MC-SCICMP Master of Science (Computer 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.
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Course Overview:	The Master of Science - Computer Science is one of the research training streams of the Master of Science. The research training streams give 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 tools component, as a pathway to PhD study or to the workforce.
Objectives:	Upon completion, a graduate of the MSc(CS) should: # Have a broad grounding across the breadth of advanced Computer Science # Have specialist knowledge in (at least) one of knowledge systems, programming languages and distributed computing, or in an applications area in information systems, mathematics/statistics, spatial information science or linguistics # Have attained research maturity, including the ability to independently carry out a research survey, and plan, execute, interpret and report on a computational experiment
Course Structure & Available Subjects:	All students must complete 200 pts, including: a 75 pt Research Project; the four Core Discipline subjects (or be granted exemption by reason of prior study); and one or two Professional Tools subjects. With permission of the Course Coordinator, a total of up to 50 pts of study may be taken from one of the Department of Mathematics and Statistics, the Department of Information Systems, the Department of Geomatics, the Department of Electrical and Electronic Engineering, or the Department of Linguistics and Applied Linguistics, provided that department is willing to accept the student's enrolment.
Subject Options:	**Core Discipline Subjects (50 pts):** Students must take the following Core Discipline subjects:

Subject	Study Period Commencement:	Credit Points:
COMP90049 Knowledge Technologies	Not offered 2011	12.50
COMP90048 Declarative Programming	Not offered 2011	12.50
COMP90015 Distributed Systems	Not offered 2011	12.50
COMP90044 Research Methods	Not offered 2011	12.50

Students who have taken any of these subjects or equivalent as part of their undergraduate studies are exempt from taking those subjects, and will be required to make up an equivalent number of subject points from the pool of Elective Discipline Subjects. Students will normally take Research Methods in their second or third semester of enrolment, concurrent with or subsequent to the commencement of their Research Project.

Elective Discipline Subjects (at least 37.5 pts):
Students are required to select at least three Elective Discipline subjects from one of the following three research themes. Each theme will have at least one subject available each semester.
Knowledge Systems Theme (pre-requisite subject = COMP90049 Knowledge Technologies):

Subject	Study Period Commencement:	Credit Points:
COMP90050 Advanced Database Systems	Not offered 2011	12.50
COMP90014 Algorithms for Functional Genomics	Not offered 2011	12.50
COMP90016 Computational Genomics	Not offered 2011	12.50
COMP90051 Statistical and Evolutionary Learning	Not offered 2011	12.50

Programming Languages Theme (pre-requisite subject = COMP90048 Declarative Programming):

Subject	Study Period Commencement:	Credit Points:
COMP90053 Program Analysis and Transformation	Not offered 2011	12.50
COMP90045 Programming Language Implementation	Not offered 2011	12.50
COMP90054 Software Agents	Not offered 2011	12.50

Distributed Computing Theme (pre-requisite subject = COMP90015 Distributed Systems):

Subject	Study Period Commencement:	Credit Points:
COMP90024 Cluster and Grid Computing	Not offered 2011	12.50
COMP90025 Parallel and Multicore Computing	Not offered 2011	12.50
COMP90017 Sensor Networks and Applications	Not offered 2011	12.50

Alternative Research Themes:
With permission of the Course Coordinator, and where a case can be made for a cohesive sequence of study that complements the discipline of Computer Science, students will be permitted to nominate an Alternative Research Theme including at least 37.5 pts of Elective Discipline subjects. The Alternative Research Theme may be aligned with research in the Department of Mathematics and Statistics, the Department of Information Systems, the Department of Geomatics, the Department of Electrical and Electronic Engineering, or the Department of Linguistics and Applied Linguistics.
Additional Elective Subjects:
In addition to the 37.5 pts of Elective Discipline subjects, students who require extra subjects to make up a total of 125 pts of coursework will be permitted to take any subjects listed under the Elective Discipline themes, as well as any other non-project postgraduate subjects for which approval is granted by the Course Coordinator. As part of the selection process, students may be recommended to enrol in ENGR90021 Engineering Communication (12.5 pts) in their first semester of enrolment. Students may also, with the approval of the Course Coordinator, select up to two 300-level Computer Science and Software Engineering subjects.

Professional Tools Subjects (12.5-25 pts):
Students are required to take between 12.5 and 25 pts of Professional Tools subjects, to be selected from the following subject pool:

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
MAST90045 Systems Modelling and Simulation	Semester 1	12.50

Students who enrol in ENGR90021 Engineering Communication must take 12.5 pts only of Professional Tools subjects, and may not take SCIE90006 Scientists, Communication & the Workplace.

Research Project (75 pts):
Students are required to undertake a 75 pt Research Project, normally to commence in the second semester of their course, in the research theme where they have focused their Elective Discipline subject selection. The Research Project will be carried out under the supervision

	of academics in the Department of Computer Science and Software Engineering. Students will gain research experience in Computer Science by completing a thesis of approximately 25,000 words (contributing 90% of the grade for the Research Project subject) and giving an oral presentation of their project work prior to submission of the thesis (contributing the remaining 10% of the Research Project grade). The thesis will be examined internally within the Department of Computer Science and Software Engineering.
Entry Requirements:	A Bachelor degree with a major in Computer Science or equivalent with at least an H3 (65%) average in the major, and including at least 25 pts of university-level Mathematics or Statistics subjects. Study of COMP20004 Discrete Structures or equivalent, and of second-year University-level Mathematics/Statistics is recommended.
Core Participation Requirements:	The Master of Science (Computer Science) 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 (Computer Science) requires all students to enrol in subjects where they will require: (1) the ability to comprehend complex science and technology related information;(2) the ability to clearly and independently communicate a knowledge and application of science, and technology principles and practices during assessment tasks;(3) 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/
Further Study:	The Research Training programs offer a pathway to PhD.
Graduate Attributes:	The Melbourne Experience enables our graduates to become:Academically excellentKnowledgeable across disciplinesLeaders in communitiesAttuned to cultural diversityActive global citizens