MONASH University

FIT1010
Introduction to software engineering

Unit Guide

Semester 2, 2009

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FIT1010 Introduction to software engineering - Semester 2, 2009

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Lecturer(s) / Leader(s):

Clayton

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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 3.

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Introduction

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

Unit synopsis

The 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

By the completion of the unit students will:

1. understand the breadth and nature of the discipline of software engineering;
2. understand the effect and implications of complexity in large software systems;
3. understand the issues in constructing large software systems from its components, and the nature and design of those components;
4. be aware of the responsibilities placed upon a software engineer;
5. be able to use basic modelling techniques to define and describe the behaviour of software systems; and
6. have an understanding of common software team structures and have developed practical skills in solving small problems in teams.

Contact hours

5 hrs/week

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 inorder to satisfy the reading and assessment expectations.

Unit relationships

Prerequisites

FIT1002 (or equivalent including CSE1301 and ENG1060)

Prohibitions

CSE1401

Relationships

FIT1010 is a first year core unit in the Bachelor of Software Engineering (BSE) and an elective in the Bachelor of Computer Science (BCS).

Before attempting this unit you should have satisfactorily completed FIT1002 or equivalent introductory programming unit in Java, C or an equivalent programming language (including CSE1301 and ENG1060), or equivalent. Mid-year entry students, or students repeating FIT1002, may take FIT1010 at the same time as FIT1002.

This unit introduces material that will be covered in more depth in the common core unit FIT2001 System Analysis and Design and in the BSE core unit FIT2024 Software Engineering Practice.

Teaching and learning method

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.cc.monash.edu.au/

Unit Schedule

Week	Topic	Key dates
1	Overview & Background	Weekly topics may change depending on availability of guest lecturers. Schedule will be confirmed in first lecture.
2	Software Process & Lifecycles	
3	Teams	
4	Analysis	
5	Design	
6	Modules	
7	Implementation	
8	Testing	
9	Formal methods	
10	Ethics	Unit test in practicals this week
Mid semester break		
11	Tools	
12	Usability	
13	Revision	Folio assessed in tutes this week

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)

OR Stephen R. Schach: Object-Oriented and Classical Software Engineering, 7th Edition, 2007. (Second hand copies of this may be available).

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
- 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 <u>minimum system configuration</u> 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:

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 past examination papers;
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The FIT1010 unit web site on Blackboard, where resources outlined above will be made available.

Assessment

Overview

Examination (2 hours): 60%; Laboratory classes/Tutorials/Assignments/Test: 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 44% then a mark of no greater than 44-N will be recorded for the unit.

The unit is assessed with a unit test, 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 task 1

  Title:
  Description:
    Weekly on-line multiple choice quizes
  Weighting:
    5%
  Due date:
    These will be open on line each week and must be completed before the tutorial

- ### Assignment task 2

  Title:
    Practical class assessments
  Description:
    Range of tasks, from team exercises, software design, implementation and a group project.
  Weighting:
    25%
  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.

    Weighting:
    > 5%

    Due date:
    > Will be assessed in tutorial in week 13

- **Assignment task 4**

    Title:
    > Tutorial attendance and participation

    Description:
    > 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.

    Weighting:
    > 5%

    Due date:
    > Each tutorial from week 2 to week 13

Examination

- **Weighting:** 60%
  Length: 2 hours
  Type (open/closed book): closed book

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

Return dates

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

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