



The University of New South Wales
School of Information Systems, Technology and Management

INFS2609 Software Implementation

Course Outline - Session 1, 2005

<http://sistm.web.unsw.edu.au/courses/infs2609/>

SOFTWARE IMPLEMENTATION

Overview

1. Course Description

INFS2609 introduces fundamental concepts for object oriented software design and implementation in the development of information systems. The course focuses on the *whole* of the implementation process. It examines object-oriented methodologies for defining the software problem, designing the solution, constructing and implementing systems that meet specified requirements. The course provides a foundation for software implementation in the business context through the practical application of a commercial object-oriented programming language. The programming language used is **Java**. The concepts principles and theoretical approaches presented in the course are reinforced in weekly laboratory exercises and course assignments. Students will gain experience in the use of an IDE (interactive development environment) application for project programming requirements. This course is suitable for students approaching a programming language for the first time.

Key competencies objectives

- Awareness of the overall software development process in the implementation of information systems
- Knowledge of object oriented analysis and design methodologies for software development and implementation
- Appreciation of the concepts behind object oriented programming languages
- Familiarity in modeling systems requirements, and documenting and communicating systems design to stakeholders
- Understanding of processes for software quality assurance, including planning, designing and testing
- Experience in using a commercial programming language in an interactive development environment
- Demonstrate an understanding of the core concepts and principles of the course through the development of practical applications

The course provides students with:

1. An introduction to software engineering and the software development process within the context of information systems development
2. A general understanding of object-oriented programming with emphasis on the relationship to information systems development
3. Knowledge of the Unified Modelling Language (UML) and techniques used for graphical representation in object-oriented analysis and design.
4. Experience in working in a team environment, managing group dynamics and project reporting
5. Knowledge of a commercial programming language used extensively for distributed applications in the domain of electronic commerce
6. Working knowledge of the fundamentals of computer programming languages including the use of data types, selection, iteration, functions, arrays and data structures in procedural programs;
7. Experience in the use of an IDE (interactive development environment) application for managing project requirements.

2. Prerequisites

INFS1602, Computer Information Systems and INFS16503, Business Data Management

3. Contact information

Lecturer in charge:	Fethi Rabhi	Office:	Email:
Course tutor:	Decler Hague	Quad 2099	f.rabhi@unsw.edu.au
		Quad 2115	decler@unsw.edu.au

3.1 Lectures and Laboratory Sessions

Lectures: Wednesdays 16:00-18:00, Webster A

Supervised Lab Sessions: Wednesdays 11:00-12:00 (Lab 6), 14:00-15:00 (Lab 6), 18:00-19:00 (Lab 5)

Unsupervised Lab Sessions: Mondays 9:00-10:00 (Lab 6), 11:00-12:00 (Lab 6), 15:00-16:00 (Lab 6)

3.2 Email communication

Students should note that it is school policy to only respond to email messages that are clearly identifiable as having originated from legitimate accounts. Legitimate email accounts are:

- A UNSW student account
- An identifiable employer provided account
- An identifiable ISP account (bigpond, ozemail, etc)

Messages from Hotmail, Yahoo, Google and other similar services will not be replied to. All students and staff are expected to use email responsibly and respectfully.

3.3 Consultation arrangements

Staff will be available for consultation without appointment **only** during advertised consultation times for the semester. Check the course web site for details of consultation times. To consult with a staff member outside of these times you must first make an appointment.

4. Teaching and Learning Approaches

4.1 Delivery mode

The course is presented in a *mixed* delivery mode. Each week will comprise a minimum of 1 hour lecture and 1 hour laboratory session. An additional 1 hour lecture or 1 hour laboratory will be arranged each week and advertised in advance. The start time for fixed lectures and laboratories will be the same for each session. The majority of the lecture material will be directly related to the practical component of the course and will not be repeated in laboratory sessions.

4.2 Workload expectations

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

Time management issues and 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.

4.3 Course schedule

Wk	Commencing	Lecture topic	Laboratory
1	28 February	Programming Languages and Information Systems Readings: Charatan & Kans, Chapter 1	No Lab
2	07 March	Object Oriented Programming and Software Development Readings: Charatan & Kans, Chapter 4	Lab 1
3	14 March	Java Basics I Readings: Charatan & Kans, Chapters 2 & 3	Lab 2
4	21 March	Java Basics II Readings: Charatan & Kans, Chapter 5 & 6	Lab 3
		Easter Recess	
5	4 April	GUI Objects and visual design Readings: Charatan & Kans, Chapters 9, 17 & 19	Lab 4
6	11 April	OOP Problem Solving: Software Quality, Design & Testing Readings: Charatan & Kans, Chapter 8 & 10	Lab 5
7	18 April	Collection Classes, Applets and Arrays Readings: Charatan & Kans, Chapters 6 & 7	Lab 6
8	25 April	Java Database Connectivity Readings: Course Lecture Notes	Lab 7
9	02 May	Object Oriented Classes & Methods Readings: Charatan & Kans, Chapters 7, 13 & 14	Lab 8
10	9 May	Java Remote Method Invocation (RMI) Readings: Course Lecture Notes	Lab 9
11	16 May	Guest lecture: Java for programming the Web	Lab 10
12	23 May	Object Oriented Classes & Methods II Readings: Charatan & Kans, 7, 13 & 14	Lab 11
13	30 May	Inner Classes and Input/Output Readings: Charatan & Kans, Chapters 15 & 16	Lab 12
14	06 June	Course Revision Readings: Charatan & Kans and Course Lecture Notes Mode: No lecture: <u>You must attend your registered lab</u>	Lab 13

