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FIT2001 Systems development - Semester 1, 2013

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)
- Clayton (Day)
- Gippsland (Day)
- Gippsland (Off-campus)
- Sunway (Day)
- South Africa (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload requirements

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 Mahbubur Rahim

Campus Lecturer
Caulfield
David Grant

Clayton
Dr MD Mahbubur Rahim

Gippsland
Madhu Chetty

South Africa
Greig Krull

Sunway
Ramesh Kumar

Tutors
Caulfield
David Grant
Academic Overview

Learning 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.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No formal assessment or activities are undertaken in week 0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>The development environment</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Requirements gathering and stakeholder expectation management</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The requirements specification and RFPS</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Domain modelling (class model) with UML</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Process modelling with use case diagrams</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Prototyping in analysis and design</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Interface design principles</td>
<td>Assignment 1: Developing Requirements Specifications due Friday 26 April 2013</td>
</tr>
<tr>
<td>8</td>
<td>Usability testing</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Principles of good systems design</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Use case realization with sequence diagrams</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Use case driven testing</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The implementation and support phase</td>
<td>Assignment 2: Design Specification and Test Planning due Friday 31 May 2013</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your learning system.

## 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>Assignment 1: Developing Requirements Specifications</td>
<td>20%</td>
<td>Friday 26 April 2013</td>
</tr>
<tr>
<td>Assignment 2: Design Specification and Test Planning</td>
<td>20%</td>
<td>Friday 31 May 2013</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.
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: Assignment 1: Developing Requirements Specifications
  
  Description: This assignment involves creating a requirements specification using narrative descriptions, 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
  ♦ The 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 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: Friday 26 April 2013

• Assessment task 2

  Title: Assignment 2: Design Specification and Test Planning
  
  Description:
Assessment Requirements

This assignment involves creating a 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 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:
Friday 31 May 2013

Examinations

• Examination 1

Weighting:
60%

Length:
3 hours

Type (open/closed book):
Closed book

Electronic devices allowed in the exam:
None

Learning resources

Reading list


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
- Solutions to tutes, labs and assignments

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.

Assignment submission

It is a University requirement (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/. 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).
Online submission

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

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 2013 the tool will be 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)


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: www.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
- Assessment in Coursework Programs;  
- 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/dates/
- Orientation and Transition;  
  http://intranet.monash.edu.au/infotech/resources/students/orientation/
- Academic and Administrative Complaints and Grievances Policy;  
  http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.html
- Code of Practice for Teaching and Learning;  
- Graduate Attributes Policy
  http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

Graduate Attributes Policy

http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

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 http://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/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to 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/.
Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

Website: http://www.monash.edu/equity-diversity/disability/index.html Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway Email: dlu@monash.edu Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus

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 the Student Evaluation of Teaching and Units (SETU) survey. 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, see:

www.monash.edu.au/about/monash-directions and on student evaluations, see:
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