FIT4002
Software engineering studio project

Unit guide

Semester 1, 2009

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FIT4002 Software engineering studio project - Semester 1, 2009

Unit leader:

Dr Sita Ramakrishnan

Lecturer(s):

Clayton

• Sita Ramakrishnan

Introduction

Students will undertake a large project and work in groups on a software project for a client. The client may be internal to Monash or from the industry or research organisation. In general, projects involve all aspects of the system development lifecycle. Groups are responsible for their own project management, with guidance from a supervisor.

Software Engineering Studio unit is a 12 point, full year unit. Students have a lecture/seminar series scheduled for 2 hours / week plus other activities as outlined in the assessment details. Students undertake most of their team work in the MUSE Studio lab.

Unit synopsis

Students will undertake a large project and work in groups on a software project for a client. The client may be internal to Monash or from the industry or research organisation. In general, projects involve all aspects of the system development lifecycle. Groups are responsible for their own project management, with guidance from a supervisor. Some projects will warrant students working in pairs or individually.

Learning outcomes

At the completion of this unit, students will have:

Experience of:

all stages in the development of a SE projectthe role and responsibilities of clients and developers in a SE project

Understanding of:

the way in which computer systems are designed, developed and implementedthe role of methodologies, tools and techniques the processes and components of a quality system

Skills in:

planning and managing the full range of activities in an SE projectworking productively in a team and individuallycommunicating effectively with clients and usersdeveloping and delivering on time a computer system that meets the specified requirements
Attitudes:

adopt a systematic and professional approach to the production of quality computer systems
enquiring mind
ethical
behaviour

Workload

For SE Studio unit, workload commitments are for 2 semesters of study:

- two-hour lecture/seminar series
- laboratory assessment on ongoing basis as per milestones & hurdles given in the assessment component (requiring advance preparation)
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.
- 1 group presentation & assessment interviews (grp & individual) per semester
- You will need to allocate up to 5 hours per week in some weeks

Unit relationships

Prerequisites

Before attempting this unit you must have satisfactorily completed BUS2176 or equivalent. You should have knowledge of Requirement engineering, data modelling, object-oriented system analysis and design, software engineering principles and practice, SE tools, project management, software construction, testing, systems documentation. Requirement engineering, data modelling, object-oriented system analysis and design, software engineering principles and practice, SE tools, project management, software construction, testing, systems documentation.

Relationships

FIT4002 is a core unit in the Bachelor of Software Engineering program. Before attempting this unit you must have satisfactorily completed BUS2176 or equivalent. You should have knowledge of: Requirement engineering, data modelling, object-oriented system analysis and design, software engineering principles and practice, SE tools, project management, software construction, testing, systems documentation. Requirement engineering, data modelling, object-oriented system analysis and design, software engineering principles and practice, SE tools, project management, software construction, testing, systems documentation from the core units of years 1-3 in BSE or equivalent units from a previous study. It is only available for the BSE Program at Clayton campus.

Continuous improvement

Monash is committed to ‘Excellence in education’ (Monash Directions 2025 - http://www.monash.edu.au/about/monash-directions/directions.html) 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. One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. The University’s Unit Evaluation policy (http://www.policy_monash.edu/policy-bank/academic/education/quality/unit-evaluation-policy.html) requires that every unit offered is 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.

Learning outcomes
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Faculties have the option of administering the Unit Evaluation survey online through the my.monash portal or in class. Lecturers will inform students of the method being used for this unit towards the end of the semester.

Student Evaluations

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

Improvements to this unit

Monquest evaluation is planned for 2009.

Unit staff - contact details

Unit leader

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Lecturer(s) :

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Additional communication information

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Teaching and learning method

Full year Team Project sourced from the industry.

Students work usually in teams of 4-5.

Teaching/Learning in terms of seminars from the Lecturer to assist with the SE project development. Details laid out in the handbook available on the MUSO site regarding expectations & responsibilities from the supervisor, client & student side. Milestones are spelt out in the handbook which needs to be adhered to warrant marks for individuals & teams.

Timetable information

FIT4002:

Tuesdays 10 -12noon Bldg 26/Rm 135 / MUSE Studio Bldg 26/Rm G18
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

