MONASH University

FIT3038
Software Engineering project

Unit guide

Semester 2, 2008

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FIT3038 Software Engineering project - Semester 2 , 2008

Unit leader :

Peter Tischer

Lecturer(s) :

Clayton

- Peter Tischer

Malaysia

- Kar Loke

Introduction

Welcome to FIT3038 Software Engineering Project. It is a 6 credit point unit offered in second semester during 2008. This unit offers you an opportunity to tackle a significantly larger software design and implementation that you have been able to do previously in your course. This will be done as part of a group. The project topic will be set by the lecturer and all groups will work on the same topic. Throughout the course of the project you will meet with an academic group supervisor who will play the role of the client as well as guiding and assessing your work.

Unit synopsis

ASCED: 020103 Programming

This subject is intended to provide students with practical experience relating to the construction of software according to software engineering principles. Students are expected to undertake the design and implementation of a program. All aspects of the software engineering process will be covered including requirements analysis, specification, design, coding, testing and maintenance. Students will generally work in a group, and interaction with that group will be an integral part of the project. There may be lectures in this subject but the lectures will not be the primary way of conducting the project. The primary way will be via regular meetings between groups of students and their group supervisor. As a rough guide, this subject should require about one hundred and fifty hours of effort from the student during the semester.

Learning outcomes

Knowledge and Understanding

At the completion of this unit, students will be able to

K1 understand the main phases of the development of a software system, in particular, analysis and design.

K2 understand the aim of analysis and requirements engineering, (requirements elicitation, identification and negotiation).

K3 communicate the results of analysis in documents.

K4 understand the principles of good software design.

K5 compare and evaluate different design choices based on the requirements of the software system.

K6 communicate the details of a design in documents which can be used to direct an implementation team.

K7 implement software according to specifications.

K8 integrate a software testing program into the implementation plan for a software system.

K9 understand the demands that the requirements for software maintenance place on a software system.

K10 understand and put into practice a process for analysing problems in a methodical manner.

K11 understand aspects of project management including scheduling, risk analysis and contingency planning.

K12 understand how to work in a group environment.

K13 identify and communicate effectively the main components of an analysis, design, implementation progress reports and so on.

Attitudes, Values and Beliefs

At the completion of this unit, students will have attitudes that allow them to:

A1 adopt a methodical approach to developing large software systems.

A2 recognise the importance of a thorough analysis phase.

A3 understand the need to avoid errors of omission by constructing and consulting checklists.

A4 adopt a critical approach to evaluating potential solutions.

A5 appreciate the potential difficulties in working in a group setting.

A6 communicate effectively by putting themselves in the position of the intended audience of the communication.

Practical Skills

At the completion of this unit, students will be able to

P1 undertake an analysis of the requirements of a software system.

P2 identify and evaluate potential designs which meet the requirements of a software system.

P3 produce appropriate documentation for communicating requirements and design decisions.

P4 produce an implementation plan which uses program testing as an integral part of the implementation phase.

Relationships, Communication and TeamWork

At the completion of this unit, students will be able to

R1 participate in a group that is working towards a common goal.

R2 plan, conduct and participate in group meetings.

R3 work together with colleagues to enable them to develop themselves professionally.

R4 communicate effectively by putting themselves in the position of the intended audience of the communication.

Workload

The university standard for a 6-credit point unit is 12 hours of work per week over a semester. Students must be prepared to commit to at least 10 hours of private study or group work per week, in addition to the contact hours (2 hours per week).

Unit relationships

Prerequisites

Before attempting this unit you must have satisfactorily completed

CSE3308 or CSC3080 or FIT3077 or equivalent.

Relationships

FIT3038 is a core unit in the Bachelor of Computer Science degree and the Bachelor of Software Engineering degree.

There are no units for which this is a prerequisite.

You may not study this unit and CSE3302, CSC3020 in your degree.

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

This is the first time this unit has been offered, although experiences from the predecessor unit , CSE3302, have been used in planning this unit.

Unit staff - contact details

Unit leader

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Lecturer(s) :

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Mr Kar Loke

Teaching and learning method

There will be one lecture per week.

There will be one group meeting with the group supervisor per week. Meetings may take half an hour to an hour.

Timetable information

For information on timetabling for on-campus classes at all Australian campuses please refer to MUTTS, http://mutts.monash.edu.au/MUTTS/

At Clayton campus, the lecture is scheduled for 11.00am on Monday in room 135, building 26.

Tutorial allocation

Groups will indicate their preference for a weekly meeting time to the group supervisor.

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	Organise group, analysis of problem	
2	Analysis of problem, requirements engineering	
3	Problem definition, requirements engineering	
4	Analysis research and design	
5	Requirements negotiation, design of solution	
6	Design of solution	
7	Implementation	
8	Quality assurance, test programme	
9	Implementation	
10	Implementation, prototype demonstration	
11	Software maintenance	
Mid semester break		
12	Perfective maintenance	
13	Project review	

Unit Resources

Prescribed text(s) and readings

There are no prescribed text books for this unit. Individual group supervisors may recommend additional reading.

Recommended text(s) and readings

Any textbooks required will be determined by the project topic that is offered.

Equipment and consumables required or provided

The project will require access to a computer and programming environments.

Study resources

Study resources we will provide for your study are:

The lecture slot will be used to provide background information about the project topic.

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

Sunway Campus Assignment Schedule - TBA.

Clayton Campus Assignment Schedule:

Continuous assessment: 50% with 5 fortnightly milestones each worth 10% and requiring submission of documentation or demonstration of program function.

Final assessment: 50% based on final demonstration of product and final submission of software configuration.

Assignment tasks

- **Assignment Task**

  Title : Project Analysis and Requirements Engineering

  Description :

  Weighting : 10%

  Criteria for assessment :

  Due date : End of week 4
- **Assignment Task**

  Title : Project Design

  Description :

  Weighting : 10%

  Criteria for assessment :

  Due date : End of week 6
- **Assignment Task**

  Title : Project Implementation

  Description :

  Weighting : 10%

  Criteria for assessment :

  Due date : End of week 8

- **Assignment Task**

  Title : Prototype Demonstration

  Description :

  Weighting : 10%

  Criteria for assessment :

  Due date : End of week 10
- **Assignment Task**

  Title : Project Maintenance, final demonstration

  Description :

  Weighting : 10%

  Criteria for assessment :

  Due date : End of week 12
- **Assignment Task**

  Title : Software Configuration, project review

  Description :

  Weighting : 50%

  Criteria for assessment :

  Due date : End of week 13
- **Assignment Task**

  Title :

  Description :

  Weighting :

  Criteria for assessment :

  Due date :

Assignment submission

Assignments should be submitted to the group supervisor by the due dates. A penalty of 10% per day late (including weekends) will be applied to each assignment.

Assignment coversheets

All submitted assignments must incldue a coversheet, obtained from the "Student assignment coversheets" (http://infotech.monash.edu.au/resources/students/assignments) page on the faculty website.

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.

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Late assignment

Assignments received after the due date will be subject to a penalty of 10% per day per assignment (including weekends).

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 assignment results made available to you within two weeks after assignment receipt.

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.