INFS1603
BUSINESS DATABASES

Course Outline
Semester 2, 2015

Part A: Course-Specific Information

Please consult Part B for key information on Business School policies (including those on plagiarism and special consideration), student responsibilities and student support services.
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PART A: COURSE-SPECIFIC INFORMATION

1 STAFF CONTACT DETAILS

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Email</th>
<th>Room</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer-in-charge</td>
<td>Dr Ben Choi</td>
<td><a href="mailto:chun.choi@unsw.edu.au">chun.choi@unsw.edu.au</a></td>
<td>Room 2113, Quadrangle</td>
<td>9385 9843</td>
</tr>
</tbody>
</table>

LIC Consultation Time: Tuesday, 10:00 – 12:00 (by appointment only)

The preferred method of contacting your lecturer or tutor is through email. Your UNSW e-mail account should be used for formal notices and correspondence regarding the course. For security reasons, please avoid using e-mails from anonymous accounts, such as Yahoo, Hotmail, and Gmail. Always start the subject line of emails with INFS1603 and sign the email with your full name and student number.

If you need to contact the School urgently you can contact the School Office on 9385-5320 or email: istm@unsw.edu.au.

2 COURSE DETAILS

2.1 Teaching Times and Locations

Lectures start in Week 1 (to Week 12)
The Time: Wednesday 0900-1100
The Location: ChemSc M18

Tutorials start in Week 2 (to Week 13).
The Groups and Times are as follows:

Group W11A: Wednesday 11:00-12:00
Group W14A: Wednesday 14:00-15:00

2.2 Peer Assisted Study Sessions (PASS)
PASS sessions run from week 3 to week 13.
Timetables for the PASS groups will be announced later.

2.3 Units of Credit
The course is worth 6 units of credit.

2.4 Summary of Course
The course provides students with an introduction to the concepts, techniques and technologies relevant for creating and managing business databases. Databases are major components of information systems. Information systems require databases to capture, transmit, store, retrieve, manipulate and display information used in business processes. Databases are of critical importance in virtually every industry sector. The course provides fundamental knowledge on business databases, which are foundational for many advanced courses.
2.5 Course Aims and Relationship to Other Courses

This course is a core first year course in the information systems curricula offered by the School of Information Systems, Technology and Management. The course does not have any prerequisite courses. A central aim of this course is to prepare students for INFS2603 Business Systems Analysis, INFS2609 System Delivery and Implementation and INFS3608 Data and Information Management.

The course also aims to give students the background of, and a process for, database development. Furthermore, the course aims to develop students’ conceptual and logical database design skills. Finally, the course aims to develop students’ skills in using and managing databases. Students will practice self-directed work in groups that will help them develop interpersonal communication, project management and quality assurance skills.

2.6 Student Learning Outcomes

On successful completion of this course, you should be able to:

1. Discuss the role and function of databases in information systems (IS).
2. Discuss the relation between databases and IS development processes.
3. Apply conceptual database modelling methods (e.g., ER modelling).
4. Apply normalisation techniques to database schema.
5. Design a small size database system.
6. Use the SQL language to create and use databases (e.g., in Oracle).
8. Work professionally in a project team.
9. Explain the roles of database administrators (DBAs) in organizations.
10. Discuss privacy and ethical issues of database systems.

The Course Learning Outcomes are what you should be able to DO by the end of this course if you participate fully in learning activities and successfully complete the assessment items.

The Learning Outcomes in this course also help you to achieve some of the overall Program Learning Goals and Outcomes for all undergraduate students in the Business School. Program Learning Goals are what we want you to BE or HAVE by the time you successfully complete your degree (e.g. ‘be an effective team player’). You demonstrate this by achieving specific Program Learning Outcomes – what you are able to DO by the end of your degree (e.g. ‘participate collaboratively and responsibly in teams’).

For more information on the Undergraduate Program Learning Goals and Outcomes, see Part B of the course outline.
Business Undergraduate Program Learning Goals and Outcomes

1. Knowledge: Our graduates will have in-depth disciplinary knowledge applicable in local and global contexts.
   You should be able to select and apply disciplinary knowledge to business situations in a local and global environment.

2. Critical thinking and problem solving: Our graduates will be critical thinkers and effective problem solvers.
   You should be able to identify and research issues in business situations, analyse the issues, and propose appropriate and well-justified solutions.

