Master of Engineering (Software with Business)

Year and Campus:	2014
Coordinator:	Dr. Shanika Karunasekerakarus@unimelb.edu.au
Contact:	Melbourne School of Engineering Ground Floor, Old Engineering (Building 173) Current Students: Email:**13MELB@unimelb.edu.au (mailto:13MELB@unimelb.edu.au)** Phone: 13 MELB (13 6352) +61 3 9035 5511 Prospective Students: Visit **Master of Engineering (Software with Business) (http://www.eng.unimelb.edu.au/study/graduate/master-eng-software-business.html)**
Overview:	Software engineers combine an understanding of computer science, design, engineering management, mathematics and psychology to manage the development, maintenance and production of large scale software systems. This specialisation focuses on team-based projects, in which students must conceive, design, implement and operate software engineering solutions. Students develop technical skills and the ability to apply engineering principles to solving real-world problems. A year-long industry project provides the opportunity to work closely with ICT professionals, and many graduates find roles in this field, in addition to those in other service-oriented and software development areas.
Learning Outcomes:	To produce graduates who are both skilled in software engineering principles and have the ability to apply them to complex, open-ended engineering tasks and problems.
Structure & Available Subjects:	The Master of Engineering (Software with Business) consists of of 300 points of study - 225 points core plus 75 points elective subjects as listed below. Advanced standing will be awarded for equivalent subjects taken in prior study to applicants on the following basis: # a maximum of 100 points for applicants with a 4 year Bachelor of Engineering or equivalent. # a maximum of 100 points for applicants with a 3 year undergraduate degree. Students entering with a three year bachelor degree must complete at least 200 points of study within the Masters of Engineering. In cases where applicants have completed the equivalent of more than 100 points of core masters subjects, discipline specific electives must be taken to fulfill the 200 minimum masters study requirement. Note: applicants from the University of Melbourne with: # An appropriate "Engineering System" major will receive 100 points of advanced standing. Applicants who have completed more than 100 points of core subjects in their undergraduate degree will obtain exemption for the cores taken but will need to replace the points in excess of 100 points with elective subjects. # Engineering breadth sequences (including those in the Bachelor of Commerce) will receive advanced standing to a maximum of 100 points.
Subject Options:	Total 300 points Students must complete all 300 points of subjects, including all core subjects, or have advanced standing or exemption. The core and elective subjects are those listed below. The order of subjects below is one way of progressing through the course - students who meet subject requisites may tailor their individual study plan to take into account advanced standing and their preferred study load. Students plan their study on-line, however Melbourne School of Engineering course advisors are available to assist students with individual study plans. Students must complete the following in the Master of Engineering (Software): # 225 credit points of core subjects

25 credit points of Computing and Information Systems (CIS) Electives
12.5 credit points of Computer Science (CS) Foundation Electives
25 credit points of Software Engineering Advanced Electives
12.5 credit points of CIS Advanced Electives

according to the lists below

Suggested first 100 points:

Suggested study plan for the first 100 points:

75 points Core
25 points Computing and Information Systems (CIS) from the list below

Core 75 points

Subject	Study Period Commencement:	Credit Points:
ENGR90021 Engineering Communication	Semester 1, Semester 2	12.50
COMP90038 Algorithms and Complexity	Semester 1, Semester 2	12.50
COMP90041 Programming and Software Development	Semester 1, Semester 2	12.50
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50
COMP20004 Discrete Structures	Not offered 2014	12.50
SWEN30006 Software Modelling and Design	Semester 1, Semester 2	12.50

Computing and Information Systems (CIS) Electives

CIS Electives 25 points from the below list

Subject	Study Period Commencement:	Credit Points:
COMP30016 Computer Science Project	Not offered 2014	12.50
COMP30018 Knowledge Technologies	Semester 1, Semester 2	12.50
COMP30020 Declarative Programming	Semester 2	12.50
COMP30022 IT Project	Semester 2	12.50
COMP30023 Computer Systems	Semester 1	12.50
COMP30024 Artificial Intelligence	Semester 1	12.50
COMP30025 Theory of Computation	Semester 2	12.50
INFO30004 Usability Engineering	Semester 1	12.50
INFO30005 Web Information Technologies	Semester 1	12.50

Suggested second 100 points:

Suggested study plan for the second 100 points:

87.5 points Core
12.5 points of Computer Science (CS) Foundation Electives

Core 87.5 points

Subject	Study Period Commencement:	Credit Points:
SWEN90014 Masters Software Engineering Project	Semester 2	12.50
SWEN90006 Software Engineering Methods	Semester 2	12.50

Subject	Study Period Commencement:	Credit Points:
SWEN90009 Software Requirements Analysis	Semester 1	12.50
ISYS90050 IT Project and Change Management	Semester 1, Semester 2	12.50
ENGM90014 The World of Engineering Management	Semester 1, Semester 2	12.50
ENGM90012 Marketing Management for Engineers	Semester 2	12.50
ENGM90006 Engineering Contracts and Procurement	Semester 2	12.50

Computer Science (CS) Foundation Electives

CS Foundation Electives 12.5 points from the below list

Subject	Study Period Commencement:	Credit Points:
COMP90015 Distributed Systems	Semester 1, Semester 2	12.50
COMP90048 Declarative Programming	Semester 2	12.50
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.50

Suggested third 100 points:

Suggested study plan for the third 100 points:

- # 62.5 points Core
- # 25 points Software Engineering (SE) Advanced electives
- # 12.5 points Computing and Information Systems (CIS) Advanced Electives

from the lists below

Core 62.5 points

Subject	Study Period Commencement:	Credit Points:
SWEN90013 Masters Advanced Software Project	Year Long	25
SWEN40004 Modelling Complex Software Systems	Semester 1	12.50
ENGM90011 Economic Analysis for Engineers	Semester 1	12.50
ENGM90013 Strategy Execution for Engineers	Not offered 2014	12.50

Software Engineering Advanced Electives

Software Engineering Advanced Electives 25 points from the below list

Subject	Study Period Commencement:	Credit Points:
SWEN90010 High Integrity Systems Engineering	Semester 1	12.50
COMP90043 Cryptography and Security	Semester 2	12.50
SWEN90007 Software Design and Architecture	Semester 2	12.50

Computing and Information Systems (CIS) Advanced Electives

Computing and Information Systems (CIS) Advanced Electives 12.5 points from the below list

Subject	Study Period Commencement:	Credit Points:
COMP90050 Advanced Database Systems	Semester 1	12.50
COMP90045 Programming Language Implementation	Semester 1	12.50
COMP90053 Program Analysis and Transformation	Not offered 2014	12.50

	COMP90042 Web Search and Text Analysis	Semester 1	12.50
	COMP90024 Cluster and Cloud Computing	Semester 1	12.50
	COMP90046 Constraint Programming	Semester 2	12.50
	COMP90044 Research Methods	Semester 2	12.50
	COMP90014 Algorithms for Functional Genomics	Semester 2	12.50
	COMP90054 Software Agents	Semester 2	12.50
	COMP90018 Mobile Computing Systems Programming	Semester 2	12.50
Links to further information:	http://www.eng.unimelb.edu.au/study/graduate/master-eng-software-business.html		
Related Course(s):	Master of Engineering		