

MC-SCIVIS Master of Science (Vision Science)

Year and Campus:	2011 - Parkville																			
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.																			
Coordinator:	Professor Algis Vingrys																			
Contact:	Melbourne Graduate School of Science Faculty of Science The University of Melbourne Victoria 3010 Tel: + 61 3 8344 6128 Fax: +61 3 8344 3351 Web: http://graduate.science.unimelb.edu.au/ (http://graduate.science.unimelb.edu.au/)																			
Course Overview:	<p>Vision Sciences is the study of ocular, systemic and neurological disease, underpinned by foundations in biomedical, computation, statistical or societal expertise. Graduates will have an advanced knowledge and understanding of vision science, with experience investigating problems, critical thinking and analysing experimental data.</p> <p>This stream will provide students with a broad understanding of vision sciences and significant experience in a chosen specialisation. Students will have the ability to undertake independent research in vision sciences with the potential to progress to a PhD degree.</p>																			
Objectives:	<p>At the completion of this course, students should have gained:</p> <ul style="list-style-type: none"> # familiarity with the kinds of data generated by vision science research programs; # a detailed understanding of selected contemporary issues in the vision sciences; # skills in conducting research in the vision sciences; # skills in designing rigorous experimental programs; # skills in critical assessment of literature; and # the ability to present and interpret results of analyses. 																			
Course Structure & Available Subjects:	All students must complete 200 pts, including: a 125 pt Research Project; the two Core Discipline subjects; two elective Discipline subjects and the two Professional Tools subjects.																			
Subject Options:	<p>Core Discipline Subjects (25 pts): Students must take the following Core Discipline subjects:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>OPTO90017 Graduate Seminar in Vision Science</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>OPTO90018 The Eye and Vision: A Window to Disease</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>Elective Discipline Subjects (25 pts): Students may enrol in subjects available through the Master of Science programs. Subjects will be selected in consultation with the research supervisor. Subjects will be selected both to broaden the student's training and to enhance the skills relevant to the chosen research area. Where appropriate and with approval, a student may complete up to two 200 or 300 level subjects.</p> <p>Professional Tools Subjects (25 pts): Students are required to take 25 pts of Professional Tools subjects, to be selected from the following subject pool:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MAST90044 Thinking and Reasoning with Data</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>SCIE90006 Scientists, Communication & the Workplace</td> <td>Not offered 2011</td> <td>12.50</td> </tr> </tbody> </table>		Subject	Study Period Commencement:	Credit Points:	OPTO90017 Graduate Seminar in Vision Science	Semester 2	12.50	OPTO90018 The Eye and Vision: A Window to Disease	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	MAST90044 Thinking and Reasoning with Data	Semester 1	12.50	SCIE90006 Scientists, Communication & the Workplace	Not offered 2011	12.50
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MAST90045 Systems Modelling and Simulation	Semester 1	12.50
SCIE90007 E-Science	Not offered 2011	12.50
SCIE90004 Science in Context	Not offered 2011	12.50
SCIE90005 Ethics and Responsibility in Science	Semester 2	12.50
BUSA90403 Business Tools: Money People & Processes	Semester 2	12.50

Research Project (125 pts):

Students will gain experience in conducting research in vision science by taking responsibility for a research project, including experimental design, laboratory experiments; the collection, appropriate statistical analysis, and interpretation of data; and providing an oral and written presentation of the results. A literature review (up to 3000 words; pass/fail) will ensure students assimilate and critically evaluate existing knowledge within a scientific paradigm; a grant proposal/project brief and associated 10 minute oral presentation (up to 2000 words; 15%) will encourage students to consider the justification and budget of their proposed research; a final oral presentation (20 minutes; pass/fail) will combine oral and visual communication skills of their project results; a thesis (of 10,000-14,000 words, 85%) will describe the students' research and enhance their capacity to express persuasive intellectual, scientific arguments.

Students enrolled in the Master of Science (Vision Sciences) are required to complete a 125 point Research Project. Students will need to discuss and receive approval for their proposed combination of Research Project subjects (as indicated below) with the course coordinator to ensure they will have completed a total of 125 points by the end of their course.

Subject	Study Period Commencement:	Credit Points:
OPTO90019 Vision Science Project A	Semester 1, Semester 2	12.50
OPTO90020 Vision Science Project B	Semester 1, Semester 2	25
OPTO90021 Vision Science Project C	Semester 1, Semester 2	37.50
OPTO90022 Vision Science Project D	Semester 1, Semester 2	50

Entry Requirements:

A bachelor degree with a major in an appropriate discipline with at least an H3 (65%) in the major, or equivalent.

Appropriate disciplines include:

- # Anatomy
- # Cell Biology
- # Immunology
- # Neuroscience
- # Ophthalmology
- # Pharmacology
- # Psychology
- # Zoology
- # Biochemistry & Molecular Biology
- # Computer Science
- # Mathematics & Statistics
- # Optics
- # Orthoptics
- # Physics
- # Veterinary Science
- # Biotechnology
- # Genetics
- # Microbiology
- # Optometry

	<ul style="list-style-type: none"> # Pathology # Physiology # Vision Science
Core Participation Requirements:	<p>The Master of Science (Vision Sciences) welcomes applications from students with disabilities. It is University and degree 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 degree. The Master of Science (Vision Sciences) requires all students to enrol in subjects where they will require: the ability to comprehend complex science and technology related information; the ability to clearly and independently communicate a knowledge and application of science, and technology principles and practices during assessment tasks; the ability to actively and safely contribute in clinical, laboratory, and fieldwork/excursion activities. Students must possess behavioural and social attributes that enable them to participate in a complex learning environment. 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. There may be additional inherent academic requirements for some subjects, and these requirements are listed within the description of the requirements for each of these subjects. Students who feel their disability will impact on meeting this requirement are encouraged to discuss this matter with the relevant Subject Coordinator and the Disability Liaison Unit: http://www.services.unimelb.edu.au/disability/</p>
Further Study:	<p>Master of Science (Vision Sciences) graduates may also transition into a PhD in the Department of Optometry and Vision Sciences.</p>
Graduate Attributes:	<p>The Melbourne Experience enables our graduates to become: Academically excellent Knowledgeable across disciplines Leaders in communities Attuned to cultural diversity Active global citizens</p>