3. Communication: Our graduates will be effective professional communicators.
   You should be able to:
   a. Prepare written documents that are clear and concise, using appropriate style and presentation for the intended audience, purpose and context, and
   b. Prepare and deliver oral presentations that are clear, focused, well-structured, and delivered in a professional manner.

4. Teamwork: Our graduates will be effective team participants.
   You should be able to participate collaboratively and responsibly in teams, and reflect on your own teamwork, and on the team’s processes and ability to achieve outcomes.

5. Ethical, social and environmental responsibility: Our graduates will have a sound awareness of the ethical, social, cultural and environmental implications of business practice.
   You should be able to:
   a. Identify and assess ethical, environmental and/or sustainability considerations in business decision-making and practice, and
   b. Identify social and cultural implications of business situations.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed:

<table>
<thead>
<tr>
<th>Program Learning Goals and Outcomes</th>
<th>Course Learning Outcomes</th>
<th>Course Assessment Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course helps you to achieve the following learning goals for all Business undergraduate students:</td>
<td>On successful completion of the course, you should be able to:</td>
<td>This learning outcome will be assessed in the following items:</td>
</tr>
</tbody>
</table>
| 1 Knowledge | Discuss the role and function of databases in information systems. | • Quiz A and B  
• Exam |
| 2 Critical thinking and problem solving | Discuss the relation between databases and IS development processes. | • Assignment A and B  
• Lab exercises  
• Exam |
| 3 Communication | Apply conceptual database modelling methods (e.g., ER modelling). | |
| 4 Teamwork | Apply normalisation techniques to database schema. | |
| 5 Ethical, social and environmental responsibility | Design a small size database system. | |
| 6 | Use the SQL language to create and use databases (e.g., in Oracle). | |
3 LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course
This course introduces you to the foundations of the programming discipline, which underlies most technical subjects such as creating databases, conceptual background and analytical techniques, and database design. The course provides a first step towards learning the principles of database design through the use of the Oracle as the main database tool.

We will cover a lot of material in INFS1603, so it is vital that you study from Week 1. Essentially, this means that you should read the course materials and prepare for your workshops. The course team will facilitate your learning by providing the guidance as to what you need to study, and working with you on problems you may encounter. It is, however, your responsibility to make a concerted and timely effort to study. If you make this effort you will find the material interesting, the course worthwhile and the interaction with your fellow students stimulating. You should also do well.

3.2 Learning Activities and Teaching Strategies
The course involves three key components – lectures, workshops, and your private study.

Each lecture will outline the main concepts and methods for this course. The lecture focuses on conceptually creating databases. You will learn the conceptual background and analytical techniques relevant for ER and database design. The lecture notes also include exercises that you can solve in class or at home. The exercises provide an opportunity to test your knowledge and understanding. There will continuous opportunities to ask questions and actively participate in class. It is expected that you will spend approximately 10 hours per week studying for this course. This time should be made up of reading, revision, working on exercises and problems, and attending classes (lectures and tutorials). In periods where you need to complete assignments or prepare for examinations, the workload may be greater.

Tutorials will be used to reinforce and apply material covered in lectures and study material. The tutorials focus on using and managing database. You will become familiar with Oracle as a main database tool. The tutorials are interactive, collaborative sessions in which students hands-on apply the concepts of the lecture. You will learn essential SQL skills, which will allow you to write queries against single and multiple tables, manipulate data in tables, create database objects, use the dictionary views to retrieve metadata and create reports about schema objects. You also learn some of the date-time functions available in Oracle. Tutors are responsible for all laboratory
sessions and your database design project. You should always refer to your tutors first with problems regarding the laboratory or the database design project.

**Your private study** is the most important component of this course. The textbook contains self-assessment exercises to help you. The self-assessment exercises are designed to test your understanding of the topic at hand and include review questions, application questions and discussion questions of varying difficulty. The course site on Moodle will provide you with access to additional materials.