4.3 Lab schedule

In addition to the weekly lecture session students are required to attend a computer laboratory session each week. The session will be held in the computer laboratory for the course. The following schedule indicates what is happening each week:

Lab schedule

Week	Week starts	Laboratory / Tutorial
1	28 February	No tutorials this week
2	07 March	Lab 1: JDK & KAWA
3	14 March	Lab 2: Java Basics I
4	21 March	Lab 3: Assessment 1: Java Basics
Break	Easter	Recess
5	4 April	Lab 4: GUI Objects/Events
6	11 April	Lab 5: Assessment 2: GUI Objects/Events
7	18 April	Lab 6: Defining Classes/Strings & Arrays
8	25 April	Lab 7: Assessment 3: Strings & Arrays
9	02 May	Lab 8: JDBC
10	9 May	Lab 9: Assessment 4: JDBC
11	16 May	Lab 10: Java RMI
12	23 May	Lab 11: Coding Exercises
13	30 May	Lab 12: Project Demonstrations
14	06 June	Lab 13: Demonstrations/Course Revision

You are required to enroll in laboratory sessions for this course via the Faculty of Commerce & Economics Tutorial Allocation System (TAS). BIT students are automatically enrolled into the Wednesday 18-19 Session.

Laboratory sessions are compulsory and students are expected to **attend at least 80%** of the sessions. Students who do not have satisfactory attendance **will** be asked to show cause why they should be allowed to pass this course.

All programming exercises must be completed within the laboratory time allocated in the relevant week.

Students will need to bring at least two new 9cm high density IBM formatted diskettes to use during labs.

6. Assessment

The assessable components for the course are divided into three distinct categories:-

Assessable Component	Percentage
I. Laboratory Work Regular lab exercises Assessments 1, 2, 3 and 4	20%
II. Project Intermediate deliverables (specs, design) Demonstration Final report	30%
III. Final exam	50%

- Any number of the assessment components may be scaled
- All three components of the course must be completed to a satisfactory level. If a satisfactory level of performance is not achieved in any one of the components of assessment a grade of UF will be awarded
- Late submission of assignments will incur a penalty of 10% of the maximum assessment per day. An extension in the time of submission will only be granted under exceptional circumstances by the lecture-in-charge. **In all cases documented evidence must be provided**
- Failure to reference your work through the provision of bibliographies and cited sources will automatically result in a penalty of 10% of the maximum assessment. Team/Group members are expected to work in an harmonious and professional manner
- **This course will be assessed in accordance with the School's assessment policies that can be found at: <http://sistm.web.unsw.edu.au>**

7. Student resources: texts and required readings

7.1 Texts

The required text for this course is

Charatan, Quentin & Aaron Kans. Java in Two Semesters, 1st Ed. 2002, United Kingdom, McGraw Hill. ISBN 0 07 709804

7.2 Recommended readings

Getting started with Java

Deitel, H.M & Deitel. P.J. Java, How to Program, 4th Ed. 2001, Saddle River, New Jersey, Prentice Hall

Liang, Y. Daniel. Introduction to Java Programming, 3rd Ed. 2001, Upper Saddle River, New Jersey, Prentice Hall

Wu, C. Thomas. An Introduction to Object Oriented Programming with Java, 2nd Ed. 2001, Boston, USA, McGraw Hill.

JDBC: Java Database Connectivity

Carnell John, Lauinger, Todd and Mukhar, Kevin. Beginning Java Database, 2001, Birmingham, USA, Wrox Press

White, Seth et al. JDBC API Tutorial and Reference. 2nd Ed, 1999, San Francisco, USA, Addison Wesley

Unified Modeling Language

Fowler, Martin. UML Distilled 2nd Ed. (Object Technology Series), 2000, Reading Mass. USA, Addison Wesley

7.3 Electronic resources

Java portal

<http://java.about.com>

Sun Microsystems Java Homepage

<http://java.sun.com>

7.4 Course Web Site

This course has a web site for notices, handouts, references and other useful information. It is suggested that you consult the web site at least once a week. The address of the web site is at:

http://sistm.web.unsw.edu.au/courses/infs2609/

To log in you will need your student number and unipass. Access is only available to students enrolled in INFS2609. Included on the Course Web Site will be:

- Lecture slides (PDF format)
- Academic staff contact details
- List of consultation times
- Notices
- Course readings.
- Copies of assignment cover sheets, registration and assessment forms

You are encouraged to visit this site regularly for updates and important notices.

