MONASH University
Information Technology

FIT2001
Systems development

Unit Guide

Semester 1, 2014

Last updated: 26 Feb 2014

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FIT2001 Systems development - Semester 1, 2014

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 (Off-campus)
- Malaysia (Day)
- South Africa (Day)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- One 2-hour lecture
- One 2-hour laboratory

(b.) Study schedule for off-campus students:

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

(c.) Additional requirements (all students):

- A minimum of 8 hours independent study per week 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

Chief Examiner

Ms Chris Gonsalvez

Campus Lecturer

Caulfield

MD Mahbubur Rahim

Clayton

Chris Gonsalvez

Gippsland

Madhu Chetty

South Africa

Stella Ouma

Malaysia

Jayantha Rajapske

Tutors

Caulfield

MD Mahbubur Rahim

David Grant

Jay Zeal

Clayton

David Grant

Peter Huynh

Eileen O'Callaghan

Phil Ward

Anthony Wong

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

Academic Overview

Learning Outcomes

At the completion of this unit students will haveA 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

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction, The nature of systems development	Tutorials start in Week 1 - Compulsory tutorial participation each week
2	Stakeholder management, Investigating system requirements	
3	Investigating system requirements - Prototyping, User stories	
4	Interface design principles, Usability testing	
5	Documenting requirements - Use Cases	
6	Documenting requirements - Domain models	
7	The Requirements specification and Request for Proposal (RFP)	Assignment 1: Analysing Requirements due Monday 14 April 2014 - 9 am
8	Principles of good design	
9	Detailed design: Use case realisation with sequence diagrams	
10	Testing the system	
11	Securing, implementing and maintaining the system	
12	Systems development approaches, Review	Designing the System and Preparing for Implementation due Monday 26 May 2014 - 9 am
	SWOT VAC	No formal assessment is undertaken in 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 learning system.

Teaching Approach

Lecture and tutorials or problem classes

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

Assessment Summary

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

Assessment Task	Value	Due Date
Assignment 1: Analysing Requirements	15%	Monday 14 April 2014 - 9 am

Assignment 2: Designing the System and Preparing for Implementation	15%	Monday 26 May 2014 - 9 am
Assignment 3: Tutorial participation	10%	Every week in tutorials
Examination 1	60%	To be advised

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles
(http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurd

Academic Integrity - Please see resources and tutorials at
http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/

Assessment Tasks

Participation

- **Assessment task 1**

  Title:
  Assignment 1: Analysing Requirements
  Description:
  This group assignment involves creating a requirements specification using requirements gathering techniques, and documenting the requirements using prototyping and relevant modelling tools.

  Full details of the assignment will be available on the unit web site.
  Weighting:
  15%
  Criteria for assessment:
  The assignment will be assessed using the following main criteria:

  - Quality, accuracy and completeness of the requirements specification and models;
  - Quality of the prototypes;
  - Consistency of the models with the prototypes;
  - Professionalism of the submission and supporting documentation.

  Marks for individual group members may vary based on self and peer assessment, contribution assessment and tutor observation.
  Due date:
  Monday 14 April 2014 - 9 am

- **Assessment task 2**

  Title:
  Assignment 2: Designing the System and Preparing for Implementation
  Description:
  This group assignment involves a creating system design specification using appropriate models, creating a test plan that includes test cases, and detailing Implementation considerations for the system.

  Full details of the assignment will be available on the unit web site.
  Weighting:
  15%
  Criteria for assessment:

The assignment will be assessed using the following main criteria:

- Clarity, completeness, accuracy and consistency of the design specification and models;
- Completeness and comprehensiveness of the test plan and the test cases;
- Comprehensive consideration of implementation issues;
- Presentation and professionalism of the submission and supporting documentation

Marks for individual group members may vary based on self and peer assessment, contribution assessment and tutor observation.

Due date:

Monday 26 May 2014 - 9 am

- **Assessment task 3**

Title:

Assignment 3: Tutorial participation

Description:

Assessment will be based on both tutor observations and peer assessment. This assignment will encourage you to demonstrate your understanding and knowledge of Systems development practice by actively engaging in the tutorial activities.

Weighting:

10%

Criteria for assessment:

You are expected to have completed any pre-tutorial activities, and bring any required documentation to the tutorial. You must be prepared to discuss your findings in a tutorial review group, and use the knowledge to analyse and design a case study system during the tutorials.

The assessment for this item is based on the peer evaluation and tutor observation of your performance in the review tutorials, including preparation, participation and contribution, the ability to allow and encourage others to contribute, and the ability to share your understanding of Systems development practice with other students.

Due date:

Every week in tutorials

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

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.

Monash Library Unit Reading List (if applicable to the unit)
http://readinglists.lib.monash.edu/index.html

Faculty of Information Technology Style Guide

Feedback to you

Examination/other end-of-semester assessment feedback may take the form of feedback classes, provision of sample answers or other group feedback after official results have been published. Please check with your lecturer on the feedback provided and take advantage of this prior to requesting individual consultations with staff. If your unit has an examination, you may request to view your examination script booklet, see
http://intranet.monash.edu.au/infotech/resources/students/procedures/request-to-view-exam-scripts.html

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

- Informal feedback on progress in labs/tutes
- Graded assignments with comments

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.monash.edu.au/exams/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.

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla 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). Please note that it is your responsibility to retain copies of your assessments.

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)

John W Satzinger, Robert B Jackson, Stephen D Burd. (2012). *Systems Analysis And Design In A Changing World*. (6th Edition) Course Technology Cengage Learning.

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:

- Student Academic Integrity Policy and Student Academic Integrity: Managing Plagiarism and Collusion Procedures ; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.h
- Assessment in Coursework Programs; 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.ht
- 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.h

Faculty resources and policies

Important student resources including Faculty policies are located at http://intranet.monash.edu.au/infotech/resources/students/

Graduate Attributes Policy

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

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.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 Malaysia 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 Malaysia, 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 Commuity Services at 03 55146018 at Malaysia
- 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, Malaysia Campus