

SWEN90006 Software Testing and Reliability

Credit Points:	12.5									
Level:	9 (Graduate/Postgraduate)									
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.									
Time Commitment:	Contact Hours: 36 hours, comprising of two 1-hour lectures and one 1-hour workshop per week Total Time Commitment: 200 hours									
Prerequisites:	<p>One of the following:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>SWEN20003 Object Oriented Software Development</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>COMP90041 Programming and Software Development</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	SWEN20003 Object Oriented Software Development	Semester 2	12.50	COMP90041 Programming and Software Development	Semester 1, Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:								
SWEN20003 Object Oriented Software Development	Semester 2	12.50								
COMP90041 Programming and Software Development	Semester 1, Semester 2	12.50								
Corequisites:	None									
Recommended Background Knowledge:	None									
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject and: 433-342 Software Engineering Methods									
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University 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 University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>									
Coordinator:	Dr Timothy Miller									
Contact:	email: tmiller@unimelb.edu.au (mailto:tmiller@unimelb.edu.au)									
Subject Overview:	<p>AIMS</p> <p>Software is present in almost every part of our lives, and continues to change the world. Of importance to users is that software is correct, complete, reliable and efficient. The scale and complexity of most software ensures that achieving these qualities is non-trivial. This subject introduces students to the software engineering principles, processes, tools and techniques for analysing, measuring and developing correct, complete, and reliable software.</p> <p>The subject is one of the foundation subjects for the MC-ENG Master of Engineering (Software). It is a prerequisite for many of the advanced software engineering electives.</p> <p>INDICATIVE CONTENT</p> <p>Topics covered may include: methods for static and dynamic software testing; quality and dependability; reliability measurement and engineering; performance measurement and engineering; software problem analysis and fault isolation; and software engineering tools.</p>									

Learning Outcomes:	<p>On completion of this subject the student is expected to:</p> <ul style="list-style-type: none"> # Select appropriate methods to build in quality and dependability into software systems # Select and apply effective testing techniques for verifying medium and large scale software systems # Select and apply measures and models to evaluate the quality and dependability of a software system # Work in a team to evaluate and apply different methods for quality and reliability of a software system.
Assessment:	<p>Two assignments each consisting of approximately 500 words each and requiring approximately 25 - 30 hours of work each (20%). These are due in weeks 5 and 8 respectively. ILOs 1, 2 and 3 are addressed by these assignments One small assignment consisting of approximately 250 words and requiring approximately 5 - 7 hours of work (5%). This is due in week 9. ILOs 1 and 3 are addressed by this assignment One research project executed in teams of 3-4, consisting of a report of no more than 3000 words (25%), requiring approximately 27 - 32 hours per student. The project is due at the start of week 12. ILO 1, 3, and 4 are addressed by this project One two-hour end-of-semester written examination (50%). ILOs 1, 2, and 3 are addressed in the examination. Hurdle requirement: To pass the subject, students must obtain: at least 50% overall at least 50% (25/50) in project work; and at least 50% (25/50) in the written examination. ILO 4 is addressed in the group research project Generic skills are addressed by all assessment items.</p>
Prescribed Texts:	None
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2015/B-COM) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS) <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>On completion of this subject, students should have the following skills:</p> <ul style="list-style-type: none"> # An in-depth technical competence in the selection and application of methods to develop, measure and test quality of software systems # The ability to undertake problem identification, formulation and solution, both individually and as part of a team.
Notes:	<p>LEARNING AND TEACHING METHODS</p> <p>The subject will be delivered through a combination of lectures and workshops. Students will also complete two individual assignments and a group research project, which will reinforce the material covered in lectures.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>A book of notes will be made available at the University of Melbourne bookshop at the start of the semester.</p> <p>CAREERS / INDUSTRY LINKS</p> <p>This knowledge and skills learned in the subject forms a basis of any career related to software engineering, software development, computer programming, or information technology. There will be one or two lectures analysing real-world case studies in which the methods presented in this subject have been employed.</p>
Related Course(s):	Master of Philosophy - Engineering Ph.D.- Engineering

**Related Majors/Minors/
Specialisations:**

B-ENG Software Engineering stream
Computer Science
Master of Engineering (Software with Business)
Master of Engineering (Software)
Selective subjects for B-BMED