

# **INFS1603**

## **Introduction to Business Databases**

### **Course Outline**

### **Semester 2, 2017**

### **Course-Specific Information**

The Business School expects that you are familiar with the contents of this course outline. You must also be familiar with the Course Outlines Policies webpage which contains key information on:

- Program Learning Goals and Outcomes
- Academic Integrity and Plagiarism
- Student Responsibilities and Conduct
- Special Consideration
- Student Support and Resources

This webpage can be found on the Business School website:

<https://www.business.unsw.edu.au/degrees-courses/course-outlines/policies>

# Table of Contents

<u>COURSE-SPECIFIC INFORMATION</u>	<u>1</u>
<u>1 STAFF CONTACT DETAILS</u>	<u>1</u>
<u>2 COURSE DETAILS</u>	<u>1</u>
2.1 Teaching Times and Locations	1
2.2 Units of Credit	1
2.3 Summary of Course	1
2.4 Course Aims and Relationship to Other Courses	2
2.5 Student Learning Outcomes	2
<u>3 LEARNING AND TEACHING ACTIVITIES</u>	<u>3</u>
3.1 Approach to Learning and Teaching in the Course	3
3.2 Learning Activities and Teaching Strategies	4
<u>4 ASSESSMENT</u>	<u>4</u>
4.1 Formal Requirements	4
4.2 Assessment Details	5
4.3 Assessment Format	6
4.4 Assignment Submission Procedure	6
4.5 Special Consideration, Late Submission and Penalties	7
4.6 Protocol for viewing final exam scripts	7
<u>5 COURSE RESOURCES</u>	<u>8</u>
<u>6 COURSE EVALUATION AND DEVELOPMENT</u>	<u>8</u>
<u>7 COURSE SCHEDULE (PRELIMINARY)</u>	<u>9</u>



## COURSE-SPECIFIC INFORMATION

### 1 STAFF CONTACT DETAILS

Position	Name	Email	Room	Phone
Lecturer in Charge (LIC)	Dr Daniel Schlagwein	<a href="mailto:schlagwein@unsw.edu.au">schlagwein@unsw.edu.au</a>	Q2114	9385 6487
Lab Tutor	Wilson Hua	<a href="mailto:wilson.hua@unsw.edu.au">wilson.hua@unsw.edu.au</a>	–	–
Lab Tutor	Rena Zhou	<a href="mailto:rena.zhou@unsw.edu.au">rena.zhou@unsw.edu.au</a>	–	–
PASS Leader	TBC	–	–	–

Consultation times: TBA

If you need to contact the school urgently, ring 9385-5320 or email [istm@unsw.edu.au](mailto:istm@unsw.edu.au). For messages to the LIC or the school, please use your UNSW email address (do not use external email addresses, Moodle messaging or emails). Start email subjects with the course code, INFS1603, and sign the email with your full name and student number. Emails not meeting these conditions may not be answered.

### 2 COURSE DETAILS

#### 2.1 Teaching Times and Locations

The lectures start in week 1 (to week 12). The labs start in week 2 (to week 13). The PASS classes (TBC) start in week 3 (to week 13). The timetable may change.

Element	Day and Time	Location
Lecture A 3112	Fri 2 – 4 pm	CLB 8
LAB M15A 3118 (Rena)	Mon 3 – 4 pm	Mathews 211
LAB M16A 3117 (Wilson)	Mon 4 – 5 pm	Quadrangle Lab 1
LAB M18A 3119 (Wilson)	Mon 6 – 7pm	Quadrangle Lab 1
LAB F09A 3113 (Rena)	Fri 9 – 10 am	Quadrangle G021
LAB F10A 3114 (Daniel)	Fri 10 – 11 am	Quadrangle G021
LAB F11A 3115 (Daniel)	Fri 11 am – 12 pm	Quadrangle G021
PASS Classes	TBC	TBC

#### 2.2 Units of Credit

The course is worth 6 units of credit.

#### 2.3 Summary of Course

This is a foundational (Level 1) Information Systems (IS) course that introduces students to the concepts, techniques, and technologies relevant for creating and managing business databases. It will explain the major components of IS, which are critical to capturing, transmitting, storing, retrieving, manipulating and displaying information used

in business processes. Through this course, students will be exposed to the fundamental knowledge of business databases, which are foundational for many advanced courses. Students will be given tasks and assignments to help them acquire the ability to create and manage business databases.

