



MONASH University
Information Technology

FIT1010
Introduction to software engineering

Unit Guide

Semester 2, 2010

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT1010 Introduction to software engineering - Semester 2, 2010

Chief Examiner:

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Lecturer(s) / Leader(s):

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Additional communication information:

Lecturer consultation time: Students will be informed in first lecture.

Lecturer available immediately after lectures for quick questions.

Please email for an appointment at other times.

Lecturer's weekly timetable will be posted on office door.

Weekly help consultation with a tutor will be scheduled from week 2.

Introduction

Welcome to FIT1010 Introduction to Software Engineering for semester 2, 2009.

Unit synopsis

This unit provides an introduction to the discipline of Software Engineering. The emphasis is upon a broad coverage of the areas, since students will at this early stage not have adequate programming skills to tackle many of the topics in greater depth. 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.

Learning outcomes

At the completion of this unit students will have:

- an understanding of the breadth and nature of the discipline of Software Engineering;
- an understanding of the effect and implications of complexity in large software systems;
- an understanding of the issues in constructing large software systems from its components, and the nature and design of those components;
- an awareness of the responsibilities placed upon a software engineer;
- an ability to use basic modelling techniques to define and describe the behaviour of software systems;
- an understanding of common software team structures and have developed practical skills in solving small problems in teams.

Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk, 1 hr tutorial/wk

Workload

Workload commitments for students are:

- two hours of lectures and
- one hour tutorial (requiring advance preparation)
- two hours laboratory (requiring advance preparation)
- a minimum of 7 hours of personal study each week in order to satisfy the reading and assessment expectations.

Unit relationships

Prerequisites

FIT1002 or equivalent

Prohibitions

CSE1401

Teaching and learning method

Teaching approach

Lectures will be used to teach the material, with examples. Most lectures will have an associated reading from the prescribed text book; the powerpoint slides for the relevant textbook sections will be available online prior to the lecture, and will be useful as a lecture summary. The lecture slides in most cases will not be made available, as they are intended for presentation mode teaching, not as a lecture summary. If material is presented in the lectures that is not covered in the textbook summary, a summary version will be provided after the lecture.

Tutorials will be review and discussion classes, based around tutorial problem sheets. Students are expected to attempt the problems before the tutorial. The tutor will facilitate discussion and provide feedback on student solutions.

The **laboratory** (or **prac**) **classes** are held in computer labs and students will build their practical problem solving and programming skills by working through assessed tasks, sometimes individually, sometimes in teams. The lab demonstrator will help students as requested, and may at times talk about issues that have arisen to the class as a whole.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, <http://mutts.monash.edu.au/MUTTS/>

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: <http://allocate.its.monash.edu.au/>

Unit Schedule

Week	Date*	Topic	Key dates
1	19/07/10	Overview & Background	Weekly topics may change depending on availability of guest lecturers. Schedule will be confirmed in first lecture.
2	26/07/10	Software Process & Lifecycles	
3	02/08/10	Teams	
4	09/08/10	Analysis	
5	16/08/10	Design	
6	23/08/10	Modules	
7	30/08/10	Implementation	
8	06/09/10	Testing	
9	13/09/10	Formal methods	

10	20/09/10	Ethics	
Mid semester break			
11	04/10/10	Tools	
12	11/10/10	Usability	
13	18/10/10	Revision	

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

Improvements to this unit

This year only minor changes have been made to the unit, including shifting from Blackboard to Moodle.

A Monquest evaluation of the teaching in this unit will be conducted towards the end of semester.

Staff-Student Meetings: Students also have the opportunity to provide feedback during the semester via student representatives at the Clayton School of IT Staff-Student meetings. Information about who your reps are and minutes of previous meetings are available at:

<http://www.infotech.monash.edu.au/resources/student/staff-student-meetings/clayton/2010>

Unit Resources

Prescribed text(s) and readings

Required Textbook:

Stephen R. Schach: Object-Oriented Software Engineering, McGraw-Hill 2008. ISBN 2008978-0-07-352333-0 (Available in bookshop)

(Students can also use Stephen R. Schach: Object-Oriented and Classical Software Engineering, 7th Edition,, if they have obtained a 2nd hand copy.)

Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

Recommended text(s) and readings

Pressman: Software Engineering - A practitioner's approach, McGraw-Hill.

Sommerville, Software Engineering, Addison-Wesley.

Langford: Practical Computer Ethics, McGraw-Hill.

Required software and/or hardware

You will use the following software in the laboratory classes.:

- Java Version 6 Update 1 (download from Sun Microsystems)
- Blue-J
- UMLet (or other UML editor, approved by demonstrator)
- Firefox or Internet Explorer browser

Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook.

The software will be available for download from the web, and from the MUSO web site. For several packages we provide local copies speeding up downloads and guaranteeing you get the version we use in labs.

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to 6 hours per week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

- Lecture notes including required readings;
- Weekly tutorial exercises with sample solutions;
- Weekly laboratory tasks (assessed);
- A sample examination and suggested solution;
- Supplementary material;
- Access to a past examination;
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The FIT1010 unit web site on Moodle, where resources outlined above will be made available.

Assessment

Overview

Examination (2 hours): 60%; In-semester assessment: 40%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit.

The unit is assessed with weekly quizzes, tutorial attendance and participation, practical class assessment, assessment of work folio and a two hour closed book examination. There are also the standard Faculty hurdle requirements.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website:

<http://www.infotech.monash.edu.au/resources/student/forms/>

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

Assignment submission and preparation requirements will be detailed in each assignment specification. 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.infotech.monash.edu.au/resources/student/equity/special-consideration.html>.

• Assignment task 1

Title:

Description:

Weekly on-line multiple choice quizzes

Weighting:

5%

Criteria for assessment:

Due date:

These will be open on line each week and must be completed before Monday 12noon

- **Assignment task 2**

Title:

Practical class assessments

Description:

Range of tasks, from team exercises, software design, implementation and a group project.

Weighting:

25%

Criteria for assessment:

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, students must submit their work at the end of the lab class (other than the final group project, which will have a common deadline for all students).

Due date:

Held during practical class in week 10

- **Assignment task 3**

Title:

Work Folio

Description:

The work folio will contain all notes, designs and solutions for tutorial exercise work as well as practical class assessment tasks. These will be assessed on a random basis during prac classes on a random basis (4-5 times) throughout the semester.

Weighting:

5%

Criteria for assessment:

A set of guidelines for folios is provided online. In summary, they will be assessed for completeness, clarity, chronology (organisation generally), and preparation.

Due date:

Will be assessed in tutorial in week 13

- **Assignment task 4**

Title:

Tutorial attendance and participation

Description:

Students will work on individual and group based tutorial exercises that align with that week's lecture objectives.

Weighting:

5%

Criteria for assessment:

Students will be assessed on their attendance at tutorials and their participation during the tutorials, such as group work on exercises and contributions to discussions.

Due date:

Each tutorial from week 2 to week 13

Examination

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

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms:
<http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>

Late assignment

Prac assessments must be submitted at the end of the prac class and no late submissions will be accepted, unless a dispensation is given by the demonstrator or lecturer.

Return dates

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

Feedback

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

Informal feedback on progress in labs/tutes

Graded assignments with comments

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Graded assignments without comments

Quiz results

Solutions to tutes, labs and assignments

Appendix

Please visit the following URL: <http://www.infotech.monash.edu.au/units/appendix.html> for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams