MONASH University

FIT2051
Analysis and design methods

Unit guide

Semester 2, 2008

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FIT2051 Analysis and design methods - Semester 2 , 2008

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Lecturer(s) :

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Introduction

Unit synopsis

ASCED Discipline Group classification: 020399 Information Systems not elsewhere classified

This unit will examine the process of information system development and the key tasks in systems analysis and design from a problem-solving perspective. System development is a problem-solving activity; formal system development approaches and specific techniques for performing each phase of the systems development process embody particular perspectives on the elements involved in information systems. Information Systems professionals need a sound grounding in the fundamental principles of problem-solving as they relate to system development methods and analysis and design tasks.

The unit aims initially to identify the key overall features which are common to all system development approaches and analytical and design techniques as problem-solving activities. Then it will examine specific development approaches and analysis and design methods/techniques in the context of these problem-solving requirements. It will contrast and compare the relative strengths and weaknesses of different methods and techniques, to enable students to appreciate the importance of seeing system development problems from multiple viewpoints. Students will be encouraged to explore a wide range of problem solving approaches, techniques and technologies and to understand how to adapt them to particular system development tasks and needs.

Learning outcomes

Knowledge and Understanding

At the completion of this unit students will have a sound theoretical and conceptual understanding of:

C1. the purpose, objectives and tasks of analysis and design as problem-solving activities in the context of the development of information systems

C2. key issues involved in addressing informational, organizational, human and technological problems that arise in information systems development

C3. a range of problem-solving approaches relevant to the identification, definition, representation and addressing of informational, organizational, human and technological problems that arise in information systems development.

C4. a range of problem solving techniques relevant to the problems that arise in information systems development

C5. the problem-solving strategies and approaches embodied in some of the key analysis and design techniques used in information system development

C6. the importance of the identification and definition phases in the problem solving process

C7. key differences between problem solving approaches and techniques, and their strengths and weaknesses in relation to their use as part of the system development process

C8. the importance of communication, interpersonal skills and ethical and professional behaviour in addressing the problems that arise in system development

Attitudes, Values and Beliefs

At the completion of this unit students will be able to:

A1. recognise the value of a systematic, critical and reflective approach to analysis and design as problem solving activities within the systems development process

A2. recognise the ethical and organizational issues that may accompany the identification, definition, representation and addressing of problems that arise in an organizational context

A3. appreciate the subjective nature of problem interpretation by organizational stakeholders and would-be problem solvers, and its impact on system development approaches and techniques for analysis and design

A4. appreciate the importance of the ability to approach system development problems from a variety of perspectives

Practical Skills

At the completion of this unit, students will be able to:

P1. evaluate the overall context of information systems development problems in a critical manner, and identify appropriate methods for addressing those problems

P2. apply a range of general analysis and design techniques relevant to the identification, definition, representation and addressing of problems that arise in information systems development.

Relationships, Communication and TeamWork

At the completion of this unit students will:

S1. know the team skills necessary for successful development and implementation of IT solutions to information system development problems

S2. appreciate the importance of the inter-relationships between IT professionals and other stakeholders involved in the development of information systems.

Workload

Workload commitments are:

- 2 hour lecture
- 2 hour tutorial
- 8 hours of personal study per one hour of contact time for the reading and assignment expectations

Unit relationships

Prerequisites

Before attempting this unit you must have satisfactorily completed 24 points of FIT first year common core units.

Co-requisite: FIT2001 or equivalent

Relationships

FIT2051 is a core unit in the Information Systems major of the BITS.

Before attempting this unit you must have satisfactorily completed 24 points of FIT first year common core units.

You may not study this unit and IMS3230 in your degree.

Continuous improvement

Monash is committed to ‘Excellence in education' and strives for the highest possible quality in teaching and learning. To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. Two of the formal ways that you are invited to provide feedback are through Unit Evaluations and through Monquest Teaching Evaluations.

One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. It is Monash policy for every unit offered to be evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to "have their say". The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Student Evaluations

The Faculty of IT administers the Unit Evaluation surveys online through the my.monash portal, although for some smaller classes there may be alternative evaluations conducted in class.

If you wish to view how previous students rated this unit, please go to
http://www.monash.edu.au/unit-evaluation-reports/

Over the past few years the Faculty of Information Technology has made a number of improvements to its courses as a result of unit evaluation feedback. Some of these include systematic analysis and planning of unit improvements, and consistent assignment return guidelines.

Monquest Teaching Evaluation surveys may be used by some of your academic staff this semester. They are administered by the Centre for Higher Education Quality (CHEQ) and may be completed in class with a facilitator or on-line through the my.monash portal. The data provided to lecturers is completely anonymous.
Monquest surveys provide academic staff with evidence of the effectiveness of their teaching and identify areas for improvement. Individual Monquest reports are confidential, however, you can see the summary results of Monquest evaluations for 2006 at http://www.adm.monash.edu.au/cheq/evaluations/monquest/profiles/index.html

Improvements to this unit

The content of the unit has been re-evaluated to take into consideration the overlap between this unit and FIT1003 and FIT2002 that existed last year. The unit has also been moved from the first to the second semester to ensure the necessary background information in analysis and design.

Unit staff - contact details

Unit leader

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Lecturer(s) :

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Thomas O'Daniel

Teaching and learning method

Tutorial allocation

Students should register for tutorials using Allocate +.

Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

Unit Schedule

Week	Topic	Key dates
1	Introduction, Concepts and overview of systems development	
2	Frameworks for comparing ISD	
3	Soft systems methodology	
4	The traditional SDLC and structured approaches: Structured Analysis	
5	Structured systems analysis (2)	
6	Information Engineering (A Blended approach)	
7	ETHICS â‘(Effective Technical and Human Implementation of Computer-based Systems)	
8	Quality and productivity issues in information systems development: CASE tools and prototyping	
9	Quality and productivity issues in information systems development: application packages, outsourcing	
10	Quality and productivity issues in information systems development: RAD, Agile methods	
11	Quality and productivity issues in information systems development: Web development	
Mid semester break		
12	Organisational Themes; People themes	
13	Conclusion and Revision	

Unit Resources

Prescribed text(s) and readings

Avison, D., Fitzgerald, G., 2006. Information systems development: Methodologies, techniques and tools. McGraw Hill. ISBN:-13 978-0-07-711417-6

Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

Recommended text(s) and readings

- Booch, G., Rumbaugh, J. and I. Jacobson (1999) The Unified Modeling Language User Guide Addison Wesley Professional. (New edition planned for 2006).
- Dennis, A., Wixom, B.H. and D. Tegarden (2005) Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach, 2nd 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.
- Reed, P.R. (2002) Developing Applications with Java and UML, Addison Wesley.
- Satzinger, J. W., Jackson, R.B., Burd, S.D. and R. Johnson (2004) Systems Analysis and Design in a Changing World, 3rd Edition, Thomsen Course Technology.
- Quatrani, T. (2002) Visual Modeling with Rational Rose 2002 and UML, 3rd Edition, Addison Wesley Professional.

Required software and/or hardware

Students will be required to use Word processing to complete their assignments.

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to **2** hours per week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

- Unit guide

- The FIT2051 website on Muso where lecture slides, weekly tutorial requirements, assignment specifications and supplementary material will be posted.

Library access

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to http://www.lib.monash.edu.au. Be sure to obtain a copy of the Library Guide, and if necessary, the instructions for remote access from the library website.

Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (http://moodle.monash.edu.au) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: http://my.monash.edu.au

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: http://www.monash.edu.au/muso/support/students/downloadables-student.html

You can contact the MUSO Support by: Phone: (+61 3) 9903 1268

For further contact information including operational hours, please visit:
http://www.monash.edu.au/muso/support/students/contact.html

Further information can be obtained from the MUSO support site:
http://www.monash.edu.au/muso/support/index.html

Assessment

Unit assessment policy

- achieve at least 40% of the marks available for the examination component,
- achieve at least 40% of the marks available for the assignment component: i.e. the assignments and any other assessment tasks (such as presentations) taken as a whole
- achieve at least 50% of the total marks for the unit

Where a student gains less than 40% for either the examination or assignment component, the final result for the unit will be no greater than ‘44-N’.

Assignment tasks

- **Assignment Task**

  Title : Assignment 1: Soft systems methodology assignment

  Description :

  Weighting : 20%

  Criteria for assessment :

  Due date : 19 August 2008
- **Assignment Task**

  Title : Assignment 2: Evaluation of a Methodology assignment

  Description :

  Weighting : 20%

  Criteria for assessment :

  Due date : 23 September 2008

Examinations

- **Examination**

  Weighting : 60%

  Length : 3 hours

  Type (open/closed book) : Closed book

Assignment submission

Assignments will be submitted by paper submission to your tutor on the designated dates, with the appropriate cover sheet correctly filled out and attached.

Assignment coversheets and assessment policy for the Caulfield School of Information Technology can be found at:

http://infotech.monash.edu.au/resources/student/assignments/

Assignment coversheets

Assignment coversheets can be found via the "Student assignment coversheets" (http://infotech.monash.edu.au/resources/student/assignments/) page on the faculty website.

University and Faculty policy on assessment

Due dates and extensions

The due dates for the submission of assignments are given in the previous section. Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Request for extensions must be made to the unit lecturer at your campus at least two days before the due date. You will be asked to forward original medical certificates in cases of illness, and may be asked to provide othe forms of documentation where necessary. A copy of the email or other written communication of an extension must be attached to the assignment submission.

Late assignment

Assignments in this unit are no less important than those of other units. Your inability to manage your time or computing resources will not be accepted as a valid excuse. (Several assignments falling due at the same time is an unavoidable fact of university life.)

Hardware failures are not normally recognised as a valid reason for obtaining an extension or handing in a late assignment.

Late assignments submitted without an approved extension **may** be accepted up to one week late at the discretion of your lecturer, but will be penalised at the rate of 10% of total assignment marks per day (including weekends).

Example:

Total marks available for the assignment = 100 marks

Marks received for the assignment = 70 marks

Marks deducted for 2 days late submission (20% of 100) = 20 marks

Final mark received for assignment = 50 marks

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at http://www.policy.monash.edu/policy-bank/academic/education/assessment/

We will aim to have assignment results made available to you within two weeks after assignment receipt.

Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask

you to acquaint yourself with Student Rights and Responsibilities (http://www.infotech.monash.edu.au/about/committees-groups/facboard/policies/studrights.html) and the Faculty regulations that apply to students detected cheating as these will be applied in all detected cases.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications are non-discriminatory in all respects.

Students with disabilities

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

Deferred assessment and special consideration

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at http://www.monash.edu.au/exams/special-consideration.html. Contact the Faculty's Student Services staff at your campus for further information and advice.