8. General assignment requirements and academic conduct

8.1 Assignment requirements

All assignments must be submitted at an acceptable standard to meet the requirements of the course. Information about the format required for the submission of each assignment will be provided in documentation for the assignment.

ALL written work is expected to be clear, accurate, well-structured, grammatically correct and neat work, which does not contain spelling errors. Your work should be suitable for presentation to senior management in an organisation.

For the purposes of marking, electronic files and program code must be compatible with the software in the laboratories (i.e. display and function correctly in Internet Explorer 5.5+ and JDK2+)

When submitting written work:

- Do not use any plastic folders
- Use A4 sized paper only.
- Always include the correct assignment cover sheet and required administrative forms

When submitting electronic files:

- submit on a standard 9cm floppy disk
- submit an A4 envelope
- Always adhere the correct assignment coversheet to the envelope
- Enclose any additional administrative forms required for the assignment

8.2 Academic misconduct

Students are reminded that the University regards academic misconduct as a very serious matter. Students found guilty of academic misconduct are usually excluded from the University for 2 years. Because of the circumstances in individual cases the period of exclusion can range from one session to permanent exclusion from the University. The following are some of the actions which have resulted in students being found guilty of academic misconduct in recent years:

1. submitting work for assessment knowing it to be the work of another person;
2. failing to acknowledge the source of material in an assignment;
3. improperly obtaining prior knowledge of an examination paper and using that knowledge in the examination;
4. taking unauthorised materials into an examination.

8.3 Plagiarism

Student discussion and comparison of the ideas and concepts raised in this course is encouraged. However, students may not submit the work of anyone else in an assignment unless full credit for the source is given. Plagiarism entails taking and using as one's own, the thoughts or writings of another without acknowledgement including:

- (a) where paragraphs, sentences, a single sentence or significant part of a sentence which are copied directly, are not enclosed in quotation marks and appropriately footnoted
- (b) where direct quotations are not used, but ideas or arguments are paraphrased or summarised, and the source of the material is not acknowledged either by footnoting or other reference within the text of the paper
- (c) where an idea, which appears elsewhere in print, film or electronic medium, is used or developed without reference being made to the author or the source of the idea

Use of another person's work from any source without proper acknowledgment is considered to be a serious academic offence.

For further information relating to Faculty policy on academic misconduct and student responsibilities can be found at http://www.fce.unsw.edu.au/current_students/responsibilities.shtml#misconduct

8.4 Referencing

You should include references to the sources of your information, and a bibliography at the end of each of your submitted assignments, including lab assessment tasks. References cited in the text of your report should be included in the bibliography with sufficient detail to enable the reader to go directly to the relevant material. Some examples:

1. A book
Wu, C. Thomas. An Introduction to Object Oriented Programming with Java, 2nd Ed. 2001, Boston McGraw Hill.
2. A journal article
Durant, Luciana, 'The concepts and their implications, 'Extreme Programming, vol. 39, Spring, 1999. pp. 5-10

3. An internet URL

Author/editor. (Year). *Title* (edition), [Type of medium]. Producer (optional). Available Protocol (if applicable): Site/Path/File [Access date].

Harold, Elliotte Rusty (2002). *Brewing Java: A tutorial* [Online]. Available:
<http://www.ibiblio.org/javafaq/javatutorial.html>
[2002, February 12].

If you are uncertain about how to cite or reference the work of others, please refer to the collection of resources about citations and referencing located on the UNSW Library Web Site.

This can be found at the following URL:

http://www.library.unsw.edu.au/links/Reference_Tools/
http://www.library.unsw.edu.au/links/Research_and_Study_Skills/

9. STUDENT SUPPORT AND ASSISTANCE

9.1 Educational Development Unit

Additional learning support, tailored to the needs of FCE students, is available from the Education Development Unit (EDU) in the Faculty. The EDU offers a range of free and confidential services for FCE students including:

- o Academic skills workshops run throughout the session;
- o Printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation;
- o A drop-in resource centre containing books and audio visual material that can be borrowed;
- o A limited consultation service for students with individual or small group learning needs.

More information about the EDU services including on-line resources, workshop details and consultation request forms are available from the EDU website.

EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics.

Contacts and location:

EDU Location: Room 2039, Level 2 Quadrangle Building, <http://education.fce.unsw.edu.au>

9.2 Other UNSW support

The UNSW Learning Centre provides academic skills support services for students. The Learning Centre is located on Level 2 of the Library and can be contacted by Phone: 9385 3890 or through their website: <http://www.lc.unsw.edu.au/>. Students experiencing problems of an academic or personal nature are encouraged to contact the Counselling Service at UNSW. This service is free and confidential and run by professional counsellors. The Counselling Service is located on Level 2, Quadrangle East Wing, and can be contact on 9385 5418.