The University of New South Wales

School of Information Systems, Technology and Management

INFS3608 Advanced Database System

Course Outline Session 2, 2005

Objectives

On successful completion of this course, students will:

- Be able to design high-quality relational databases and database applications.
- Have developed skills in advanced visual & conceptual modelling and database design.
- Be able to translate complex conceptual data models into logical and physical database designs.
- Gain an understanding of Oracle 9i.
- Gain experience in technical writing and systems documentation.
- Gain experience in working with a team, scheduling, managing a project and team management.
- Have developed an appreciation of emerging database trends as they apply to semi-structured data, the internet, and object-oriented databases.

Staff

Lecturer in charge:	Greg Stephens	QUAD2070	g.stephens@unsw.edu.au
	Zixui Guo	QUAD2108	z.guo@unsw.edu.au

NOTE: USE ONLY YOUR OFFICIAL STUDENT EMAIL ACCOUNT IN EMAIL COMMUNICATION.

Consultation Times

See the course website on webCT.

Course Arrangements

The subject consists of a two-hour lecture and one-hour tutorial or lab session each week. In addition, there may be some in-lecture exercises. Refer to the lecture outline below for which weeks are computer labs and which ones are going to be tutorials. Tutorials questions will be posted on the course web site. Students should

attempt to complete the questions before the tutorials, and it is expected that at least 80% of the tutorials should be attended.

Learning Experience

Information Systems is a discipline undergoing continuous change. Technologies and practices change frequently and those of us involved in the areas of information technology and information management need to understand fundamental IS concepts and to relate them to the changes as they occur.

In addition to attending lectures each week it is expected that students will devote 6-7 hours per week outside of class time specified for the course. This time will involve activities such as:

- reading textbook chapters, lecture notes and other relevant material in preparation for lectures;
- completing tutorial assignments;
- completing laboratory exercises not completed in class;
- learning how to use Oracle;
- completing assignment work; and,
- revising work covered in previous lectures.

Assessment

	Component	Marks	Date Due
1	Database Assignment Part A	10	Week 6 - Fri, 5 PM, 9th April 2004
2	Database Assignment Part B	25	Week 12 - Fri, 5 PM, 28th May 2004
3	Examination	65	Examination Period

Notes:

- A cover sheet is required on all submissions of the database assignment - the required cover sheet can be downloaded from the course website.
- Tutorial work will be periodically collected for feedback purposes.

Component Details

Database Assignment

The database design assignment consists of two parts, viz, Part A (Design) and Part B (Implementation). It is a team project with a team size of 4-5 persons. No exceptions. The mark assigned to each member of the group will be scaled based on peer assessment of each group member's contribution to the task. Team members are expected to work in a harmonious and professional manner. Details of the database assignment will be released on the course website. Students will present a walkthrough

of their database implementation in a computer lab during Weeks 13/14 (more details will be released later on the website).

You are required to learn Oracle by yourself. A set of self paced tutorials is provided to get you started. An Oracle reference book has been recommended to help you learn Oracle. This Oracle book includes the "Oracle 9i Database and Developer Suite" that can be used from your PC at home to develop applications while connecting to the database server at FCE (Faculty of Commerce and Economics).

Examination
A two-hour closed-book examination will be held during the examination period. Details will be provided toward the end of Session.

General course assessment requirements
- All assignments are expected to be clear, accurate, well-structured, grammatically correct, neat, and not contain spelling errors. All submitted work should be suitable for presentation to an organisation's senior management.
- All work submitted must have a title page attached (see web site). Pages should be stapled in the top-left corner. Please do not submit work in a plastic sleeve unless a disk needs to be submitted with printed materials.
- Late submission of assignments will incur a penalty of 1 mark per day. An extension will only be granted under exceptional circumstances by the lecturer-in-charge. In all cases documented evidence must be provided.
- In order to pass this course, a satisfactory performance is required in each component of the assessment. A mark of 45% or lower in a component would normally be regarded as unsatisfactory. Each component of the course may be scaled.
- Other School policies can be found under Current Students on the School website at:
  http://www.sistm.unsw.edu.au/
  It is your responsibility to ensure that you are aware of and understand these policies.

Education 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 services for FCE students including:
- Academic skills workshops run throughout the session;
- Printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation;
- A drop-in resource centre containing books and audio visual material that can be borrowed;
- 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.

Contacts and location:

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

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

Other UNSW Support

In addition to the EDU services, 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/.

If you are experiencing problems of an academic or personal nature you 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.

Academic Misconduct

You 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. However, 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 that have resulted in students being found guilty of academic misconduct in recent years:

- taking unauthorised materials into an examination;
- Submitting work for assessment knowing it to be the work of another person;
- improperly obtaining prior knowledge of an examination paper and using that knowledge in the examination, and
- failing to acknowledge the source of material in an assignment (plagiarism).

