



Software Engineering Practice (7169) Software Engineering Practice G (6808)

Unit Outline – semester 2, 2009

**Faculty of Information Sciences and Engineering
University of Canberra**

*Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K*

This Unit Outline must be read in conjunction with:

- a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at <http://www.canberra.edu.au/student-services>
- b) *Guide to Student Services at the University of Canberra*, and is available at <http://www.canberra.edu.au/student-services>
- c) Any additional information specified in section 6f.

1: General Information

1a Unit title: Software Engineering Practice; Software Engineering Practice G

1b Unit number: 7169; 6808

1c Semester and year offered: 2 - 2009

1d Credit point value: 3

1e Unit level: 3; G

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2: Academic Content

2a Unit description and learning outcomes

Syllabus: The main emphases in this unit are the theory and practice of software engineering. Topics covered include techniques and processes for managing, specifying, designing, implementing, testing and evolving large software systems. Special attention is given to project and quality management. Critical systems are considered as well as verification and validation strategies and techniques. This unit builds on previous programming and information systems units to achieve its aim of bringing together, for students, various aspects of software engineering encountered in their course, and introduces some new and developing concepts in this discipline.

Learning Outcomes: At the successful completion of the unit a student will be able to start work in a team of software engineers involved in the building of reliable large software systems. Students will be knowledgeable about the principles and applications of requirements engineering, software design, software implementation, software testing and validation techniques and approaches and have a working knowledge of designing software for reuse and with reuse. They will be able to choose a development methodology appropriate to a specific software project; and have a strong background in software project and quality management and related issues of professional ethics.

2b Prerequisites

For SEP: Software Technology 2 AND Systems Analysis and Modeling.

For SEPG: Computers and Programming G.

3: Delivery of Unit and Timetable

3a Delivery mode

This unit will be delivered in traditional mode, that is on campus in a standard semester. Each week there will be a Lecture of two hours and a Tutorial session of two one hour.

3b Schedule of topics/lectures/tutorials/practicals/field classes by week

The UC timetable shows Lecture and Tutorial times. The following timetable represents the pedagogical design of the unit, but as we proceed we may find that modifications will be desirable.

Week	Topic
1	Unit outline; Introduction and Context of IT Project Management
2	Process groups; Integration Management
3	Scope Management; Time Management
4	Cost Management; Quality Management
5	HR Management; Communications Management
6	Risk Management; Procurement Management
7	The SE discipline, professional and ethical responsibility; Socio-technical systems
8	<i>Class free period (Study break)</i>
9	<i>Class free period (Study break)</i>
10	Critical systems; Software processes, the Rational Unified Process, CASE
11	Requirements engineering; Critical systems specification; Formal specification
12	Rapid software development; Software reuse
13	Component based SE; Critical systems development
14	Emerging technologies; Review and Exam hints and tips
15	Final project presentations

4: Unit Resources

4a Lists of required texts/readings

Recommended readings:

- Schwalbe, K. 2006, *Information Technology Project Management* 4th ed. Thomson.
- Sommerville, I. 2007, *Software Engineering* 8th ed. Addison Wesley.

4b Materials and equipment

No special requirements. Students may use the Faculty's computing laboratory resources.

4c Unit website

Various unit resources, such as lecture notes and tutorial tasks, will be accessible via 'LearnOnline' supported by the 'Moodle' software platform.

5: Assessment

5a Assessment overview

Assessment Item (including exams held in the exam period)	Assignments Due	Weighting (total to equal 100%)
1. Weekly Group Presentations	Tute week 2 - 13	20%
2. Individual Project Reflection	Tute week 15	10%
3. Final Project Presentation	Lecture week 15	10%
4. Project Quality	Tute week 15	30%
5. Examination	Exam period	30%
TOTAL		100%

5b Details of each assessment item

- 1. Weekly Group Presentations** are to be made by your project group on the progress of your project development and the associated project management plans.
- 2. Individual Project Reflection.** In this confidential report you will reflect upon your group project and the contributions made by yourself and every other group member to the project's outcome. It provides evidence of you as an aspiring insightful IT practitioner.
- 3. Final Project Presentation** includes the way your group has resolved the given problem, how your group worked together and a demonstration of your system.
- 4. Project Quality** will be assessed through the value and quality the project team's processes and deliverables, including project management plans and how you used them as well as the complete set of system development artefacts.
- 5. Examination:** A three hour closed book examination will be held during the exam period.

5c Special assessment requirements

1) To **Pass** the unit, students need to obtain a mark of **at least 50% in the Continuous Assessment AND at least 50% in the Examination**. Once you have met the conditions for a Pass, higher grades will be awarded on the basis of the highest category below, in which your **TOTAL** mark fits: Credit 65-74, Distinction 75-84, High Distinction 85-100. After all assessment items have been marked and graded, moderation is conducted across all tutorial groups.

2) In all cases, grades in this unit will be awarded solely on the basis of academic merit. The normal exigencies of university life, such as administrative deficiencies or oversights, resource malfunctions or workloads in other units will not be a factor in the determination of grades in this unit.

3) The lecturer/tutor reserves the right to question students orally on any of their submitted work or assessment items.

4) Referencing requirements:

All work quoted from other written sources should be appropriately referenced using the “author-date” (Harvard) style; a citation guide is available in print from the bookshop or at: <http://www.canberra.edu.au/library/attachments/pdf/1887-UC-reference-book-Fawcover.pdf>

5) If there is any doubt with regard to the requirements of any assessment item, the onus lies with the student to obtain relevant information from the unit convenor. Tutors should be, however, the first point of contact in these matters.

6) Late penalties:

Students will be expected to make arrangements with their tutor in advance of the due date for assignments if they expect to be submitting them late. Unless appropriate arrangements have been made, supported by an appropriate valid reason, late submissions will attract a penalty of 5% per day.

7) Submitted Material:

Students are required to keep a copy of all submissions.

5d Supplementary assessment

There will be no supplementary assessment / examination for this unit.

5e Text-matching software

Text-matching software from an external service (such as Turnitin) may be used to check for plagiarism.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for 3cp units, the total notional workload over the fifteen-week semester is assumed to be 150 hours or an average of 10 hours per week. These hours include time spent in classes.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convenor or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

You are strongly advised to attend and pay attention to all lectures. You should prepare in advance and fully participate in tutorials. Group meetings also require attendance and participation.

Material covered in lectures and tutorials is examinable and it is the individual student's responsibility to ensure that they are sufficiently familiar with this material. Attending classes and participating is the best way to ensure this familiarity.

Some material will be available on the unit website; however, do not make the mistake of assuming that this can substitute for class attendance.

6d Required IT skills

In addition to the IT skills assumed by all indirect pre-requisites and direct pre-requisite requirements (given in 2b above), students must have a good understanding of office systems (spreadsheet, word processing, general computer use), Web browsing and the use of Help features in software packages. Students must also manage network access using university accounts, and an account for printing assignments and other materials.

6e Costs

No additional costs will be incurred by students undertaking this unit apart from the normal costs of being a university student, such as books, web access, printing, and consumables.

6f Additional information

Announcements made at lectures or tutorials are deemed to be made to the whole group. Documents published on the unit website are also deemed to be announcements to the whole group, so check it regularly.

7: Student Feedback

All students enrolled in this Unit will have an opportunity to provide anonymous feedback on the Unit at the end of the Semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University's Teaching and Learning Centre (TLC).

8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the Unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.