FIT2001
Systems development

Unit Guide

Semester 2, 2012

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT2001 Systems development - Semester 2, 2012

This unit will provide students with an introduction to systems development using an agile development approach. The unit will focus on the application of UML models to the analysis and design of a system. The unit will introduce students to the nature of systems analysis and design as a problem-solving activity, describe the key elements of analysis and design, and explain the place of the analysis and design phases within the an agile development life cycle. The unit will introduce students to the nature of modelling as an analytical and a communicative process.

Major topics include: Agile development and the role of prototyping in systems development, user interface design, domain modelling with UML class diagrams, process modelling with use-case diagrams, use-case driven development and testing, use-case realisation with sequence diagrams, requirements gathering and the implementation and support phases of systems development.

Mode of Delivery

Caulfield (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Students will be expected to spend a total of 12 hours per week during semester on this unit.

This will include:
Lectures: 2 hours per week
Tutorials/Lab Sessions: 2 hours per week per tutorial

and up to an additional 8 hours in some weeks for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions

BUS2021, CPE2003, CSE1204, CSE1205, GCO1813, GCO2601, GCO2852, GCO2826, IMS1001, IMS1002, IMS1805, IMS2071, IMS9001

Co-requisites

FIT1004 or FIT2010
For students in courses 2380, 2770, 3517 and 2672 who commenced prior to 2011: FIT1008
Chief Examiner

Dr Yuan-Fang Li

Campus Lecturer

Caulfield

David Grant

Tutors

Caulfield

David Grant
Academic Overview

Outcomes

At the completion of this unit students will have

A knowledge and understanding of:

• the roles of systems analysts and designers in agile system development;
• the criteria that can be used to evaluate the quality of a model of a system;
• the purpose of different types of models in the UML;
• the role and application of automated tools in systems modelling.

Developed attitudes that enable them to:

• appreciate that a range of valid solutions exist for any given problem.

Developed the skills to:

• interpret and evaluate systems analysis and systems design models created using UML;
• create analysis and design models using the main elements of UML; namely class, use-case, sequence and robustness diagrams;
• create system test plans and test cases, and conduct system testing;
• create and evaluate models and prototypes of a user interface using storyboards and wireframes;
• apply problem solving techniques at different levels of abstraction and understand the effect this may have on a system specification.

Demonstrated the communication skills necessary to:

• explain the interdependence and relationships between all stake-holders in the systems development process;
• create and understand RFP documents.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:
   a. engage in an internationalised world
   b. exhibit cross-cultural competence
   c. demonstrate ethical values

critical and creative scholars who:

   a. produce innovative solutions to problems
   b. apply research skills to a range of challenges
   c. communicate perceptively and effectively
Assessment Summary

Examination (3 hours): 60%; In-semester assessment: 40%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements specification with UML and prototypes</td>
<td>20%</td>
<td>Assignment 1 due 9 September, 2012</td>
</tr>
<tr>
<td>Design specification and test planning</td>
<td>20%</td>
<td>Assignment 2 due 21 October, 2012</td>
</tr>
<tr>
<td>Examination 1</td>
<td>60%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.

Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Quiz results
- Solutions to tutes, labs and assignments

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:
http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this unit

Previous feedback has highlighted that unit is strong in its core content and is reflective of contemporary system development practice. Students have appreciated the opportunity to use CASE and prototyping tools.

Student feedback has indicated that the delivery of the content sometimes seemed 'out of order' and it differed from the order of the material in the textbook. As a result the delivery of the content has been
changed to better reflect the textbook.

Students also indicated that the number of individual assignments and their associated workload was excessive and limited the amount of effort they were able to devote to the tasks. The assignment tasks have been reduced to two major assignments both of which are group-based. This will give students the opportunity to collaborate, develop their teamwork skills, and benefit from a greater collective effort.

If you wish to view how previous students rated this unit, please go to https://emuapps.monash.edu.au/unitevaluations/index.jsp

**Required Resources**

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

Students will require access to an "industrial strength" CASE (computer aided software engineering) tool. In 2011, the tool chosen is Visual Paradigm for UML. This is available for download from the FIT2001 Moodle-based unit web site.

