

# MC-IT150 Master of Information Technology

<b>Year and Campus:</b>	2015 - Parkville
<b>CRICOS Code:</b>	077766F
<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>	150 credit points taken over 18 months full time. This course is available as full or part time.
<b>Coordinator:</b>	A/Prof Egemen Tanin Email: <a href="mailto:etain@unimelb.edu.au">etain@unimelb.edu.au</a>
<b>Contact:</b>	<p><b>Melbourne School of Engineering</b> Ground Floor, Old Engineering (Building 173)</p> <p>Current students: Email: <a href="mailto:13MELB@unimelb.edu.au">13MELB@unimelb.edu.au</a> (<a href="mailto:13MELB@unimelb.edu.au">mailto:13MELB@unimelb.edu.au</a>) Phone: 13MELB (13 6352) +61 3 9035 5511</p> <p>Prospective students: Visit <b>Master of Information Technology</b> (<a href="http://www.msi.unimelb.edu.au/study/graduate/master-of-information-technology/">http://www.msi.unimelb.edu.au/study/graduate/master-of-information-technology/</a>)</p>
<b>Course Overview:</b>	<p><b>There is no further entry into this course. You will be able to be admitted into the MC-IT150, via the MC-IT program.</b></p> <p><b>Please refer to MC-IT (200 points).</b></p> <p>The Master of Information Technology (MIT) is a 150-point program for those interested in a career in technical IT.</p> <p>The key aspects of the course are:</p> <ul style="list-style-type: none"> <li># Specialisations in key areas of Information Technology, namely:</li> <li># Formal studies in project and change management, including risk management, quality assurance and testing.</li> <li># Optional 25-point industry placement with local IT organisations as part of the course (available on a competitive basis)</li> </ul> <p>A 25-point project, qualifying students to advance to a PhD</p>
<b>Learning Outcomes:</b>	<p>On completion of this course students should have:</p> <ul style="list-style-type: none"> <li># Expertise in a key area of information technology</li> <li># Analytical skills and competencies in problem solving</li> <li># A sound fundamental understanding of the principles and methods of information technology</li> <li># Demonstrable competencies in the educational and professional standards of the professional institutions and boards with which the course is accredited</li> <li># A broad knowledge base of information technology so as to facilitate effective communication with those involved in the IT industry</li> <li># Have acquired the computational skills necessary to solve theoretical and practical problems for further professional development and for meeting future changes in IT</li> <li># Verbal and written communication skills that enable them to make a meaningful contribution to changing face of the IT industry</li> <li># Professional ethics and responsibility towards the IT profession and the broader community</li> </ul>
<b>Course Structure &amp; Available Subjects:</b>	Students must complete 150 points, made up of 50 points of Specialisation Subjects and 100 points of Advanced Specialisation Subjects (both based on the specialisation the student is enrolled in).
<b>Subject Options:</b>	<p><b>Computing Specialisation</b></p> <p><b>Specialisation Subjects -Computing Specialisation</b></p>

25 points core:

Subject	Study Period Commencement:	Credit Points:
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.50
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50

AND

25 points from:

Subject	Study Period Commencement:	Credit Points:
COMP90042 Web Search and Text Analysis	Semester 1	12.50
COMP90043 Cryptography and Security	Semester 2	12.50
COMP90045 Programming Language Implementation	Not offered 2015	12.50
COMP90048 Declarative Programming	Semester 2	12.50
COMP90051 Statistical Machine Learning	Semester 2	12.50
ISYS90039 Innovation & Entrepreneurship in IT	Not offered 2015	12.50
SWEN90002 Engineering for Internet Applications	Not offered 2015	12.50

Students may substitute 12.5 points with one of the following subjects:

Subject	Study Period Commencement:	Credit Points:
COMP30026 Models of Computation	Semester 2	12.50
SWEN30006 Software Modelling and Design	Semester 1, Semester 2	12.50

Subject to the approval of the course coordinator, students may also take Computing - related subjects from other departments within the University.