**Peer Assisted Study Sessions (PASS).** PASS offers free, weekly, out-of-class study sessions available to all students enrolled in INFS1602. They are facilitated by a leader (or leaders) who have previously and successfully completed the course. Attending PASS regularly can help you to:

- Learn in a supportive environment from your peers
- Meet other students and friends
- Reinforce what you learn in lectures and workshops
- Practice problems with experienced leaders
- Learn how to study effectively
- Feel free to ask any questions

PASS sessions begin in week 3. There is no need to register. It is recommended that you attend the same group regularly but there is no obligation. You can even attend more than one PASS group a week if you like. You can also choose to attend some weeks but not others.

Timetable of PASS will be available on Moodle.

## 4 ASSESSMENT

### 4.1 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 regarded as satisfactory.
- Attain a mark of at least 45% in the final exam.

The School reserves the right to scale final marks to a mean of 60%.

### 4.2 Assessment Details

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weighting</th>
<th>Length</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Exercises</td>
<td>5%</td>
<td>See below</td>
<td>Week 2 – 13</td>
</tr>
<tr>
<td>Quiz A and Quiz B</td>
<td>10%</td>
<td>See below</td>
<td>In week 7 lecture and week 11 lab</td>
</tr>
<tr>
<td>Assignment (Part A, and Part B)</td>
<td>25%</td>
<td>See below</td>
<td>Week 5 and Week 11</td>
</tr>
</tbody>
</table>
Final Exam | 50% | 2 hours | Exam period
---|---|---|---
Total | 100%

**Tutorial Exercises**

You need to complete the weekly lab exercises at home and show you solutions to your tutor. The lab exercises support the development of skills required for part B of the assignment. A manual for completing weekly lab exercises will be provided in the tutorials (as a complement to the textbook). Note that late submissions are not accepted and there is no special consideration for this assessment component.

**Quiz A and Quiz B**

You need to participate in two quizzes during regular class times. These quizzes are short, formal tests of your knowledge and skills.

- Quiz A will be on ER modelling and normalization (in the lecture).
- Quiz B will be on SQL (in the lab).

For administrative purposes, you can attend Quiz B only in the lab that you are enrolled in. Note that late submissions are not accepted.

**Assignment (Part A and B)**

You need to complete the assignment (which consists of Part A and Part B) in a group of 5 members. The assignment involves the design and the implementation of a database. The assignment consists of two parts:

- Part A includes entity relationship diagram, relational model and data dictionary.
- Part B includes the actual database implementation (in Oracle) and an oral presentation.

The assignment provides an opportunity for you to experience teamwork in a practical database design and implementation project scenario. Your skills in written communication will be evaluated through your project report. Your skills in oral communication will be evaluated through your group presentation. You will need to learn Oracle for the group assignment. Marks from the assignment might be adjusted based on peer assessment/peer marking. The assignment requirements document will be available on the course website. The LIC will provide further advice on the assignment in the lecture.

**Assignment Submission Dates**

**Part A:** [week 5] Thursday 27 August, 5PM (Strict Deadline)

**Part B:** [week 11] Thursday 15 October, 5PM (Strict Deadline)

Further information regarding the specific details and submission procedure for assignments will be posted on Moodle as well as discussed during lectures and/or tutorials.

Please Note: Each student is responsible for their own work. Assignments will be checked for evidence of plagiarism. Plagiarism includes copying, inappropriate
paraphrasing, collusion, as well as self-plagiarism. For instance, deliberately or recklessly presenting your work in collusion with others, copying or stealing another student’s assignment, or paying for work to be done may all be considered acts of Level 3 Plagiarism. This constitutes as significant plagiarism and serious student misconduct that is in breach of the Student Code.

Reminder: All students should keep a copy of all work submitted for assignments.

**Final Examination**

A final written examination will take place during the University Exam Period. The examination time will be 2 hours. The examination is worth 50% of the total marks for this course. Candidates may not bring any course materials to the examination. The examination paper may not be retained by the candidate.

**4.3 Assignment Submission Procedure**

Assignments need to be submitted as a PDF soft copy online and as a hard copy on the due day (both with signed UNSW cover sheet). A signed cover page must accompany submission of assignments. Digital signatures are not allowed. Missing cover page or cover page without authentic signatures will result in a penalty of 10% of the maximum marks available for assignments. Assignments will be screened with plagiarism-detecting software. The submission of non-original materials will be considered plagiarism and will be pursued.

