculty's programs. The BCom and Masters degrees of the Faculty of Business and Economics equip graduates with the knowledge and technical skills necessary to understand and participate in the modern business world. The degrees include the following academic requirements for study: (1) The ability to explain and evaluate concepts, theories, institutional arrangements and operations of modern mixed economies; (2) The ability to critically evaluate the economy, commerce and business in the broader social and political context; (3) The ability to explain and apply concepts across a range of commerce and business disciplines in solving business and policy problems; and (4) The ability to contribute positively to the development of organisations and society in relation to business, government and the commercial professions. All students of the Faculty's courses must possess intellectual, ethical, and emotional capabilities required to participate in the full curriculum and to achieve the levels of competence required by the Faculty. Candidates for the BCom degree and for FBE Masters degrees must have abilities and skills in communication; in conceptual, integrative, and quantitative dimensions; and in behavioural and social dimensions. I. Communication: The student must be able to communicate effectively and efficiently in oral and/or written form. A student must have the ability to clearly and independently communicate knowledge and application of a discipline, principles or practices during assessment tasks, and in some discipline streams. II. Intellectual#Conceptual, Integrative and Quantitative Abilities: The student</p>																											

	<p>is expected to have the ability to develop problem-solving skills and demonstrate the ability to establish study plans and priorities. These abilities include measurement, calculation, reasoning, analysis, and synthesis. Problem solving requires all of these intellectual abilities. Students should also have the ability to comprehend complex disciplinary and cross disciplinary information related to the BCom and Masters degrees.</p> <p><b>III. Behavioural and Social Attributes:</b> A student must possess behavioural and social attributes that enable them to participate in a complex learning environment and the emotional health required for full utilisation of his/her intellectual abilities. Students are required to take responsibility for their own participation and learning. They also contribute to the learning of other students in collaborative learning environments, demonstrating interpersonal skills and an understanding of the needs of other students. Assessment may include the outcomes of tasks completed in collaboration with other students. Integrity, concern for others, interpersonal skills, interest, and motivation are all personal qualities that are deemed necessary for students enrolled in FBE courses. Students who feel their disability will prevent them from participating in tasks involving the inherent academic requirements of the BCom and FBE Masters courses are encouraged to contact the Disability Liaison Unit. Adjustments can be provided to minimise the impact of a disability, but students should participate in the course in an independent manner.</p>
<b>Graduate Attributes:</b>	<p>On successful completion of this degree graduates will be: Receptive to alternate ideas through a review of the literature and through class participation and assessment; Ethical in their approach to research and work practices; Advanced in their use, critical evaluation and testing of actuarial models; Adept in statistical reasoning through completion of core quantitative subjects in the degree; Advanced in problem solving through their understanding of financial, statistical and actuarial techniques; Skilled in working effectively with computer software for the analysis of data; Adept at retrieval, summary and interpretation of actuarial and financial information through class exercises and assessment; Able to apply and synthesise mathematical, statistical, financial and actuarial theory, models and evidence to a variety of financial and insurance issues; Independent and effective in communication of ideas; and Able to collaborate and be effective in team work.</p>
<b>Generic Skills:</b>	<p><b>On successful completion of this degree students should have enhanced their skills in:</b></p> <ul style="list-style-type: none"> <li># Recognising the interrelationships and synergies which exist between the disciplines of the faculty;</li> <li># Synthesizing ideas, theories and data in developing solutions to actuarial problems;</li> <li># Critical evaluation of evidence in support of an argument or proposition;</li> <li># Problem solving in actuarial practice through the application of appropriate theories, principles and data;</li> <li># Teamwork through collaborative exercises in seminars, workshops and assessment;</li> <li># The use of software packages applicable to actuarial and statistical modelling;</li> <li># Written and oral communication of actuarial ideas, theories and solutions to peers and the wider community; and</li> <li># Research including the retrieval of information from a variety of sources.</li> </ul>
<b>Notes:</b>	<p><b>Assessment</b></p> <p>Students must pass all subjects to qualify for the Master of Actuarial Science; 100 points in the first year and 100 points in the second year.</p> <p><b>Duration</b></p> <p>This program is available for semester 1 entry only. A full-time student should complete the course in four consecutive semesters (two years) taking four subjects in each semester. A part-time student should complete the course in eight consecutive semesters (four years) taking two subjects in each semester. Part-time candidates should note that most subjects are offered during normal business hours.</p> <p><b>Postgraduate Diploma in Actuarial Science</b></p> <p>Students enrolled in the Master of Actuarial Science who are either unable, or who choose not to continue with their studies, may be eligible to exit with a Postgraduate Diploma in Actuarial Science. Students must have successfully completed four core subjects and four elective subjects and be in good standing to be eligible to be awarded the Postgraduate Diploma in Actuarial Science.</p>