

**FIT2001**  
**Systems development**

**Unit Guide**

**Semester 1, 2011**

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 1, 2011**

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**

- Berwick (Day)
- 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

### **Chief Examiner**

Peter O'Donnell

### **Campus Lecturer**

#### **Berwick**

Cheryl Howard

#### **Caulfield**

Peter O'Donnell

#### **Clayton**

Yen Cheung

#### **Gippsland**

Madhu Chetty

#### **South Africa**

Stella Ouma

#### **Sunway**

Boon Han Yeap

### **Tutors**

#### **Caulfield**

David Grant

Ligia Ionescu

Siavash Alavian

## Clayton

Peter Huynh

Saira Zeeshan

Suttisak Jantavongso

## Learning Objectives

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
Interface prototype and domain model	up to 20% - see remarks	3 April 2011
Requirements specification with use case models and class diagram	up to 20% - see remarks	17 April 2011
Design specification with sequence diagram and design class diagram	up to 20% - see remarks	8 May 2011
Test plan including test cases	up to 20% - see remarks	22 May 2011
Request for proposals	up to 20% - see remarks	29 May 2011
Reflective blog posts (FIT2001 only)	Bonus of 3 marks added to overall assignment mark. Note the assignment mark cannot exceed 40%.	Your last blog entry can be made anytime before the exam.
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

If you wish to view how previous students rated this unit, please go to

<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

## Required Resources

There are two prescribed text books for the unit.

The first is *Use case driven object modeling with UML theory and practice, 2007*, Rosenberg and Stephens, Apress. It is available on-line via the Monash library.

The second text you need is *Systems analysis and design in a changing world* 5th edition, Satzinger, Jackson and Burd, Course Technology, 2009, unless you are studying at Berwick, in which case you should get *Systems Analysis and Design* 8th Edition, Shelly and Rosenblatt, 2009.

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)

## Unit Schedule

Week	Date*	Activities	Assessment
0	21/02/11		No formal assessment or activities are undertaken in week 0
1	28/02/11	The development environment	
2	07/03/11	Domain modelling with UML	
3	14/03/11	Prototyping in analysis and design	
4	21/03/11	Interface design principles	
5	28/03/11	Usability testing	Assignment 1 due 3 April, 2011
6	04/04/11	Process modelling with use case models	
7	11/04/11	Principles of good design	Assignment 2 due 17 April 2011
8	18/04/11	Use case realisation with sequence diagrams	
Mid semester break			
9	02/05/11	The requirements specification and RFPs	

			Assignment 3 due 8 May 2011
10	09/05/11	Use case driven testing	
11	16/05/11	Requirements gathering and stakeholder expectation management	Assignment 4 due 22 May 2011
12	23/05/11	The implementation and support phase	Assignment 5 due 29 May 2011
	30/05/11	SWOT VAC	No formal assessment is undertaken SWOT VAC

\*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

## Assessment Policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit

## Assessment Tasks

### Participation

#### • Assessment task 1

**Title:**

Interface prototype and domain model

**Description:**

This assignment involves creating a working prototype interface design and an associated domain model.

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:**

3 April 2011

**Remarks:**



This is one of five 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:**

Requirements specification with use case models and class diagram

**Description:**

This assignment involves creating system requirements specification that includes a use case model with an associated set of use case narratives, a domain class diagram and a robustness diagram.

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 use case model and associated narratives, the clarity and completeness of the domain class diagram, the clarity and completeness of the robustness diagram, the consistency of the models, and the presentation of the report.

For full details see the unit web site.

**Due date:**

17 April 2011

**Remarks:**

This is one of five 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:**

Design specification with sequence diagram and design class diagram

**Description:**

This assignment involves creating system design specification that includes a set of first-cut sequence diagrams and a design class diagram.

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:**

8 May 2011

**Remarks:**

This is one of five 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 4**

**Title:**

Test plan including test cases

**Description:**

This assignment involves creating system a system test plan including test 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 feasibility of the plan, the quality of the test cases, and the presentation of the report. For full details see the unit web site.

**Due date:**

22 May 2011

**Remarks:**

This is one of five 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 5**

**Title:**

Request for proposals

**Description:**

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

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:**

29 May 2011

**Remarks:**

This is one of five 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 6**

**Title:**

Reflective blog posts (FIT2001 only)

**Description:**

Each FIT2001 student is invited to keep a reflective journal on the blog site [blog.infotech.monash.edu.au](http://blog.infotech.monash.edu.au) (a blog can also be maintained on the Moodle-based unit web site or using a commercial blogging system like [www.blogger.com](http://www.blogger.com)). This will be set up - with the help of teaching staff if required - during the week 1 tutorial. This blog will provide the opportunity to reflect on the learning that takes place throughout the unit. Each week you will be able to make a new posting to your blog. The blog entries should include a reflection on what has happened in terms of your progress on assignment and tutorial work, your management of the assignment project and its tasks, what lessons have been learned to date and what you (and the staff) could do differently. A page listing all the reflective journals of FIT2001 students will be maintained on the Moodle-based unit web site.

**Weighting:**

Bonus of 3 marks added to overall assignment mark. Note the assignment mark cannot exceed 40%.

**Criteria for assessment:**

To obtain the 3% bonus mark for this task students must complete a minimum of 10 weekly blog entries during the semester. Each blog post will be read and assessed by the chief examiner. To get the 3% bonus 6 of these posts should be assessed as "satisfactory". Students can gauge what is required from some example blogs - from students in previous years - and from staff feedback. The task is not difficult. It is fun to do and does help your learning. The 3% bonus will be added to the assignment component of the mark available for the unit. Note that that component cannot exceed 40%. So, for example, a student who obtained 36/40 for their assignment work who earns the bonus will get 39%. While a student who got 39/40 would get 40/40 - the maximum available - if they earned the bonus. For more details, please refer to the Moodle-based unit web site.

**Due date:**

Your last blog entry can be made anytime before the exam.

## Examinations

### • Examination 1

**Weighting:**

60%

**Length:**

3 hours

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

Closed book

**Electronic devices allowed in the exam:**

None

## Assignment submission

Assignment coversheets are available via "Student Forms" on the Faculty website:

<http://www.infotech.monash.edu.au/resources/student/forms/>

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

## 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

## 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-p>)
- 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>).

## 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](http://www.monash.edu.au/students). 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. 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://adm.monash.edu/sss/equity-diversity/disability-liaison/index.html>;
- Telephone: 03 9905 5704 to book an appointment with a DLO;
- Email: [dlu@monash.edu](mailto:dlu@monash.edu)
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus.

## 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 Design* 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.