

THE UNIVERSITY OF
NEW SOUTH WALES



Faculty of Business
School of Information Systems Technology and Management

INFS2603
Systems Analysis & Design

Course Outline
Session 1, 2007

1	COURSE STAFF	3
1.1	Communication with Staff.....	3
2	INFORMATION ABOUT THE COURSE	3
2.1	Teaching Times and Locations.....	3
2.2	Units of Credit.....	3
2.3	Relationship of This Course to Other Course Offerings.....	3
2.4	Approach to Learning and Teaching	3
3	COURSE AIMS AND OUTCOMES	4
3.1	Course Aims	4
3.2	Student Learning Outcomes.....	4
3.3	Teaching Strategies.....	4
4	STUDENT RESPONSIBILITIES AND CONDUCT	5
4.1	Workload	5
4.2	Attendance.....	5
4.3	General Conduct and Behaviour	5
4.4	Keeping Informed.....	5
5	LEARNING ASSESSMENT	5
5.1	Formal Requirements	5
5.2	Assessment Details.....	6
5.3	Assignment Submission	7
5.4	Special Consideration and Supplementary Examinations	7
6	ACADEMIC HONESTY AND PLAGIARISM	7
7	STUDENT RESOURCES	8
7.1	Course Website	8
7.2	Textbooks.....	8
7.3	Other Resources, Support and Information.....	9
8	CONTINUAL COURSE IMPROVEMENT	9
9	COURSE SCHEDULE.....	10

1 COURSE STAFF

		Office	Telephone/email	Consultation time
Lecturer In Charge	Prof. Graham Low	QUAD2104	9385 4638 g.low@unsw.edu.au	Tue 1-2pm Wed 4-5pm
Tutors	TBA			

1.1 Communication with Staff

When assistance is required, approach your lecturer during class or the scheduled consultation time.

University e-mail or telephone should be used only for urgent matters.

As a security measure, e-mails from anonymous accounts such as Yahoo or Hotmail will not be answered. Always use your official UNSW student account or your work e-mail. Please sign with your name and student number.

2 INFORMATION ABOUT THE COURSE

2.1 Teaching Times and Locations

The lecture times are:

Tuesday 2-4pm Lib1039 or Wednesday 5-7pm Lib1039

Tutorial times are: Tuesday 4-5pm or Tues 5-6pm or Wed 4-5pm.

All tutorials are in G025.

2.2 Units of Credit

INFS2603 attracts 6 Units of Credit.

2.3 Relationship of This Course to Other Course Offerings

This course covers material that is foundational to the discipline of information systems. It assumes completion of the core information systems courses INFS1602 Computer Information Systems and INFS1603 Business Data Management. The data modelling experience gained in INFS1603 will be drawn on extensively in this course.

This course provides the student with concepts and skills that are essential in careers such as business systems consultants, and systems analysts, designers, and developers.

2.4 Approach to Learning and Teaching

At university, the focus is on self-directed search for knowledge. Lectures, tutorials, laboratories, textbooks, exams and other resources are all provided to help this process. The primary vehicle in this course is work carried in collaboration with other students, inside and outside the classroom, under the guidance of your lecturer.

In class, we will work through short case studies, and this will be a unique opportunity for you to observe Systems Analysis and Design techniques in practice. You are encouraged to seek

clarification by asking questions during class. The assignment case study provides another opportunity to apply the concepts learned.

3 COURSE AIMS AND OUTCOMES

3.1 Course Aims

Whenever a business information system is developed, selected, purchased or implemented, a Information Systems Analysis and Design (SA&D) effort is usually undertaken. This could be a small task or a large-scale project. Therefore, INFS2603 is one of the cornerstone courses in the discipline of information systems offered by the School.

The aims of the course include:

- Provide a context or background for the SA&D activity;
- Introduce general systems analysis concepts & principles;
- Acquire skills in Object-Oriented (OO) and Structured SA&D;
- Obtain experience in small self-directed work groups, applying skills in interpersonal communications, project management and quality assurance.

3.2 Student Learning Outcomes

On successful completion of this course students will be able to:

- 1) Understand the business context of SA&D projects.
- 2) Understand the concepts, principles and terminology of the OO paradigm.
- 3) Understand a typical Systems Development Life Cycle (SDLC) and explain the different characteristics of OO SDLC and structured SDLC.
- 4) Understand the concepts, principles and terminology of the structured SA&D paradigm.
- 5) Be able to perform a structured systems analysis & design activity on a small-scale system.
- 6) Demonstrate an ability to synthesise ambiguous and incomplete information, and arrive at a decision by applying judgement and commonsense.
- 7) Understand some of the issues, benefits and disadvantages of working in small groups.
- 8) Communicate and describe systems with a professional approach in a written documentation.