**4.4 Late Submission**

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

- Assignments shall be submitted as indicated in the course schedule and according to the instructions of the lecturer-in-charge.
- The late submission of assignments carries a penalty of 10% of the maximum marks for that assignment per day of lateness (including weekends and public holidays), unless an extension of time has been granted. For example, an assignment worth 10% will attract a 1-mark penalty per day. An extension in the time of submission will only be granted by the lecturer-in-charge for exceptional circumstances, such as misadventure or illness. There are also provisions for Special Consideration – see later in PART B “Special Consideration”. Applications should be made to the lecturer-in-charge by email or in person. You will be required to substantiate your application with appropriate documentary evidence such as medical certificates, accident reports etc. Please note that work commitments and computer failures are usually considered insufficient grounds for an extension.
- **Partial submissions of your assignments will not be accepted.**

**Quality Assurance**

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential.
5  COURSE RESOURCES
The website for this course is on Moodle at:
http://moodle.telt.unsw.edu.au

The textbook for this course are:

Cengage Learning, Independence, KY, USA.
(for the lectures)

Casteel (2010). *Oracle 11g SQL* (2e, or newer).
Cengage Learning, Independence, KY, USA.
(for the tutorials)

Both books are relevant for the course. Coronel supports the lectures; Casteel supports
the tutorials. Students typically find older editions of the book sufficient for the course.
Additional course materials may be provided in class and on Moodle.

6  COURSE EVALUATION AND DEVELOPMENT
Each year 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 is one of
the ways in which student evaluative feedback is gathered. In this course, we will seek
your feedback through end of semester CATEI evaluations and through direct feedback
from students to the LIC in class.
## COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Tutorial Topic</th>
<th>References</th>
<th>Other Activities/Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 27 Jul</td>
<td>Introduction</td>
<td>NO TUTORIALS</td>
<td>Coronel: Ch. 1 and 2</td>
<td>Course admin; Ass. A + B released.</td>
</tr>
<tr>
<td>Week 2 3 Aug</td>
<td>ER Modelling 1</td>
<td>Basic SQL statements</td>
<td>Coronel: Ch. 3 and 4; Casteel: Ch. 2</td>
<td>Group setup.</td>
</tr>
<tr>
<td>Week 3 10 Aug</td>
<td>ER Modelling 2</td>
<td>Restricting rows and sorting data</td>
<td>Coronel: Ch. 4 and 5; Casteel: Ch. 8, Introduction to Visio</td>
<td>-</td>
</tr>
<tr>
<td>Week 4 17 Aug</td>
<td>Relational Modelling</td>
<td>Selected single-row function</td>
<td>Coronel: Ch. 3; Casteel: Ch. 10</td>
<td>-</td>
</tr>
<tr>
<td>Week 5 24 Aug</td>
<td>Normalization 1</td>
<td>Joining data from multiple tables</td>
<td>Coronel: Ch. 6; Casteel: Ch. 9</td>
<td>Assignment A Due</td>
</tr>
<tr>
<td>Week 6 31 Aug</td>
<td>Normalization 2</td>
<td>Group functions</td>
<td>Coronel: Ch. 6; Casteel: Ch. 11</td>
<td>-</td>
</tr>
<tr>
<td>Week 7 7 Sep</td>
<td>Quiz A (ER Modelling and Normalization)</td>
<td>Table creation and management, constraints</td>
<td>Casteel: Ch. 3, 4</td>
<td>-</td>
</tr>
<tr>
<td>Week 8 14 Sep</td>
<td>SQL</td>
<td>Data manipulation and transaction control</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Week 9 21 Sep</td>
<td>OO Modelling 1</td>
<td>Sub queries and merge statements</td>
<td>Coronel: Ch. 2 and additional materials; Casteel: Ch. 12</td>
<td>-</td>
</tr>
</tbody>
</table>

Mid-semester break: Saturday 26 September - Monday 5 October inclusive

| Week 10 5 Oct | OO Modelling 2 | Views | Coronel: Ch. 2 and additional materials; Casteel: Ch. 13 | - |
| Week 11 12 Oct | Database Development in Context | Quiz B (SQL) | Coronel: Ch. 9 and 15 | Assignment B Due |
| Week 12 19 Oct | Review and Exam Preparation | Group Presentations | - | - |
| Week 13 26 Oct | NO LECTURES | Group Presentations | - | - |