MONASH University
Information Technology

FIT2001
Systems development

Unit Guide

Semester 1, 2012

Last updated: 22 Feb 2012

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FIT2001 Systems development - Semester 1, 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)
- Clayton (Day)
- Gippsland (Day)
- Gippsland (Off-campus)
- Sunway (Day)
- South Africa (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

On-campus 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.

Off-campus students generally do not attend lecture and tutorial sessions, however, you should plan to spend equivalent time working through the relevant resources and participating in discussion groups each week.

You will need to allocate around 12 hours per week during the semester for this unit.

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

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Campus Lecturer

Caulfield

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Clayton

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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%

Assessment Task	Value	Due Date
Domain modelling and requirements specification with UML	up to 20% - see remarks	30 March, 2012
Design specification and test planning	up to 20% - see remarks	18 May, 2012
Request for proposals and interface prototyping	up to 20% - see remarks	25 May, 2012
Examination 1	60%	To be advised

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.monash.edu.au/about/monash-directions/directions.html
http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this unit

This unit has been offered over 10 times in its current form so students should be confident that they are being taught a unit that is in very good shape. All lecturers on all the campuses have taught the unit at least once before (and similar units many times). The content of the unit is stable and has not needed much change from previous offerings. Naturally, each lecturer's delivery of the material improves each time the unit is offered (maybe even their jokes will improve).

The unit podcast will continue to improve with more interviews planned on a wider variety of topics this semester. The interviews will include discussions with game and multimedia developers.

A feature of the unit this year, as in past years, will be the use of social networking tools to help students and staff communication. The unit has a Facebook-based discussion forum as a supplement to the forum available on the Moodle-based unit web site and a Twitter account (@fit2001).

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. 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 choosen 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)

John W Satzinger, Robert B Jackson, Stephen D Burd. (2011). *Systems Analysis And Design In A Changing WorldSystems Analysis And Design In A Changing World* . (Sixth edition) Course Technology.

Doug Rosenberg, Matt Stephens. (2007). *Use case driven object modeling with UML theory and practice*. () Apress.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	The development environment	
2	Domain modelling with UML	
3	Prototyping in analysis and design	
4	Process modelling with use case models	
5	Interface design principles Interface design principles	Assignment 1 due 30 March, 2012
6	Usability testing	
7	Principles of good design	
8	Use case realisation with sequence diagrams	
9	The requirements specification and RFPs	
10	Use case driven testing	
11	Requirements gathering and stakeholder expectation management	Assignment 2 due 18 May, 2012
12	The implementation and support phase	Assignment 3 due 25 May, 2012
	SWOT VAC	No formal assessment is undertaken SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*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
(http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu

Assessment Tasks

Participation

- **Assessment task 1**

Title:
Domain modelling and requirements specification with UML
Description:
This assignment involves creating a domain model using various UML diagram, including class diagrams and use case diagrams.

Full details of the assignment are available on the unit web site.
Weighting:
up to 20% - see remarks
Criteria for assessment:
The assignment will be assessed using the following main criteria: the quality and of the interface design, the quality of the storyboard (interface flow diagram), the quality of the menu design and the consistency and completeness of the working prototype. The professionalism of the submission and supporting documentation will also be considered. For full details see the unit web site.
Due date:
30 March, 2012
Remarks:
This is one of three assignments available for students to submit.

Students must choose at least 2 assignments to work on and submit by their due dates. Students can submit more than 2 assignments. All assignments submitted will be marked. Each assignment is worth 20% of the value of the unit.

Overall, assignment work is worth 40% of the unit. If a student submits more than 2 assignments, the marks for the best 2 assignments will be used to obtain the 40% assignment mark.

- **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 and a design class diagram. It also includes developing test plans and creating cast cases.

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

up to 20% - see remarks

Criteria for assessment:

The assignment will be assessed using the following main criteria: the clarity and completeness of the design class diagram, the clarity and completeness of the sequence diagrams, the consistency of the sequence diagrams and design class diagram, and the presentation of the report. For full details see the unit web site.

Due date:

18 May, 2012

Remarks:

This is one of three assignments available for students to submit.

Students must choose at least 2 assignments to work on and submit by their due dates. Students can submit more than 2 assignments. All assignments submitted will be marked. Each assignment is worth 20% of the value of the unit.

Overall, assignment work is worth 40% of the unit. If a student submits more than 2 assignments, the marks for the best 2 assignments will be used to obtain the 40% assignment mark.

- **Assessment task 3**

Title:

Request for proposals and interface prototyping

Description:

This assignment involves creating a system requirements specification in the form of a request for proposals (RFP).

It also involves creating a working prototype interface design.

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

Weighting:

up to 20% - see remarks

Criteria for assessment:

The assignment will be assessed using the following main criteria: the clarity and completeness of the functional requirements listed, the clarity and completeness of the non-functional requirements listed, the clarity and completeness of the description of the submission requirements, and the presentation of the report. For full details see the unit web site.

Due date:

25 May, 2012

Remarks:

This is one of three assignments available for students to submit.

Students must choose at least 2 assignments to work on and submit by their due dates. Students can submit more than 2 assignments. All assignments submitted will be marked. Each assignment is worth 20% of the value of the unit.

Overall, assignment work is worth 40% of the unit. If a student submits more than 2 assignments, the marks for the best 2 assignments will be used to obtain the 40% assignment mark.

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) 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 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.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:
http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html.

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)
- Assessment (http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po
- Special Consideration (http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h
- 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/); and
- Academic and Administrative Complaints and Grievances Policy (http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.
- Codes of Practice for Teaching and Learning (http://www.policy.monash.edu.au/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 Commuity Services at 03 55146018 at Sunway

Reading list

Booch, G., Rumbaugh, J. and I. Jacobson (1999) *The Unified Modeling Language User Guide* Addison Wesley Professional.

Dennis, A., Wixom, B.H. and D. Tegarden (2008) *Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach*, 3rd Edition, Wiley.

Hoffer, J.A., George, J.F. and J.S. Valacich (2001) *Modern Systems Analysis and Design* 3rd Edition, Prentice Hall.

George, J.F., Batra, D., Valacich J.S. and J.A. Hoffer, (2004) *Object-Oriented System Analysis and Design* Prentice-Hall.

Lee, R. and W. Tepfenhart (2002) *Practical Object-Oriented Development with UML and Java*, Prentice Hall.

Maciaszek, L. (2004) *Requirements Analysis and System Design*, 2nd Edition, Addison-Wesley.

Page-Jones, M. (1988) *The Practical Guide to Structured Systems Des*ign 2nd Edition, Prentice-Hall.

Page-Jones, M. (2000) *Fundamentals of Object-Oriented Design in UML* Addison-Wesley.

Shelley, G.B. and H.J. Rosenblatt (2010) *Systems Analysis and Design,* 8th Edition, Thomson Course Technology.