In particular, topics include introduction to techniques and technologies for the storage and management of data, fundamentals of relational modelling and SQL, object-oriented modelling, the database development lifecycle and the role of the Database Administrator (DBA). The course includes a substantial laboratory component using an industrial-strength Database Management System (DBMS).

## **2.4 Course Aims and Relationship to Other Courses**

The course 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 their interpersonal communication, project management and quality assurance skills.

The course does not have any prerequisite courses.

## **2.5 Student Learning Outcomes**

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.

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

1. Discuss the relation between database and IS development processes.
2. Apply conceptual database modelling methods (e.g., ER modelling).
3. Apply normalisation techniques to database schema.
4. Create small-size database system (e.g., in Oracle).
5. Apply queries languages to access and update databases.
6. Prepare and present technical reports.
7. Carry out professional team work.
8. Discuss professional responsibilities and ethical issues regarding databases.

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 Program Learning Goals and Outcomes, see the School's Course Outlines Policies webpage available at <https://www.business.unsw.edu.au/degrees-courses/course-outlines/policies>.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed (they may also be developed in tutorials and other activities):

Program Learning Goals and Outcomes		Course Learning Outcomes	Course Assessment Item
<i>This course helps you to achieve the following learning goals for all Business undergraduate students:</i>		<i>On successful completion of the course, you should be able to:</i>	<i>This learning outcome will be assessed in the following items:</i>
1	Knowledge	Discuss the relation between database and IS development processes.  Discuss professional responsibilities and ethical issues regarding databases	<ul style="list-style-type: none"> <li>▪ Quiz A+B</li> <li>▪ Exam</li> </ul>
2	Critical thinking and problem solving	Apply conceptual database modelling methods (e.g., ER modelling).  Apply normalisation techniques to database schema.  Create small-size database system (e.g., in Oracle).  Apply queries languages to access and update databases.	<ul style="list-style-type: none"> <li>▪ Assign. A+B</li> <li>▪ Exam</li> <li>▪ Lab exercises</li> </ul>
3a	Written communication	Prepare and present technical reports	<ul style="list-style-type: none"> <li>▪ Assign. A+B</li> </ul>
3b	Oral communication	Prepare and present technical reports	<ul style="list-style-type: none"> <li>▪ Assign. B</li> </ul>
4	Teamwork	Carry out professional team work.	<ul style="list-style-type: none"> <li>▪ Assign. A+B</li> </ul>
5a	Ethical, social and environmental responsibility	Discuss professional responsibilities and ethical issues regarding databases.	<ul style="list-style-type: none"> <li>▪ Exam</li> </ul>
5b	Social and cultural awareness	(Not a focus of this course)	

### 3 LEARNING AND TEACHING ACTIVITIES

#### 3.1 Approach to Learning and Teaching in the Course

The lecture and the lab provide students with a chance to learn fundamental database knowledge and skills. There will be several course activities to foster critical thinking, develop problem-solving skills and prepare students to work effectively with databases. We provide practical assistance through hands-on exercises in the labs. However, students need to take the initiative to self-learn the practical components throughout the course. Lectures, labs, and the textbook can only provide the context, structure and resources for their learning. Students' practical engagements with the material in self-study or peer groups are the crucial elements of their learning. The major assignment is

a project concerning the design and development of a business database, which students will solve in a group. In this course, students will learn to use Chen's Entity Relationship (ER) notation and the Oracle SQL query language.

### 3.2 Learning Activities and Teaching Strategies

At university, the focus is on self-study and self-directed search for knowledge. Lectures, labs, textbooks, exams and other resources are provided to structure students' self-learning. Students are expected to attend all lectures, complete all lab exercises, and read all required readings so to fully grasp and appreciate the concepts of business databases.

**Self-Study:** Students need to take the initiative to self-learn the relevant contents throughout the course. Learning is not achieved through attending formal lectures and labs but is nearly exclusively achieved through self-initiated learning. Formal lectures, labs, and the textbook can only provide the context, structure, and resources for this learning. The practical engagements with the material in self-study or in group work and informal communications with peers are the crucial elements of the learning. Students need to revise lectures; complete assignments and study for exams. Students are responsible for their learning style and goals and to make a concerted and timely effort to study for this course.

**Lecture:** Each lecture will provide an overview of the topic at hand and will focus on explaining topics, concepts, and issues. The role of the lecture is to help students understand the context of the topic as well as walk them through difficult points. There will be continuous opportunities to ask questions and actively participate in the lectures. In this course, the lecture focuses on conceptual knowledge regarding the creation of relational databases. The lecture notes also include exercises that students can solve in class or at home.