### **Advanced Specialisation Subjects -Computing Specialisation:**

*37.5 points core*

Subject	Study Period Commencement:	Credit Points:
ISYS90050 IT Project and Change Management	June, Semester 1, Semester 2	12.50
COMP90055 Computing Project	Summer Term, Semester 1, Semester 2	25

*62.5 points elective*

Students must take 62.5 points from the following subjects:

Subject	Study Period Commencement:	Credit Points:
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ISYS90080 IT Industry Placement	Summer Term, Semester 1, Semester 2	25
ISYS90082 Industry Based IT Experience Project	Summer Term, Semester 1, Semester 2	12.50
COMP90050 Advanced Database Systems	Semester 1	12.50
COMP90051 Statistical Machine Learning	Semester 2	12.50
COMP90045 Programming Language Implementation	Not offered 2015	12.50
COMP90053 Program Analysis and Transformation	Not offered 2015	12.50
COMP90054 Software Agents	Semester 2	12.50
COMP90046 Constraint Programming	Semester 2	12.50
COMP90017 Sensor Networks and Applications	Not offered 2015	12.50
COMP90018 Mobile Computing Systems Programming	Semester 2	12.50
COMP90056 Stream Computing and Applications	Not offered 2015	12.50
COMP90057 Advanced Theoretical Computer Science	Semester 2	12.5

Students may also select from the following subjects:

Subject	Study Period Commencement:	Credit Points:
SWEN40004 Modelling Complex Software Systems	Semester 1	12.50
MCEN90031 Applied High Performance Computing	Semester 2	12.50

Subject to the approval of the course coordinator, students may also take Computing-related subjects from other departments within the University.

### **Distributed Computing**

#### ***Specialisation Subjects -Distributed Computing Specialisation***

*12.5 points core*

Subject	Study Period Commencement:	Credit Points:
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50

Students must take 37.5 points from among the following subjects:

Subject	Study Period Commencement:	Credit Points:
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.50
COMP90048 Declarative Programming	Semester 2	12.50
COMP90043 Cryptography and Security	Semester 2	12.50
COMP90042 Web Search and Text Analysis	Semester 1	12.50
COMP90051 Statistical Machine Learning	Semester 2	12.50
COMP90045 Programming Language Implementation	Not offered 2015	12.50
COMP90053 Program Analysis and Transformation	Not offered 2015	12.50
COMP90046 Constraint Programming	Semester 2	12.50

COMP90054 Software Agents	Semester 2	12.50
ISYS90039 Innovation & Entrepreneurship in IT	Not offered 2015	12.50

Note: Subject to the approval of the course coordinator, students may also take Distributed Computing-related subjects from other departments within the University

### Advanced Specialisation Subjects -Distributed Computing Specialisation

37.5 points core:

Subject	Study Period Commencement:	Credit Points:
ISYS90050 IT Project and Change Management	June, Semester 1, Semester 2	12.50
COMP90019 Distributed Computing Project	Semester 1, Semester 2	25

Students must take 62.5 points from among the following subjects:

Subject	Study Period Commencement:	Credit Points:
SWEN90002 Engineering for Internet Applications	Not offered 2015	12.50
COMP90024 Cluster and Cloud Computing	Semester 1	12.50
COMP90017 Sensor Networks and Applications	Not offered 2015	12.50
COMP90020 Distributed Algorithms	Semester 1	12.50
COMP90018 Mobile Computing Systems Programming	Semester 2	12.50
COMP90025 Parallel and Multicore Computing	Semester 2	12.50
MCEN90031 Applied High Performance Computing	Semester 2	12.50
ISYS90080 IT Industry Placement	Summer Term, Semester 1, Semester 2	25
ISYS90082 Industry Based IT Experience Project	Summer Term, Semester 1, Semester 2	12.50
COMP90050 Advanced Database Systems	Semester 1	12.50
COMP90057 Advanced Theoretical Computer Science	Semester 2	12.5

Note: Subject to the approval of the course coordinator, students may also take Distributed Computing-related subjects from other departments within the University.