Plagiarism

Student discussion and comparison of ideas and concepts raised in this course are encouraged. However, you may not submit the work of anyone else in an individual assignment unless full credit for the work is given. Use of another person's work

from any source without proper acknowledgement is considered to be plagiarism and is regarded as a serious offence. In the case of group work, any material from outside the group should also be referenced and credited to the appropriate author.

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; and
(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.

If you are uncertain about how to cite or reference the work of others please refer to the collections of resources about citations and referencing located at:

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

Further clarification of this issue and the policy regarding plagiarism can be found at:

http://www.fce.unsw.edu.au follow the Current Student tab then look under Key Information. This site also outlines other responsibilities that you have as a student of this University.

Required Readings

Reference Text:	R. Elmasri & B. Navathe **Fundamentals of Database Systems, 4th ed.**, Addison Wesley 2003. Library normally holds some copies in older versions. [P005.74/108N; P005.74/108S; P005.74/108T; P005.74/108U; P005.74/108V; P005.74/108W; P005.74/108X]
Oracle text:	J. Morrison & M. Morrison (2002). **Guide to Oracle9i**, Thomson Learning, 2003 **AT LEAST TWO OR THREE COPIES TO A GROUP REQUIRED**
Article:	Jansons, S. & Cook G, **"Web-enabled Database Connectivity: A Comparison of Programming, Scripting, and Application-based Access."** Information Systems Management, Winter, 2002. [Copies available in open reserve - W/0430; W/0430/(A).]

References

Note: some references are starred - see course schedule for reasons why.

Elmasri, & Navathe, **Fundamentals of Database Systems (4rd edition)** 2003, Addison-Wesley. *

Batini C., Ceri S. and Navathe S.B., 1991, **Conceptual Database Design: An Entity Relationship Approach,** Benjamin/Cummings.

O'Neil, P., **Database Principles Programming and Performance**, Morgan Kaufmann, 1994 *

Date, C.J., **An Introduction to Database Systems, 7th Ed., 2000**, Addison-Wesley, New York. *

Khoshafian, S., **Object-Oriented Databases, 1993**, John Wiley & Sons, Inc., New York.

Hawryszkiewycz, I, **Database Analysis and Design, 2nd ed.** Macmillan *

Desai, B., **An Introduction to Database Systems, 1990**, West Publishing Company *

Course Schedule

<table>
<tr><th>Week</th><th></th><th>Topic</th><th>Reading</th><th>Tut/Lab</th></tr>
<tr><td>1</td><td>25/7</td><td rowspan="6">Advanced Database Design
• the logical model
• decomposition & synthesis
• normalisation
• advanced normalisation
We will work through this material using interactive sessions within the lecture time.
Some students may find the material on FD's, decomposition and normalisation challenging. Additional material is available in the references above marked with an *.</td><td rowspan="6">Ch 10, 11</td><td></td></tr>
<tr><td>2</td><td>1/8</td><td>Oracle Lab 1: Schema Builder</td></tr>
<tr><td>3</td><td>8/8</td><td>Oracle Lab 2: Forms</td></tr>
<tr><td>4</td><td>15/8</td><td>Oracle Lab 3: Mast/Det Blocks</td></tr>
<tr><td>5</td><td>22/8</td><td>Oracle Lab 4: Menus</td></tr>
<tr><td>6</td><td>29/8</td><td>Oracle Lab 5: Reports</td></tr>
<tr><td>7</td><td>5/9</td><td>Project Implementation Workshop</td><td>Ch 12</td><td>Oracle Lab 6: Explicit Cursor</td></tr>
<tr><td>8</td><td>12/9</td><td rowspan="2">Object Database Systems
• object databases
• object relational</td><td rowspan="2">Ch 21, 22</td><td rowspan="2">Tutorial 1 & 2: Design</td></tr>
<tr><td>9</td><td>19/9</td></tr>
<tr><td></td><td>26/9</td><td colspan="3">Mid Session Break</td></tr>
<tr><td>10</td><td>3/10</td><td>Internet Databases</td><td>Ch 26</td><td>Tutorial 3: Design</td></tr>
<tr><td>11</td><td>10/10</td><td rowspan="2">Data Warehousing</td><td rowspan="2">Ch 28</td><td>Tutorial 4: XML</td></tr>
<tr><td>12</td><td>17/10</td><td>Tutorial 5: Data Warehousing</td></tr>
<tr><td>13</td><td>24/10</td><td>Emerging Technologies</td><td>TBA</td><td rowspan="2">DB Implementation Presentations</td></tr>
<tr><td>14</td><td>31/10</td><td>Revision</td><td></td></tr>
</table>

Notes:
Chapter references are for Elmasri & Navathe.
The Morrison & Morrison text is a reference for Oracle and is your primary source for completion of the implementation.