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Study guide</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>sem 1: Welcome to Unit/Admin/Team selection/Project selection.</td>
<td>Lectures/Seminars resources online on MUSO</td>
<td>sem 2: Hurdle - Update on Project status</td>
</tr>
<tr>
<td>2</td>
<td>sem1: IEEE Standards for SRS, QA, Test plans;</td>
<td>see MUSO for IEEE Standards to be used in the Projects</td>
<td>fortnightly team meeting with supervisor</td>
</tr>
<tr>
<td>3</td>
<td>sem1: proj management; CVS/SVN;</td>
<td>Notes on unit site in MUSO</td>
<td>sem 1 &amp; 2: Progress report fortnightly odd weeks except week 1, sem1 &amp; week 13 sem 2; sem 1- indiv. seminar preference to Lecturer; prelim. proj. plan(PMP);</td>
</tr>
<tr>
<td>4</td>
<td>sem 1: Function Point; Test oriented dev;</td>
<td></td>
<td>fortnightly team meeting with supervisor;</td>
</tr>
<tr>
<td>5</td>
<td>sem 1: Requirement Engineering;</td>
<td></td>
<td>Penultimate PMP; Legal agreements signed by client &amp; students; group peer assessment; Prelim. software req.; Preliminary Project Management Report</td>
</tr>
<tr>
<td>6</td>
<td>sem 1: Software process;</td>
<td></td>
<td>fortnightly team meeting with supervisor</td>
</tr>
<tr>
<td></td>
<td>Mid semester break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>sem 1: class seminar series by student teams; sem 1 &amp; 2 : SE Project</td>
<td></td>
<td>sem 1: prelim software prototype;</td>
</tr>
<tr>
<td>8</td>
<td>sem 1: class seminar series by student teams; sem 1 &amp; 2: SE Project</td>
<td></td>
<td>fortnightly team meeting with supervisor</td>
</tr>
</tbody>
</table>
Unit Resources

Prescribed text(s) and readings

Please refer to the Recommended text list below as there are no set texts that students must purchase for this unit.

Recommended text(s) and readings


Required software and/or hardware

customised SE lab called MUSE lab at Clayton with the standard lab image plus high end software engineering & testing tools from IBM/Rational, Websphere software from IBM, Testing tools from Compuware. Open source tools such as Eclipse, Junit & coverage testing tools

Study resources

Study resources we will provide for your study are:

FIT4002 is a final year capstone project which runs over 2 semesters.

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

weekly lecture/seminar series topics are also available at the site.

Hurdle dates, Milestones, Interviews, Presentations, Reports due dates/weeks are available on the website above.
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.

The Educational Library and Media Resources (LMR) is also a very resourceful place to visit at http://www.education.monash.edu.au/library/

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

Schedule of Deliverables

While the software life cycle, process and organisation may be different for each project, overall milestones, hurdles and timelines are the same for grading and external project tracking by the unit leader and the academic supervising the project. Some of the assessed deliverables are ‘major’ efforts and most are group efforts and therefore need to be developed incrementally. To cater for different processes and life cycles, we refer to multiple versions of key milestone documents and product releases: our terminology distinguishes an Preliminary Version, a Penultimate Version and a Final Version. The preliminary and penultimate versions are assessed as a major assessment item in the first and second semester, respectively. They are also the basis for client sign-off before the
end of the respective semester. Further improvements will then refine some of these documents and software packages until the end of the respective semester.

Depending on the agreed process (which may differ from project to project) and possibly depending on agreements with the client, subsequent revisions will be very rare and must be approved by a rigorous revision control protocol, where any ramifications, in terms of further work and resources implied must be considered carefully beside the desirability of the change from the viewpoint of the client, and must be balanced against the original plan and other tasks still planned.

In any event the penultimate version is going to be the key deliverable for the purposes of hurdle requirements and also for client sign-off on the major project results in second semester.

Hurdle Points: Attendance in lectures and seminars (held in the scheduled lecture hours) is mandatory and will be recorded. Many lectures and seminars are for training purposes in group collaboration, project management, methods and tools.

Regular supervision meetings and progress reports are hurdle points. Meetings and hurdle deliverables follow a weekly or fortnightly pattern.

In addition, some assessable items must be delivered at a particular hurdle point (a) to define major group work in achievable chunks and (b) for the supervisor to provide early feedback and help steer group work in the right direction.

Hurdle Requirements

The individual student must miss no more than 3/12 meetings and no more than 3/12 lectures. Moreover, the group must not deliver late more than 2/6 progress reports in each semester and not more than 2/6 specific hurdles.

Finally, in order to pass the subject, a student must achieve at least 32/65 project marks and 17/35 individual marks.

Milestones

Beside final deliverables, milestones include one-on-one interviews, group walkthroughs, public presentations and seminars (given to all students and supervisors).

Walkthroughs

Walkthroughs are conducted in the MUSE Studio or elsewhere in a meeting with the supervisor and/or the client. Your are required to demonstrate your prototype (1. semester) or product (2. semester) and walk the supervisor and/or client through parts of the accompanying code and design documents (1. semester) or through code and test suite (2. semester) with the help of your development tools.

Since these are installed in the MUSE Studio, you will typically use the MUSE Studio for the walkthrough. The walkthrough is a group effort. Every group member gets the same time allocated for presenting one part or aspect of the system - typically but not necessary her/his own part in the project. The individual mark will reflect the knowledge of the system as displayed by the individual, their presentation skills and handling of questions etc. The group mark reflects the overall merits of the system as demonstrated and presented by all.

Interviews

SWEBOK interviews are short oral exams (15 min) typically conducted in the exam period by a panel of two supervisors. Your supervisors may be prepared to schedule the interview prior to the exam period. SWEBOK interviews make up a major part of your individual marks in this subject.
The interviews are conducted individually and assess your individual knowledge of the project and the application of the Software Engineering Body of Knowledge (SWEBOK) to the project. Since the interviews are short, not all of the SWEBOK can be tested in each interview. The supervisor will randomly pick relevant topics. **You must be prepared for every SWEBOK topic** since you may be examined on any SE knowledge and your skills in applying this knowledge. For example the supervisor may examine your detailed knowledge of the project documents and solutions, define hypothetical changes to your project requirements and ask you to modify your current project solution, or, if s/he so chooses, ask you to demonstrate your practical skills with tools in the MUSE Studio.

