MONASH University
Information Technology

FIT5136
Software engineering

Unit Guide

Semester 2, 2014

Last updated: 16 Jul 2014

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FIT5136 Software engineering - Semester 2, 2014

This unit provides an introduction to the discipline of software engineering at the postgraduate level. The emphasis is upon a broad coverage of various aspects of software engineering. We assume the students will at this stage have adequate programming skills and are able to put theories to practice. The notion of a software system as a model or approximation of a desired system is introduced, and used as a way of describing such things as the software life cycle and its various models, programming by contract, design and testing issues, maintenance, reuse, complexity, divide and conquer strategies, metrics and measurement, project management and software legacy.

Mode of Delivery

Caulfield (Day)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- Two hours of lectures
- One 2-hour tutorial

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

Unit Relationships

Prerequisites

FIT5131 or FIT9017 or equivalent

Chief Examiner

Dr Chris Ling

Campus Lecturer

Caulfield

Karan Pedramrazi

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, see:

www.monash.edu.au/about/monash-directions/ and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Based on student feedback, this unit is reasonably well-structured and no major changes have been made for this semester.

If you wish to view how previous students rated this unit, please go to
https://emuapps.monash.edu.au/unitevaluations/index.jsp

Academic Overview

Learning Outcomes

On successful completion of this unit students should be able to:

- describe the breadth and nature of the discipline of software engineering;
- explain the effect and implications of complexity in large software systems;
- describe the issues in constructing large software systems from its components, and the nature and design of these components;
- use basic modelling techniques to define and describe the behaviour of software systems;
- employ group working skills in solving software development problems;
- describe the wider software engineering context, software engineering processes and the responsibilities of software engineers.

Unit Schedule

Week	Activities	Assessment
0	Check your lab class enrolments	No formal assessment or activities are undertaken in week 0
1	Introductions	No prac/lab this week. Prac/Lab classes start in Week 2
2	Software Life-cycle Models	Assessment task 2: Practical class assessments - Weekly in Lab classes. Starts this week.
3	The Unified Process	
4	Requirements	
5	Analysis 1	
6	Analysis 2	
7	Modules and Objects	
8	Design and Formal Methods	
9	Implementation	
10	Testing	Assessment task 1: Online quiz due 11.55pm Monday 6 October 2014
11	Ethics and Intellectual Properties	
12	Tools/Review	Assessment task 3: Work Folio due Friday
	SWOT VAC	No formal assessment is undertaken in SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your learning system.

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach helps students to initially encounter information at lectures, discuss and explore the information during tutorials, and practice in a hands-on lab environment.

Assessment Summary

Examination (3 hours): 60%; In-semester assessment: 40%

Assessment Task	Value	Due Date
On-line quiz	10%	To be submitted on-line by 11.55pm Monday 6 October 2014
Practical class assessments	25%	Weekly in lab classes (Week 2 to 12)

Unit Schedule

Work Folio	5%	Friday, Week 12
Examination 1	60%	To be advised

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles
(http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurd

Academic Integrity - Please see resources and tutorials at
http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/

Assessment Tasks

Participation

- **Assessment task 1**

  Title:
  On-line quiz
  Description:
  An open book, on-line quiz to be completed by Week 10.
  Weighting:
  10%
  Criteria for assessment:
  Correct answers demonstrating basic knowledge and understanding of course material.
  Due date:
  To be submitted on-line by 11.55pm Monday 6 October 2014
  Remarks:
  The quiz will cover materials from Week 1 to Week 9. This is an open book quiz.

- **Assessment task 2**

  Title:
  Practical class assessments
  Description:
  Range of tasks, including team exercises, software design,implementation.
  Some work will be assessed individually, whereas for some assessment activities, students will work in pairs.
  Weighting:
  25%
  Criteria for assessment:
  Submissions are assessed based on correct answers demonstrating basic knowledge and understanding of course material.

  For group work, some marks will be for the group as a whole, some for an individual's contribution; details will be specified in the assessment task description.