**Lab:** The labs provide practical assistance through hands-on work on databases. The labs focus on using and managing database using an industry standard DBMS such as Oracle (or equivalent). There will be hand-out material supporting the lab. The database design assignment of this course is closely linked to the lab and includes an oral presentation in the lab. The lab tutors are responsible for all lab sessions and technical questions regarding the database design project. Students should always refer to their lab tutor first with problems regarding the lab or the database design project. For this course and assignment, students need to use Chen's Entity Relationship (ER) notation and the Oracle SQL query language.

## 4 ASSESSMENT

### 4.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50;
- make a satisfactory attempt at all assessment tasks (see below);
- attend at least 80% of all classes;
- 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

Assessment Task	Weight	Length	Submission/Due Date
Lab Exercises	5%	–	Weekly in lab
Assignment (Project)	10% – Part A, written report	Max. 6000 words (~12 pages)	PDF submission via Moodle, Fri of week 5 (see assignment document)
	10% – Part B, written report	Max. 8000 words (~16 pages) + digital component	PDF submission via Moodle, Fri of week 11 (see assignment document)
	5% – oral presentation	15 min	In week 12/13 labs
Quiz	5% – Quiz A (ERM)	45 min	In week 7 lecture
	5% – Quiz B (SQL)	45 min	In week 11 lab
Final Exam	60%	2 hours	Exam period
Total	100%		

### Assessment Component: Lab Exercises (5%)

You need to complete the weekly lab exercises at home and show your solutions to your lab 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 labs (as a complement to the textbook). Note that late submissions are not accepted and there is no special consideration for this assessment component.

### Assessment Component: Assignment A + B (Project) (25%)

You need to solve the assignment (which is in two parts, A + B) in a group of 5 (4 or 6 to fill) students. 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.

The groups will be set up in the labs and Moodle, the process will be explained in class. Please note that each student is responsible for finding and enrolling in a group, teaching staff will not “allocate” students to groups. Failure to enrol in a group will lead to the student having to complete the full group assignment alone.

Peer review is used in this assignment. Peer review increases responsibility, autonomy, and advances deeper understanding. Each project group will be assigned to evaluate other projects. Based on the deliverables, project groups are required to provide



comments and recommend ratings. The peer review process is anonymous. The teaching team will evaluate the peer reviews and the deliverables and finalize marks.

The assignment requirements document will be available on the course website. Between- and within-group peer review is used for this assignment. The LIC will provide further advice on the assignment in the lecture.

#### **Assessment Component: Quiz A + B (10%)**

You need to participate in a two-part quiz 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 A and B only in the class that you are enrolled in. Please bring a pencil and an eraser to class. Quiz A and B are paper-based and marked automatically/electronically. Quiz A and B are in-class components. There is no late submission and there are no alternative dates for quiz A and B.

#### **Assessment Component: Final Exam (60%)**

You need to participate in the final exam in the examination period. This is a formal, closed book examination of your knowledge and skills. All material covered in lectures, labs, assignments and readings are examinable. You will be asked to both discuss and apply the concepts explained in those sources. Your ability to clearly, coherently and concisely present your answers will be part of the evaluation. You must plan on being available for the full examination period to attend the final exam. In addition, you should also ensure that you would be available for a supplementary examination in the event of illness or misadventure (follow the university guidelines for special consideration available online, see also below). The LIC will provide further advice on the exam in the lecture.

### **4.3 Assessment Format**

Assignments need to be submitted in the standard UNSW format. Especially, the assignment needs to include a signed standard UNSW assignment cover sheet. The signatures need to be authentically signed (not typed) on the cover sheet. A missing cover sheet or a cover sheet not authentically signed will result in a penalty of 10% (of the maximum marks available for assignments). No marks will be released until the signed cover sheet has been received. Assignments need to be submitted in PDF format. Use of another file format will result in a penalty of 10%. If time assignment includes digital/coding components, then such components are to be included in the form of a single ZIP file in the same submission. Use of another file format will result in a penalty of 10%. Assignments may be screened with plagiarism-detecting software. The submission of non-original materials will be considered plagiarism and will be pursued. Further details on the format for each assignment are provided with the respective assignments requirements document.