Prepare well and revisit your SE textbooks. You are not allowed to use the text book during the interview. However you are allowed to bring your project documents along. I suggest your project keeps one complete set of documents as a binder for this purpose.

The best preparation for the interview is a review of your SWEBOK knowledge BEFORE you perform the corresponding task prior to the interview. Then - come the interview - you will be best prepared to briefly summarise the relevant knowledge, discuss how this is manifested in the project and detail the relevant project artifact (document or software etc).

Individual Seminar: Students give a seminar (approximately 20min plus 5min Q&A time) on a topic of advanced technology. The topic is chosen and assigned by the unit lecturer after students nominate themes of interest - typically of interest to the project. 5. Group Marks

Group marks are given for group deliverables and adjusted according to the individual contribution. The latter is defined by a **contribution factor** as per supervisor assessment of the each project member. The contribution factor is measured in percentage points, i.e., it is given as a mark out of 100. The group peer assessment (per semester) will also be considered by the supervisor in assessing the individual project contribution.

The following adjustment formula will be used $\text{Max}(30, N \times G \times C)$, where $N$ is the number of project members, $G$ the group mark and $C$ the contribution percentage.

**Example 1:** Project W achieves full marks of 30 in semester 1 with even contribution of 20% per team member. Each team member will get a group mark of 30.

**Example 2:** Project X might attract 15 group marks (of the total of 30 marks). Project X has 5 project members contributing 10%, 10%, 20%, 30% and 30% respectively. Then their respective marks will be scaled accordingly to 7.5, 7.5, 15, 22.5 and 22.5 marks.

**Example 3:** Project Y might attract 15 group marks (of the total of 30 marks in semester 1). The project has 5 project members contributing 0%, 0%, 0%, 0% and 100% respectively. Then their respective marks will be adjusted accordingly to 0, 0, 0, 0, 30 marks.

**Example 4:** Project Z attracts 6 group marks (of 30). The project has 5 project members contributing 0%, 0%, 0%, 0% and 100% respectively. Then their respective marks will be scaled accordingly to 0, 0, 0, 0, 30 marks.

For more details: see MUSO site for more details

### Assignment tasks

- **Assignment Task**

  **Title:** FIT4002 is a full year unit worth 100. sem 1 & 2 each worth 50marks. Hurdles must be met as well as Milestones which are worth marks. Due dates are prior to class on the week assigned for assessments. The milestones on MUSO site includes weeks for both sem 1 & 2.

  **Description:**
Full year Project

Weighting : 100%

Criteria for assessment :

Sem 1  Milestone                  Grp Marks Indiv Marks   Assessed
as announced 1 seminar/ student                  5   Lect, superv & peers
10    Software Walkthrough              5   5   Supervisor
10-12 Grp Presentation Project                10   Lecturer & superv
11-13 IndivSWEBOK Interview                  10   Supervisor panel
11    Final PMP and SRS                    15

TOTAL (50)                                30   20

Sem 2

10    Software Walkthrough              5   5   Supervisor
10-12 Grp Presentation Project                10   Lecturer & superv
11-13 IndivSWEBOK Interview                  10   Supervisor panel
11    Final Product and Report               20

TOTAL (50)                                35   15

GRAND TOTAL (100)                            65   35

Due date : see weeks due above

Assignment Task

Title : Group Presentation of Project assessed by Lecturer & Supervisors Week 10-12 (grp mark 10) per sem in a seminar room

Description :

Group presentation

Weighting : 20%

Criteria for assessment :

Please refer to FIT4002 handbook on the Blackboard site for the unit for criteria for assessment.

Due date :

Assignment Task

Title : Final PMP & SRS in sem 1 (Grp mark 15); Final Product & report Week 11 (Grp mark 20) in sem 2

Description :
Assignment submission

FIT4002 is a 2 semester Project unit with a number of hurdles, milestones, group & individual presentations & group & individual interviews. For Details: see 14.4 and handbook online on MUSO site for details. Students meet with the project supervisor every week or fortnight (as arranged), have to complete hurdle & milestone req., participate in class seminars & presentations.

Assignment coversheets

Must use standard cover sheet for assignments from the Faculty 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.

Requests for extensions must be made to the unit lecturer at your campus at least two days before the due date. You will be asked to forward original medical certificates in cases of illness, and may be asked to provide other forms of documentation where necessary. A copy of the email or other written communication of an extension must be attached to the assignment submission.
Late assignment

Assignments received after the due date will be subject to a penalty of 5% per day, including weekends. Assignments received later than one week (seven days) after the due date will not normally be accepted.

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/](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. In this unit, you can read "project submission feedback" as assignment return policy as well as marks to be allocated online by the various project supervisors for their teams (visible after moderated by the unit leader).

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 the University Plagiarism policy and procedure ([http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html](http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html)) which applies to students detected plagiarising.

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.