MONASH University

FIT1010
Introduction to software engineering

Unit guide

Semester 2, 2008

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FIT1010 Introduction to software engineering - Semester 2 , 2008

Unit leader :

Ann Nicholson

Lecturer(s) :

Clayton

- Ann Nicholson

Tutors(s) :

Clayton

- Christopher Groszek (TBC)
- Margaret Walsh (TBC)
- (Other TBC)

Introduction

Welcome to FIT1010 Introduction to Software Engineering for semester 2, 2007.

Unit synopsis

ASCED Discipline Group classification: 020103 Programming

The subject 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

Knowledge and Understanding

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.

Attitudes, Values and Beliefs

4. be aware of the responsibilities placed upon a software engineer;

Practical Skills

5. be able to use basic modelling techniques to define and describe the behaviour of software systems;

6. be able to apply some basic measurement techniques to software systems;

Relationships, Communication and TeamWork

7. have an understanding of common software team structures and have developed practical skills in solving small problems in teams.

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

Before attempting this unit you must 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 BSE students will be allowed to take FIT1002 as a co-requisite unit, while BCS students who have failed FIT1002 in Semester 1 may also take this unit while repeating FIT1002.

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.

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.

Continuous improvement

Monash is committed to ‘Excellence in education' and strives for the highest possible quality in teaching and learning. To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. Two of the formal ways that you are invited to provide feedback are through Unit Evaluations and through Monquest Teaching Evaluations.

One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. It is Monash policy for every unit offered to be evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to "have their say". The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Student Evaluations

The Faculty of IT administers the Unit Evaluation surveys online through the my.monash portal, although for some smaller classes there may be alternative evaluations conducted in class.

If you wish to view how previous students rated this unit, please go to
http://www.monash.edu.au/unit-evaluation-reports/

Over the past few years the Faculty of Information Technology has made a number of improvements to its courses as a result of unit evaluation feedback. Some of these include systematic analysis and planning of unit improvements, and consistent assignment return guidelines.

Monquest Teaching Evaluation surveys may be used by some of your academic staff this semester. They are administered by the Centre for Higher Education Quality (CHEQ) and may be completed in class with a facilitator or on-line through the my.monash portal. The data provided to lecturers is completely anonymous.
Monquest surveys provide academic staff with evidence of the effectiveness of their teaching and identify areas for improvement. Individual Monquest reports are confidential, however, you can see the summary results of Monquest evaluations for 2006 at http://www.adm.monash.edu.au/cheq/evaluations/monquest/profiles/index.html

Improvements to this unit

Student feedback from 2006 (material prepared by Prof. Heinz Schmidt and delivered by Dr. Linda McIver) was considered and the following changes were made to the unit for 2007 (by A/Prof. Ann Nicholson):-

- The written assignment was removed, with additional weight being given to the practical class assessment
- There were no longer marks given for tutorial work, however the work folio was marked as a whole at the end of semester
- Rational Rose was still introduced but students are not required to use it
- We have changed the examples used in the practical class work, in particular removing the unpopular banking example.

Following feedback from 2007, the following changes have been made for 2008 delivery.

- Attendance and participation at tutorials will be assessed
- The folio will be marked at regular intervals throughout the semester
- This year we will trial the new Blackboard online test system

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

Staff-Student Meetings: Studentalso have the opportunity to provide feedback during the semester viastudent

representatives at the Clayton School of IT Staff-Studentmeetings. Information Information about who your reps are and minutesof previous meetings are available at:

http://www.infotech.monash.edu.au/resources/student/staff-student-meetings/clayton/2007/

In Semester 2, 2008, the first staff-student meeting 11th August, 1pm.

Unit staff - contact details

Unit leader

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Associate Professor
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Lecturer(s) :

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Margaret Walsh (TBC)

Additional communication information

Lecturer consultation time: Tuesday 11-12noon or Tuesday 4-5pm (will vary depending on the week).

Lecturer available immediately after Thursday lecture for quick questions.

Please email for an appointment at other times.

Note that the lecturer's availability is limited, as currently working part-time. My weekly timetable will be posted on my door.

Weekly help consultation with a tutor will be scheduled from week 3.