  Some tasks will be assessed in the lab class itself. When marking is done outside the lab, in most cases students must submit their work at the end of the lab class. Details will be given with each lab class description provided each week.
  Due date:
  Weekly in lab classes (Week 2 to 12)

- **Assessment task 3**

Title:
Work Folio
Description:
Students must produce a range of documents (text, UML diagrams, code, etc) from tutorial and laboratory class activities. These will be collected in a Google Documents folder that will form an "eFolio". A more detailed decription of the requirements for the eFolio will be available on the unit Moodle site.
Weighting:
5%
Criteria for assessment:
A set of guidelines for the eFolio is provided online.
Criteria for assessing the folio are:

1. Inclusion of all specified documents (completeness)
2. Appropriateness of contents and presentation
3. Organisation

Due date:
Friday, Week 12

Examinations

- **Examination 1**

Weighting:
60%
Length:
3 hours
Type (open/closed book):
Open book
Electronic devices allowed in the exam:
None

Learning resources

Reading list

Recommended (good general "classic" software engineering texts):

- Pressman, R. S. (2010). *Software Engineering - A practitioner's approach*, McGraw-Hill.
- Sommerville, I. (2011). *Software Engineering*, Addison-Wesley.
- Satzinger, J.W, Jackson, R.B., S. D. Burd (2005). *Object-Oriented Analysis and Design with the Unified Process*, Course Technology.

Also, for the "Ethics" topic, the reading will be Chapter 8 from Michael J. Quinn. Ethics for the Information Age, 4th Edition. Boston, MA: Addison-Wesley, 2011 (available electronically from the Monash library reading list).

Monash Library Unit Reading List (if applicable to the unit)
http://readinglists.lib.monash.edu/index.html

Faculty of Information Technology Style Guide

Feedback to you

Examination/other end-of-semester assessment feedback may take the form of feedback classes, provision of sample answers or other group feedback after official results have been published. Please check with your lecturer on the feedback provided and take advantage of this prior to requesting individual consultations with staff. If your unit has an examination, you may request to view your examination script booklet, see http://intranet.monash.edu.au/infotech/resources/students/procedures/request-to-view-exam-scripts.html

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Graded assignments without comments
- Quiz results
- Solutions to tutes, labs and assignments

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: http://www.monash.edu.au/exams/special-consideration.html

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Resubmission of assignments

If students do not attend a laboratory class, they cannot submit work for that assessment later. Late or resubmissions may be permitted at the discretion of the demonstrator or lecturer, for example if there have been technical difficulties during the laboratory class.

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at http://www.infotech.monash.edu.au/resources/student/forms/. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz). Please note that it is your responsibility to retain copies of your assessments.

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.

Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.

Stephen R. Schach. (2008). *Object-Oriented Software Engineering*. (1st Edition) McGraw-Hill (ISBN: 978-0-07-352333-0).

Recommended Resources

Note: Schach's "Object-Oriented & Classical Software Engineering", 7th Edition and 8th Edition are very similar, and can be used in place of the prescribed textbook mentioned above.

Examination material or equipment

The exam will be an "open book" exam. Students may bring in textbooks, any of the unit teaching material and any notes they have made themselves. More details will be provided on the unit website prior to the exam.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at: www.policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Student Academic Integrity Policy and Student Academic Integrity: Managing Plagiarism and Collusion Procedures ; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.h
- Assessment in Coursework Programs; http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po
- Special Consideration; http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.ht
- Grading Scale; http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html
- Discipline: Student Policy; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html
- Academic Calendar and Semesters; http://www.monash.edu.au/students/dates/
- Orientation and Transition; http://intranet.monash.edu.au/infotech/resources/students/orientation/
- Academic and Administrative Complaints and Grievances Policy; http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.h

Faculty resources and policies

Important student resources including Faculty policies are located at http://intranet.monash.edu.au/infotech/resources/students/

Graduate Attributes Policy

http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.ht

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at http://www.monash.edu.au/students. For Malaysia see http://www.monash.edu.my/Student-services, and for South Africa see http://www.monash.ac.za/current/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Malaysia, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.

Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

- Website: http://www.monash.edu/equity-diversity/disability/index.html
- Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Commuity Services at 03 55146018 at Malaysia
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Malaysia Campus