3.3 Teaching Strategies

The course involves four key elements in facilitating your learning – the lecture, the classroom exercises, the collaborative group project, and your own study.

Each lecture will provide a short overview of topic at hand and will focus on explaining the difficult concepts and issues. The role of the lecture is to help you understand the context of the topic as well as explaining the difficult points. Each week readings from the textbook are recommended, both as preparation and as follow-up.

Classroom exercises relate to the topic of the current or previous weeks. The role of the exercises is to help build your understanding through the application of what you have learnt to case studies or real-life scenarios. They also give you the opportunity to discuss your work with your colleagues, and hence get an indication of your own progress. The exercises are not

assessed as such, but indirectly through your performance in the assignments and the final exam. However, most weeks you will be asked to prepare for certain exercises.

The collaborative group project is a major opportunity to demonstrate knowledge of systems analysis and design techniques, skill in their application, and skill in the management of a group project.

Self-directed private study is an important component of this course. The aims of all tertiary institutions refer, implicitly or explicitly, to the development of self-management skills. You should supplement lectures and classroom activities by reading the set readings, as well as further relevant materials from books, journals and Internet sources, in order to acquire a better understanding of different elements of the course, such as background to the assignment case scenario.

4 STUDENT RESPONSIBILITIES AND CONDUCT

4.1 Workload

It is expected that you will spend approximately 8-10 hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where you need to complete assignments or prepare for examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

4.2 Attendance

Your regular and punctual attendance at lectures and tutorials/labs is expected. University regulations stipulate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment.

4.3 General Conduct and Behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct that is disruptive or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

4.4 Keeping Informed

You should make note of all announcements made in class or on the course website. You should check the course website at least once a week. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information.

5 LEARNING ASSESSMENT

5.1 Formal Requirements

To receive a pass grade in this course, you must meet ALL of the following criteria:

- Attain an overall mark of at least 50%.
- Attend at least 80% of all scheduled classes.

- Attain a satisfactory performance in each component of the course. A mark of 45 percent or higher is normally be regarded as satisfactory.
- Attain a mark of at least 45% in the final exam

5.2 Assessment Details

Course Component	Element	Weight	Related Learning Outcomes	Mode	Due Date (in class)
Assignments	Assignment 1 (2 parts)	30%	1,2,5,6,7,8	Group	Part 1, Week 5; Part 2, Week 8
	Assignment 2	15%	1,4,5,6,8	Individual	Week 12
Final Exam	Final Exam	55%	1,2,3,4,6		Exam period
		100%			

5.2.1 Assignments

Both assignments are based on a mini-case discussion of a business problem. This requires students to analyse the business problem and design a solution. Assignment 1 will require the application of object-oriented concepts and the Unified Modelling Language (UML). Assignment 2 will require the application of structured analysis & design techniques to the same problem. Further details, including assessment criteria, will be provided shortly, in a separate document. The following considerations apply:

1. For assignment 1, students work in groups.
2. Submission procedures are covered in later section of this outline. Failure to comply will generally attract a penalty.
3. Students that commit to a group and then do not honour their commitments will lose marks. Group members are expected to work in a harmonious and professional way. This includes adequate management of non-performing members and conflict management. A group leader may be selected to help organise group activities, but the responsibility for the group's performance falls on all its members.
4. You are to report any problems to the lecturer-in-charge as early as possible. Confidential peer assessments may be used for group assignments if individual contributions vary significantly. The lecturer-in-charge will have the final discretionary authority to alter individual marks, based on information provided in the peer assessments and/or direct consultation with involved parties.

5.2.2 Final Exam

A formal closed-book examination worth 55% of the overall marks will be held during the official examination period. You must plan to be available for the full examination period to attend the final exam. In addition, you should also ensure that you will be available for a supplementary examination in the event of illness or misadventure. All material covered in lectures, classroom exercises, and set readings is examinable. All exams are conducted in accordance with the UNSW Rules for the Conduct of Examinations and it is your responsibility to be familiar with these rules. Refer to

<https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinations.html>

5.3 Assignment Submission

It is your responsibility to adhere to the procedures for submission of assignments otherwise a penalty may apply. The key requirements are:

1. Assignments shall be lodged in class during the week that they are due as indicated in the course schedule.
2. Late submission of assignments and class work will incur a penalty of 10 percent of the maximum available mark per day including weekends and public holidays. For example, an assignment worth 20% will attract a 2-mark penalty per day. An extension in the time of submission will only be granted under exceptional circumstances by the lecturer-in-charge. In all cases documented evidence must be provided to support such an application.
3. Partial submissions of your assignments will not be accepted.

5.4 Special Consideration and Supplementary Examinations

If you are ill or suffer a misadventure that you believe adversely impacts on your performance of the final examination or the course overall then you can apply for special consideration.

