



**MONASH** University  
Information Technology

**FIT2027**  
**Systems design and implementation**

**Unit Guide**

**Semester 2, 2015**

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# **FIT2027 Systems design and implementation - Semester 2, 2015**

This unit focuses on the nature of systems design and implementation as phases within the systems development process. By the end of the unit, students know the principles of how to design and implement a system, have the knowledge and skills required to conduct the main tasks typically required in these phases, and have experience in selecting and using the most suitable design and implementation techniques to develop a system from a requirements specification.

Design topics include: Transition from Analysis to Design; Preparation and Selection of design alternatives; Definition of System architecture requirements; Design Strategies-Structured, Object-oriented, Design patterns; Object-oriented design modelling; Interface Design; Systems security and access controls. Implementation topics include: Implementation planning, testing overview; data conversion; training; documentation-user and help systems; systems installation; transition to maintenance.

## **Mode of Delivery**

Caulfield (Day)

## **Workload Requirements**

Minimum total expected workload equals 12 hours per week comprising:

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

- Two hours of lectures
- One 2-hour laboratory

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

## **Unit Relationships**

### **Prohibitions**

BUS2021, CPE2003, CSE2200, CSE3308, GCO2813, GCO2816, FIT2005, IMS2805

### **Prerequisites**

One of FIT1040, FIT1002 or equivalent and FIT1004 or equivalent and FIT2001 or equivalent

## **Chief Examiner**

**Mr Peter O'Donnell**

## **Campus Lecturer**

### **Caulfield**

**Peter O'Donnell**

**Yohann Pitrey**

### **Tutors**

### **Caulfield**

**Binit Joshi**

**David Grant**

## **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/](http://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](http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html)

## **Previous Student Evaluations of this Unit**

This unit is running well, however, "tinkering" each year has seen material added to the unit and none taken out. Both staff and students felt that it has reached the point where - in particular in the lectures - some of the content covered could be simplified and less covered without compromising the unit objectives. This offering, an attempt will be made to take some material out of the lectures, allowing more depth on fewer topics to be covered.

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 should be able to:

1. explain the objectives of the systems design and implementation phases of the systems development lifecycle, and the activities which they involve;
2. describe the strengths and weaknesses, and the use of the main techniques which are used in systems design and implementation;
3. identify the key issues involved in systems design and implementation;
4. explain the value of a team-based approach to the development of information systems;
5. explain the importance of the systems design and implementation phases of the systems development lifecycle;
6. describe the importance of a systematic approach to the design and implementation phases of systems development;
7. prepare suitable design and implementation approach alternatives to the development of a business system;
8. use basic design techniques in the development of elements of an information system;
9. prepare and present a design specification for a business system;
10. prepare and present an implementation plan for a business system;
11. construct and implement a quality business system;
12. develop expertise in IT practitioner tools;
13. work effectively as part of a team responsible for carrying out systems design and implementation activities; and
14. present oral and written design and implementation deliverables with confidence to the relevant stakeholders.

## Unit Schedule

| Week | Activities   | Assessment  |
|------|--|---|
| 0    |  | No formal assessment or activities are undertaken in week 0   |
| 1    | Introduction to the unit; The role of infrastructure |   |
| 2    | Design and implementation revisited                  |   |
| 3    | Design UML I   |   |
| 4    | Design UML II  |   |
| 5    | Application design with UML                          |   |
| 6    | The role of walkthroughs                             |   |
| 7    | Reporting system development                         | Partial submission of portfolio at end of week 7  |
| 8    | Advanced topics in UML                               |   |
| 9    | Designing and conducting tests                       |   |
| 10   | Developing documentation                             |   |
| 11   | Change management                                    |   |
| 12   | Packaged software and enterprise resource planning   | Portfolio submission at end of week 12  |
|      | SWOT VAC   | No formal assessment is undertaken in SWOT VAC  |
|      | Examination period                                   | LINK to Assessment Policy:<br><a href="http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html">http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html</a> |

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

## Teaching Approach

- **Lecture and tutorials or problem classes**

Lectures will be used to introduce and explain the central concepts of the unit. The aim of the lectures is to prepare students for the work they will undertake in each week's studio class.