Students will also require access to standard personal productivity tools (word processing, graphics and presentation)

**Recommended text(s)**


## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>The development environment</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Domain modelling with UML</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Prototyping in analysis and design</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Process modelling with use case models</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Interface design principles Interface design principles</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Usability testing</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Principles of good design</td>
<td>Assignment 1: Requirements specification with UML and prototypes - due 9 September, 2012</td>
</tr>
<tr>
<td>8</td>
<td>Use case realisation with sequence diagrams</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The requirements specification and RFPs</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Use case driven testing</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Requirements gathering and stakeholder expectation management</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The implementation and support phase</td>
<td>Assignment 2: Design specification and test planning - due 21 October, 2012</td>
</tr>
<tr>
<td>SWOT VAC</td>
<td></td>
<td>No formal assessment is undertaken SWOT VAC</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.*
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at
http://lib.monash.edu/tutorials/citing/

Assessment Tasks

Participation

• Assessment task 1

Title: Requirements specification with UML and prototypes

Description: This assignment involves creating a requirements specification using narrative
descriptions and UML class and use case models. GUI prototypes will also be included.
Full details of the assignment are available on the unit web site.

Weighting: 20%

Criteria for assessment:
This assignment is a group assignment.

The assignment will be assessed using the following main criteria:

♦ the quality, accuracy and completeness of the requirements specification and
models,
♦ quality and consistency of prototypes
♦ the professionalism of the submission and supporting documentation

Each team member will assess the contribution of their team members and themselves
using a peer assessment form. The criteria students will use to make their assessment
are their interest an energy, reliability, quality of work, organisation and planning, initiative,
teamwork, problem solving, and extent of contribution.

The peer assessments will be used to recognise different contributions to the assignment.

For full details see the unit web site.

Due date:
Assignment 1 due 9 September, 2012

• Assessment task 2

Title: Design specification and test planning

Description: This assignment involves creating system design specification that includes a set of
first-cut sequence diagrams, a design class diagram, and a GUI storyboard. It also
includes developing test plans and creating test cases.

Full details of the assignment are available on the unit web site.

**Weighting:**
20%

**Criteria for assessment:**
This assignment is a group assignment.

The assignment will be assessed using the following main criteria:

♦ the clarity, completeness, accuracy and consistency of the design specification and models
♦ the completeness and comprehensiveness of the test plan and the test cases.
♦ the quality and consistency of the GUIs and storyboard
♦ the presentation and professionalism of the submission and supporting documentation

Each team member will assess the contribution of their team members and themselves using a peer assessment form. The criteria students will use to make their assessment are their interest and energy, reliability, quality of work, organisation and planning, initiative, teamwork, problem solving, and extent of contribution.

The peer assessments will be used to recognise different contributions to the assignment.

For full details see the unit web site.

**Due date:**
Assignment 2 due 21 October, 2012

**Examinations**

- **Examination 1**

  **Weighting:**
  60%

  **Length:**
  3 hours

  **Type (open/closed book):**
  Closed book

  **Electronic devices allowed in the exam:**
  None

**Assignment submission**

It is a University requirement ([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)) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at [http://www.infotech.monash.edu.au/resources/student/forms/](http://www.infotech.monash.edu.au/resources/student/forms/). Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).
Assessment Requirements

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.


Returning assignments

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

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and to provide advice on how they might uphold them. You can find Monash’s Education Policies at: http://policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Plagiarism (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html)
- Special Consideration (http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html)
- Grading Scale (http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html)
- Discipline: Student Policy (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html)
- Academic Calendar and Semesters (http://www.monash.edu.au/students/key-dates/)
- Orientation and Transition (http://www.infotech.monash.edu.au/resources/student/orientation/)
- Codes of Practice for Teaching and Learning (http://www.policy.monash.edu/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at www.monash.edu.au/students. For Sunway see http://www.monash.edu.my/Student-services, and for South Africa see http://www.monash.ac.za/current/

The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to http://www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Sunway, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

Website: http://monash.edu/equity-diversity/disability/index.html;
Email: dlu@monash.edu
Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
Telephone: 03 9905 5704, or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway
Reading list