### Health Specialisation

#### **Specialisation Subjects -Health Specialisation:**

Subject	Study Period Commencement:	Credit Points:
ISYS90069 eHealth & Biomedical Informatics Systems	June	12.50
ISYS90078 Health Data, Information and Knowledge	Semester 2	12.50
INFO90001 eHealth & Biomedical Informatics Methods	October	12.50

AND

Students must take 12.5 points from among the following subjects:

Subject	Study Period Commencement:	Credit Points:
INFO30005 Web Information Technologies	Semester 1	12.50
ISYS90036 Enterprise Systems	Semester 1	12.50
ISYS90039 Innovation & Entrepreneurship in IT	Not offered 2015	12.50
SWEN90002 Engineering for Internet Applications	Not offered 2015	12.50
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.50
ISYS90026 Fundamentals of Information Systems	Semester 1	12.50

Subject to the approval of the course coordinator, students may also take Health IT-related subjects from other departments within the University

### **Advanced Specialisation Subjects -Health Specialisation:**

62.5 points core

Subject	Study Period Commencement:	Credit Points:
ISYS90050 IT Project and Change Management	June, Semester 1, Semester 2	12.50
ISYS90077 EHealth Applications and Solutions	Semester 1	12.50
ISYS90079 Health IT Project	Summer Term, Semester 1, Semester 2	25
ISYS90076 IT Infrastructure for eHealth	Semester 1	12.50

Students must take 37.5 points from among the following subjects:

Subject	Study Period Commencement:	Credit Points:
ISYS90035 Knowledge Management Systems	Semester 1	12.50
ISYS90080 IT Industry Placement	Summer Term, Semester 1, Semester 2	25
ISYS90082 Industry Based IT Experience Project	Summer Term, Semester 1, Semester 2	12.50
COMP90018 Mobile Computing Systems Programming	Semester 2	12.50
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50
COMP90017 Sensor Networks and Applications	Not offered 2015	12.50
SINF90004 Data Warehousing	Not offered 2015	12.50
COMP90057 Advanced Theoretical Computer Science	Semester 2	12.5

Note: Subject to the approval of the course coordinator, students may also take Health IT-related subjects from other departments within the University

### **Spatial Specialisation**

#### **Specialisation Subjects -Spatial Specialisation**

Subject	Study Period Commencement:	Credit Points:
GEOM90008 Foundations of Spatial Information	Semester 1	12.50

GEOM90015 Spatial Data Infrastructure	Semester 1	12.50
GEOM90018 Spatial Databases	Semester 1	12.50

In addition, students must complete 12.5 points, in the form of:

Subject	Study Period Commencement:	Credit Points:
GEOM90042 Spatial Information Programming	Semester 1	12.50

OR

one of the following subjects with the approval of the course coordinator:

Subject	Study Period Commencement:	Credit Points:
SWEN90002 Engineering for Internet Applications	Not offered 2015	12.50
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.50
COMP90050 Advanced Database Systems	Semester 1	12.50
COMP90017 Sensor Networks and Applications	Not offered 2015	12.50
ISYS90039 Innovation & Entrepreneurship in IT	Not offered 2015	12.50
ISYS90026 Fundamentals of Information Systems	Semester 1	12.50
ISYS90035 Knowledge Management Systems	Semester 1	12.50
ISYS90032 Emerging Technologies and Issues	Semester 1, Semester 2	12.50
SINF90004 Data Warehousing	Not offered 2015	12.50
SINF90002 Interaction Design and Usability	Not offered 2015	12.50
CVEN90048 Transport Systems	Semester 2	12.50
CVEN90043 Sustainable Infrastructure Engineering	Semester 1	12.50
ENEN90032 Environmental Analysis Tools	Semester 2	12.50
ENEN90031 Quantitative Environmental Modelling	Semester 1	12.50
ENEN90028 Monitoring Environmental Impacts	Semester 2	12.50

**Advanced Specialisation Subjects -Spatial Specialisation:**

62.5 points core

Subject	Study Period Commencement:	Credit Points:
ISYS90050 IT Project and Change Management	June, Semester 1, Semester 2	12.50
GEOM90006 Spatial Analysis	Semester 2	12.50
GEOM90043 Spatial IT Project	Summer Term, Semester 1, Semester 2	25
GEOM90007 Spatial Visualisation	July	12.50

In addition, students must complete 37.5 points from the following subjects:

Subject	Study Period Commencement:	Credit Points:
GEOM90040 Mathematics of Spatial Information	Semester 1	12.50
GEOM90033 Satellite Positioning Systems	Semester 2	12.50
GEOM90005 Remote Sensing	Semester 2	12.50
GEOM90016 Advanced Topics in GIScience	Semester 1	12.50
GEOM90017 Spatial Industry Internship	Summer Term, Semester 1, Semester 2, Winter Term	12.50
ISYS90080 IT Industry Placement	Summer Term, Semester 1, Semester 2	25
ISYS90082 Industry Based IT Experience Project	Summer Term, Semester 1, Semester 2	12.50
COMP90057 Advanced Theoretical Computer Science	Semester 2	12.5

\* Subject to the approval of the course coordinator, students may supplement this list with other advanced Spatial-related subjects from within the University

Note: Credit may not be obtained for both GEOM90017 and ISYS90080.

#### Entry Requirements:

**There is no further entry into this course. Please refer to MC-IT (200 points). Last intake year was 2014.**

A three-year undergraduate degree with a major in Computer Science, Information Technology, Software Engineering or related discipline, with a final year grade average of at least an H3 (65).

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 the department to provide adequate project supervision

#### English Requirement

All students studying at the University of Melbourne must satisfy the University's English language entry requirements in accordance with Selection Principles: Regulation 11.1.A2 – Admission and Selection to Courses.

<http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements> (<http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements>)

For graduate students the University's English language entry requirements are set out at: <http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements/graduate-toefl-ielts> (<http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements/graduate-toefl-ielts>)

#### The University of Melbourne English Language Bridging Program (UMELBP)

The UMELBP provides a direct English language pathway from Hawthorn-Melbourne to specific courses at the University of Melbourne. Students who have achieved an IELTS band 0.5 lower than their University of Melbourne course entry requirement may be able to proceed directly to their University studies upon successful completion of the UMELBP. More information is available from the Hawthorn Melbourne website.

<http://www.hawthornenglish.com/> (<http://www.hawthornenglish.com/>)

The Melbourne School of Engineering's English Language alternative may affect the duration and cost of your course

<http://www.eng.unimelb.edu.au/study/english-requirements.html> (<http://www.eng.unimelb.edu.au/study/english-requirements.html>) .

#### Core Participation Requirements:

The Master of Information Technology 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 Information Technology requires all students to enrol in subjects where they will require: The ability to comprehend complex theory and technology-

	<p>related information The ability to clearly and independently communicate a knowledge and application of theory, and technology principles and practices during assessment tasks The ability to actively and safely contribute in IT development and management 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: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a></p>
<b>Further Study:</b>	Graduates may progress to a wide range of other graduate coursework degrees as well as research higher degree programs, including the Doctor of Philosophy.
<b>Graduate Attributes:</b>	Graduates have a specialisation in computing, distributed computing, health IT or spatial IT, as well as a solid foundation in programming, algorithms, complexity, network programming, and database systems, project management, and advanced information technology. Elective subjects are available in areas as diverse as bioinformatics, database systems, enterprise computing, geomatics, information systems, machine intelligence, programming languages, project and change management, security, and software engineering.
<b>Professional Accreditation:</b>	<b>Provisionally accredited by the Australian Computer Society. Full accreditation will be granted when the first cohort of students graduate.</b>
<b>Generic Skills:</b>	<p>Graduates will:</p> <ul style="list-style-type: none"> <li># Have the ability to demonstrate advanced independent critical enquiry, analysis and reflection</li> <li># Have a strong sense of intellectual integrity and the ethics of scholarship</li> <li># Have in-depth knowledge of their specialist area</li> <li># Reach a high level of achievement in writing, research or project activities, problem-solving and communication</li> <li># Be critical and creative thinkers, with an aptitude for continued self-directed learning</li> <li># Be able to examine critically, synthesise and evaluate knowledge across a broad range of disciplines</li> <li># Have a set of flexible and transferable skills for different types of employment; and</li> <li># Be able to initiate and implement constructive change in their communities, including professions and workplaces</li> </ul>