Applications for special consideration (including supplementary examinations) must be made to UNSW Central within 3 working days of the assessment to which it refers. Applications cannot be accepted by teaching staff, but please notify the lecturer in charge. You should note that applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result. Details of these procedures and policies can be found at:

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>

A register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.

6 ACADEMIC HONESTY AND PLAGIARISM

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

7 STUDENT RESOURCES

7.1 Course Website

The course website is hosted on WebCT Vista, accessible via www.elearning.unsw.edu.au. To access the course website you must be enrolled in the course. Please note that it can take up to 24hrs for your enrolment in NSS to be updated.

The course website will be used to publish announcements, lecture notes and support materials. Students are expected to visit the course website at least weekly to obtain breaking news.

7.2 Textbooks

Bennett, S., McRobb, S. & Farmer, R. (2006) *Object-Oriented Systems Analysis and Design using UML*, 3rd ed. McGraw Hill.

Kendall, K.E. & Kendall, J.E. (2002) *Systems Analysis & Design* (Custom Book), p.241-280, 5th Edition, Prentice-Hall.

(This is a special publication available from the UNSW bookshop comprising of chapters 9, 10 and 11 of the original book. There is no need to purchase the complete original book.)

7.3 Other Resources, Support and Information

The University and the Faculty provide a wide range of support services for students, including:

- Learning and study support
 - FCE Education Development Unit (<http://education.fce.unsw.edu.au>)
 - UNSW Learning Centre (<http://www.lc.unsw.edu.au>)
 - EdTec – WebCT information (<http://www.edtec.unsw.edu.au>)
- Counselling support (<http://www.counselling.unsw.edu.au>)
- Library training and support services (<http://info.library.unsw.edu.au>)
- Disability Support Services. Students with a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their needs with the Course Coordinator or the Equity Officer (<http://www.equity.unsw.edu.au/disabil.html>). Early notification is essential to enable any necessary adjustments to be made.

In addition, it is important that all students are familiar with University policies and procedures in relation to such issues as:

- Examination procedures and advice concerning illness or misadventure
<https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinationrules.html>
- Occupational Health and Safety policies and student responsibilities;
<http://www.riskman.unsw.edu.au/ohs/Policies%20&%20Procedures/UNSW%20OHS%20Accountability.pdf>

8 CONTINUAL COURSE IMPROVEMENT

Each session feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback. UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process (http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered. The School also solicits feedback from students during the session. Significant changes to courses and programs within the School are communicated to subsequent cohorts of students.

9 COURSE SCHEDULE

Note: Lectures are subject to alteration and not all materials in chapters listed will be covered.

Week	Lecture topic	Class Activity	Readings	Due in class
1	Introduction to course; SA&D context, principles, methods		Bennett Ch 1-3	
2	Introduction to I.S. modelling <ul style="list-style-type: none"> I.S. modelling Fundamental OO concepts 	Overview of Case Study and Assignment 1; Rich pictures; System responsibilities; Activity diagrams	Bennett 4, 5	
Object-Oriented Systems Analysis & Design				
3	User View <ul style="list-style-type: none"> Use cases Flow of events and scenarios 	Use case diagrams; Scenarios; Flow of events	Bennett 6	Group Registration Form
4	Structural View <ul style="list-style-type: none"> Objects, classes 	Class & Object diagrams	Bennett 7	
5	Behavioural View: Object Interaction <ul style="list-style-type: none"> Sequence and communication 	CRC cards; Sequence and Communication diagrams	Bennett 9	Assignment 1 (Part 1)
6	<ul style="list-style-type: none"> State machines Specifying operations 	State machine diagrams; decision charts and diagrams	Bennett 10, 11; Kendall 11	
7	Introduction to OO design; Revision	Group consultations	Bennett 13	
Structured Systems Analysis & Design				
8	Introduction to Structured SA&D <ul style="list-style-type: none"> Waterfall SDLC revisited 	Overview Assignment 2		Assignment 1 (Part 2)
9	Process Modelling <ul style="list-style-type: none"> Functional decomposition 	Event decomposition diagram (EDD)	Kendall 9	
Session Recess				
10	Process Modelling <ul style="list-style-type: none"> Process modelling 	Context diagram; System level data flow diagram (DFD)	Kendall 9	
11	Data Dictionaries <ul style="list-style-type: none"> Dictionary entries Combining data & process 	Lower level DFDs; Data dictionary	Kendall 10	
12	User Interface Design <ul style="list-style-type: none"> The human element Form/screen/report design 	Interface evaluation	Bennett 16, 17	Assignment 2
13	Beyond SA&D <ul style="list-style-type: none"> Implementation Support and maintenance 	Implementation strategy case study; CATEI course evaluation	Bennett 19	
14	Review of the Course <ul style="list-style-type: none"> Trends in methodologies Exam overview 	Course wrap-up	Bennett 21	