### **4.4 Assignment Submission Procedure**

Assignments are to be submitted via Moodle on or before the day of the deadline. Late submissions of assignments are to be avoided, disrupt the course timelines and are a sign of poor time management. The late submission of assignments carries a penalty of 10% of the awarded marks for that assignment per day of lateness, including weekends and public holidays. For example, a 70 marking would be reduced by 7 marks per day of

lateness. Assignments submitted late will miss marked components that are in their nature dependent on timely submission, especially peer review. An extension of time to complete an assignment may be granted by the LIC in the case of illness or misadventure. Applications for an extension need to be made to and approved by the LIC by email or in person three days before the due date. Students need to send appropriate evidence such as medical certificates, accident reports etc. with their application. Please note that workload, work commitments, computer failures and technical issues in the submission process are not sufficient grounds for an extension. For group assignments: groups are expected to plan ahead and to be able to balance out a missing member without an extension. An extension is unlikely to be granted for groups.

#### **4.5 Special Consideration, Late Submission and Penalties**

For information on Special Consideration please refer to the Business School's [Course Outlines Policies webpage](#).

All applications for special consideration (for major assignments or the final exam, there is no special consideration for minor in-class assessment tasks) must be made following the UNSW Student Guide:

<https://student.unsw.edu.au/special-consideration>.

#### **4.6 Protocol for viewing final exam scripts**

The School of Information Systems and Technology Management (ISTM) has set a protocol under which students may view their final exam script. ISTM exam script viewing day is usually a day after the official release of results. Details will be posted on both the school website and on your course Moodle.

##### **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

**Coronel, Morris, Rob (2017) Database Systems [12e]  
Cengage Learning, Independence, KY, USA.  
(ISBN-13: 9781305627482)  
(for the lectures)**

**Casteel – Oracle 11g SQL. [or Casteel – Oracle 12c SQL]  
Cengage Learning, Independence, KY, USA.  
(ISBN-13: 978-1305268029)  
(for the labs)**

Both books are relevant for the course. Coronel et al. supports the lecture; Casteel supports the lab. The latest edition is recommended. However, students typically find older editions of the books sufficient for the course. Additional course materials may be provided in class and on the course website on UNSW Moodle:  
<http://moodle.telt.unsw.edu.au>

## 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 myExperience survey is one of the ways in which student evaluative feedback is gathered. In this course, we will seek your feedback myExperience responses and through direct feedback from students to the LIC in class.

## 7 COURSE SCHEDULE (PRELIMINARY)

Lecture Schedule: INFS1603 Introduction to Business Databases (2017-S2)					
Lecture: <b>Fri 2 – 4 pm, CLB 8</b>					
Week	Lecture Topic	Reading Coronel	Lab Topic	Reading Casteel	Comment
Week 1 24 July	Introduction	Ch. 1, 2	NO LABS	–	Course admin; Ass. A + B released
Week 2 31 July	ER Modelling 1	Ch. 3, 4	Basic SQL Statements	Ch. 2	Group setup
Week 3 7 August	ER Modelling 2	Ch. 4, 5	Restricting Rows and Sorting Data	Ch. 8	Additional advice ass. A
Week 4 14 August	Relational Modelling	Ch. 3	Selected Single- Row Function	Ch. 10	–
Week 5 21 August	Normalization 1	Ch. 6	Joining Data from Multiple Tables	Ch. 9	<b>Ass. A due</b>
Week 6 28 August	Normalization 2	Ch. 6	Group Functions	Ch. 11	<b>Peer review ass. A due</b> Additional advice ass. B
Week 7 4 September	<b>Quiz A (ER Modelling and Normalization)</b>	–	Table Creation and Management, Constraints	Ch. 3, 4	
Week 8 11 September	SQL	–	Data Manipulation and Transaction Control	–	
Mid-semester break: 23 September – 2 October inclusive (2 Oct = Labour Day Public Holiday)					
Week 9 18 September	OO Modelling 1	Ch. 2 + readings	Sub Queries and Merge Statements	Ch. 12	–
Week 10 3 October	OO Modelling 2	Ch. 2 + readings	Views	Ch. 13	–
Week 11 9 October	Database Development in Context	Ch. 9, 15	<b>Quiz B (SQL)</b>	–	<b>Ass. B due</b>
Week 12 16 October	Review, Exam Preparation	–	<b>Group Presentations</b>	–	<b>Peer review ass. B</b> additional exam advice
Week 13 23 October	NO LECTURES	–	<b>Group Presentations</b>	–	Exam consultation
<b>Exam period: 3 – 20 November</b>					