- **Studio teaching**

Studio teaching is a facilitated active, participatory, peer learning approach. In the studio classes, students will be strongly encouraged to take responsibility for organising and directing their learning with support from their supervisors and peers.

## Assessment Summary

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

| Assessment Task | Value | Due Date  |
|-----------------|-------|---|
| Portfolio       | 40%   | Partial submission of portfolio at end of week 7 (a minimum of 10% of the value points is required.) The final submission is due at the end of week 12. |

Unit Schedule

|               |     |               |
|---------------|-----|---------------|
| 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-hurdles>)

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:**

Portfolio

**Description:**

In this unit, the assignment submission will take the form of a portfolio. The portfolio is really a series of assignments that are submitted together as one package at the end of the semester. It is different to a normal assignment in that each student gets to choose what they do from a list of tasks (available on the unit web site). Each week's studio class instructions include links to the assessment tasks; they are based on the work performed in the studio. The full task list is available on the Moodle web site. Note that you can also create your own tasks - provided they are approved by the teaching staff.

In the week 1 lecture and studio time will be devoted to explaining and demonstrating how the portfolio works and what is expected from students. For full details refer to the unit web site on Moodle.

**Weighting:**

40%

**Criteria for assessment:**

Each task will have a description and a deliverable and will also have a series of points associated with it. The points will include

- ◆ Learning objectives points (design or implementation)
- ◆ Individual points
- ◆ Team points
- ◆ Presentation points &
- ◆ Value points

You must perform and prepare for submission tasks that ensure you meet the minimum amount of point value for each criteria. This way - while you choose what you do, you will do a minimum amount of group work, individual work, work on each of the relevant learning objectives and practice written and oral presentations. There are no set maximum points (you can do as much as you want). A partial submission of at least 10 value points must be made by the end of week 7.

Each item you choose to do can be submitted for feedback. This feedback will include an indication of the grade obtained, and comments and suggestions to help you improve the item before final portfolio submission in week 12. Feedback will normally be given after



## Assessment Requirements

submission of partial portfolio in week 7 and at end of week 11. Feedback can also be obtained during tutorials and in consultations.

The final mark given for the portfolio will be sum of all items submitted by their value points by the grade.

Each group submission should be accompanied by a group assignment cover sheet that clearly indicates all participating group members. Each member of the group will be asked to also submit a form allowing them to assess the contribution of each group member to the submission. The marks allocated to a group item might be different for different members of the group depending on their individual contributions.

For further details refer to the unit web site on Moodle.

### **Due date:**

Partial submission of portfolio at end of week 7 (a minimum of 10% of the value points is required.) The final submission is due at the end of week 12.

## Examinations

### • Examination 1

#### **Weighting:**

60%

#### **Length:**

3 hours

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

Closed book

#### **Electronic devices allowed in the exam:**

None

## Learning resources

Monash Library Unit Reading List (if applicable to the unit)

<http://readinglists.lib.monash.edu/index.html>

## 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.

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 electronic submission). 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.

## Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.

Satzinger, Jackson and Burd. (2012). *Systems Analysis and Design in a Changing World*. (6th Edition) Course.com.

Grady Booch, James Rumbaugh, Ivar Jacobson. (2005). *The Unified Modeling Language User Guide*. (2nd Edition) The Addison-Wesley Object Technology Series Object Technology Series.

## 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](http://www.policy.monash.edu.au/policy-bank/academic/education/index.html)

### 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.h>

### Student Charter

[www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html](http://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](http://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 Community Services at 03 55146018 at Malaysia
- Email: [dlu@monash.edu](mailto: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