Teaching and learning method

Tutorial allocation

On-campus students should register for tutorials/laboratories using Allocate+.

BSE students who are doing FIT1002 as a co-req (mid-year entry and students who failed FIT1002 in semester 1) will be asked to enrol in a particular practical class, where the demonstrator will be able to take into account any issues arising with pre-requisite knowledge. These students will be contact individually about this via email in week 1.

Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

Unit Schedule

Week	Topic	Key dates
1	Overview & Background	
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
11	Tools	
Mid semester break		
12	Usability	
13	Revision	Folio assessed in tutes this week

Unit Resources

Prescribed text(s) and readings

Stephen R. Schach: Object-Oriented Software Engineering, McGraw-Hill. ISBN 2008978-0-07-352333-0 (Required Textbook).

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 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:

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 MUSO, where resources outlined above will be made available.

Library access

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to http://www.lib.monash.edu.au. Be sure to obtain a copy of the Library Guide, and if necessary, the instructions for remote access from the library website.

Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (http://moodle.monash.edu.au) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: http://my.monash.edu.au

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: http://www.monash.edu.au/muso/support/students/downloadables-student.html

You can contact the MUSO Support by: Phone: (+61 3) 9903 1268

For further contact information including operational hours, please visit:
http://www.monash.edu.au/muso/support/students/contact.html

Further information can be obtained from the MUSO support site:
http://www.monash.edu.au/muso/support/index.html

Assessment

Unit assessment policy

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 hurdle requirements. For a pass you need to get as a minimum:

1. achieve no less than 40% of the possible marks for the practical class assessments (10/25)

2. achieve no less than 40% of the possible marks in the exam (24/60)

3. 50/100 of the total marks for FIT1010.

If a student does not achieve 40% or more in the unit examination or the unit non-examination assessment then a mark of no greater than 44-N will be recorded for the unit.

Assignment tasks

- **Assignment Task**

  Title :

  Description :

  On-line multiple choice test

  Weighting : 5%

  Criteria for assessment :

  Due date : Held during practical class in week 9
- **Assignment Task**

  Title : Practical class assessments

  Description :

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

  Weighting : 25%

  Criteria for assessment :

  Due date : Held during practical class in week 10
- **Assignment Task**

  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%

Criteria for assessment :

Due date : Will be assessed in tutorial in week 13

- ### Assignment Task

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%

Criteria for assessment :

Due date : Each tutorial from week 2 to week 13

Examinations

- ### Examination

Weighting : 60%

Length : 2 hours

Type (open/closed book) : closed book

Assignment submission

Practical class assessments will be marked in class, but will also be submitted by **electronic** submission to **the FIT1010 MUSO site.**

University and Faculty policy on assessment

Due dates and extensions

The due dates for the submission of assignments are given in the previous section. 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 seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

If you do not attend a practical class you will be marked as ``absent'' and lose the possible marks for that class. If you have an illness or emergency and miss a practical class where assessment is due, you must complete an Absentee Form available at the General Office (Ground Floor, Building 75), and hand it in with an attached medical certificate or accident report or similar documentation, as soon as possible. In exceptional circumstances a letter of explanation will be considered. In any event, written documentation is required.

In the case of such an illness or emergency, you can make up for a missed class by going to another tutorial or practical in that week assuming there is space in the class. You should email the FIT1010 Admin Tutor (cl-fit1010-admin@infotech.monash.edu.au) to organise this. You should not go to another prac or tute without first contacting the Admin Tutor.

Late assignment

Return dates

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

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at http://www.policy.monash.edu/policy-bank/academic/education/assessment/

We will aim to have the unit test results made available to you within two weeks of the test.

Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask you to acquaint yourself with Student Rights and Responsibilities (http://www.infotech.monash.edu.au/about/committees-groups/facboard/policies/studrights.html) and the Faculty regulations that apply to students detected cheating as these will be applied in all detected cases.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with

another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications are non-discriminatory in all respects.

Students with disabilities

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

Deferred assessment and special consideration

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at

http://www.monash.edu.au/exams/special-consideration.html. Contact the Faculty's Student Services staff at your campus for further information and advice.