361AA Master of Software Systems Engineering

Year and Campus:	2010 - Parkville
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Graduate/Postgraduate
Duration & Credit Points:	100 credit points taken over 12 months full time. This course is available as full or part time.
Coordinator:	Peter Schachte
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Course Overview:	The MSSE allows graduates of computer science to study current computer science and software engineering topics at an advanced level. The course allows considerable flexibility and students select their own program from the available subjects. The technological skills presented in the MSSE are in high demand throughout the computing industry.The course covers a wide range of subjects enabling students to choose areas a variety of specialisations, for example: # Artificial Intelligence: understanding and building intelligent systems # Information Management: database and information retrieval systems and associated technologies for the management of data # Software Engineering: modern software engineering principles and methodologies.
Objectives:	The Master of Software Systems Engineering is designed to: # Provide a solid foundation for students who want to develop their career in the broad field of computing # Provide a thorough understanding of key areas of Computer Science # Provide an introduction to research skills in a selected area # Improve computer related oral and written communication skills
Course Structure & Available Subjects:	-
Subject Options:	All MSSE students must pass 433-643 IT Project Management. Additionally, students may take either seven subjects of 12.5 points each or five subjects of 12.5 points plus a small research project of 25 points (433-699 Minor Research Project). The research project involves an investigation and preparation of a substantial written report under the supervision of an academic staff member. Enrolment in this subject requires the approval of the Program Director. Students must complete a minimum of six subjects at a 600-level, including 433-643 IT Project Management, from those taught by the Department. Students should note that not all subjects are offered every year. Students seeking definitive details should contact the department prior to commencement. International students should check subject availability before commencing the course.

Subject	Study Period Commencement:	Credit Points:
COMP90025 Networks & Parallel Processing	Semester 2	12.50

Subject	Study Period Commencement:	Credit Points:
COMP90042 Web Search and Text Analysis	Semester 1	12.50
COMP90043 Cryptography and Security	Semester 2	12.50
SWEN90002 Engineering for Internet Applications	Semester 1	12.50
COMP90010 Web Technologies and Applications	Semester 1	12.50
433-630 Principles of Programming Languages	Not offered 2010	
433-632 Logic Programming	Not offered 2010	
433-633 Constraint Programming	Not offered 2010	
COMP90045 Programming Language Implementation	Semester 1	12.50
COMP90046 Constraint Programming	Semester 2	12.50
SWEN90003 IT Project Management	Semester 1	12.50
433-645 Software System Security	Not offered 2010	
433-646 Systems Requirements Engineering	Not offered 2010	12.50
COMP90014 Algorithms for Functional Genomics	Semester 2	12.50
COMP90016 Computational Genomics	Semester 1	12.50
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50
COMP90018 Mobile Computing Systems Programming	Semester 2	12.50
433-654 Sensor Networks and Applications	Not offered 2010	12.50
COMP90020 Distributed Algorithms	Semester 2	12.50
433-661 High Performance Database Systems	Not offered 2010	
433-667 Text and Document Management	Not offered 2010	
COMP90024 Cluster and Grid Computing	Semester 1	12.50
433-679 Evolutionary and Neural Computation	Not offered 2010	
433-682 Software Agents	Not offered 2010	
433-684 Machine Learning	Not offered 2010	
COMP90029 Directed Study 6A	Summer Term, Semester 1, Semester 2	12.50
COMP90049 Knowledge Technologies	Semester 1	12.50
COMP90005 Directed Study 6B	Summer Term, Semester 1, Semester 2	12.50
COMP90048 Declarative Programming	Semester 2	12.50
COMP90030 Minor Research Project	Semester 1, Semester 2	25

In addition to these subjects, students may with the approval of the Program Director take up to two of the following subjects from the Master of Telecommunications Engineering:

Subject	Study Period Commencement:	Credit Points:
ELEN90002 Fundamentals of Network Design	Semester 1	12.50
ELEN90003 Multimedia Network Design	Semester 2	12.50
ELEN90006 Internet Engineering	Semester 1	12.50

Entry Requirements:

Academic Requirements

Academic entry requirements are:
a four year degree with a substantial computing content with an average final year mark of at least 70% (University of Melbourne equivalent)
or
a four year degree in a related discipline together with considerable industry experience in the field of computing or software engineering
or
consideration will also be given to applicants with a three year degree in a computing-related discipline or equivalent and who have completed the Postgraduate Diploma in Science (Computer Science) at the University of Melbourne with a mark of 75% or higher.

Computer Background

An applicant's computing background should include solid experience with Unix and C programming as well as a good knowledge of:

- data structures and algorithms for sorting, searching and graph manipulation
- software development principles and tools
- software design including object-oriented design.

An applicant's computing background should also include good knowledge of several specialised areas, such as: artificial intelligence; computability and logic; operating systems; databases; human-computer interaction; computer networks; compilers; computer graphics and software engineering.

An applicant must have studied mathematics or statistics at the equivalent of a second year University level.

English Language Requirement

International students and students whose prior qualifications are from a university overseas where English is not the official language of instruction and examination need to supply proof of academic English language competency. Proof acceptable to the University includes:

Original evidence of an English Language test score at a sitting within the last 24 months of either -

TOEFL - at least 577 and a TWE of at least 4.5 (paper based) or a TOEFL of at least 233 with an Essay Rating of at least 4.5 (computer based)
or
IELTS - at least 6.5. (A minimum band score of 6 is required in the Academic Writing module).

Entry under a slightly lower Engineering alternative* English Language entry requirement is available as follows:

TOEFL - at least 550, with a TWE of 4 or the computer based TOEFL of at least 213 with an Essay Rating Score of at least 4 and agreeing in writing to undertake and pass an ESL subject in the first semester of study at The University of Melbourne
or
IELTS - at least 6 and agreeing in writing to undertake and pass an ESL subject in the first semester of study at The University of Melbourne.

* The Faculty of Engineering's English Language alternative may affect the duration and cost of your course.

Core Participation Requirements:

For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on

	the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Graduate Attributes:	The Melbourne School of Engineering has mapped the University of Melbourne graduate attributes with Engineers Australia graduate attributes and Melbourne School of Engineering graduate attributes.
Notes:	The program is accredited by the Australian Computer Society (ACS).