



# ISYS114

## Introduction to Database Design and Management

S2 Day 2018

*Dept of Computing*

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# General Information

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

This unit introduces students to the principles and concepts of data storage, management and modelling, including the role of data and information in organisations. The unit will cover conceptual modelling techniques, converting conceptual data models into relational data models and verifying its structural characteristics with normalisation techniques, and implementing and utilising a relational database using a database-management system. Fundamental data modelling tools, techniques and query languages such as Structured Query Language (SQL) will be used. Ethical and green approaches to the collection, backup, use and storage of data and the construction of systems are emphasised. An introduction to the concepts and issues relating to data warehousing, governance, administration, security and privacy and alternative database structures such as distributed and object oriented databases will be provided. The unit concentrates upon building a firm foundation in information representation, organisation and storage with particular emphasis upon the application of database systems.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

Explain the role and nature of ethics and sustainability in the IT environment related to databases

## General Assessment Information

### ASSESSMENT PROCEDURE

A more detailed description of each task is given below.

### Workshop Participation

Workshops are combined practicals and tutorials. Each week, you will receive a maximum of one mark for attendance & active participation. There are 13 weeks of workshops, however, the total participation mark is limited to 8 throughout the semester. In week 11 workshop, you will have your in-class test. So, week-11 is excluded from assessed participation. All other workshops are assessed.

Participation in workshops in this unit is a hurdle requirement. In order to pass the unit you will be required to participate in **8 out of the 12 weeks**.

### Assignments

There are 3 assignments.

1. The first assignment requires you to apply and develop your understanding of data modelling concepts and submit a professionally presented document demonstrating the use of data modelling skills. The document must be prepared using a standard word processor such as Word and diagrams should be created using a modelling tool/ website.
2. The second assignment assesses your ability to design a database and provide interactive queries.
3. The third assignment requires you to research a given database-related topic and present your findings in a report.

You are encouraged to:

- set your personal deadline earlier than the actual one;
- keep backups of all your important files;
- make sure that no-one else picks up your printouts.

If you cannot submit on time because of illness or other circumstances, please contact the lecturer **before** the due date.

No extensions will be granted unless there is a special consideration approved. Late assignments will be accepted up to 72 hours after the submission deadline. There will be a deduction of 20%\* of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission –

40% penalty). This penalty does not apply for cases in which an application for disruption to studies is made and approved.

Assignment submission in this unit is NOT a hurdle requirement. However, if you do not make a reasonable attempt at all three assignments, you are unlikely to have sufficient knowledge to pass the exam or sufficient total marks to be able to pass the unit.

## Final Examination

For this unit, a final examination will test your learning and knowledge of learning outcomes #1, #2, #3 and #4. The final examination accounts for 40% of the final mark. If you receive [special consideration](#) for the final exam, a supplementary exam will be scheduled in the week of December 17-21 2018. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Regarding the examination process, note that

- you must attend all required classes and submit all required assessment, otherwise the Executive Dean of the Faculty or delegated authority has the power to refuse permission to attend the final examination.
- the University Examination period in for Second Half Year is mid November to mid December.
- you are expected to present yourself for examination at the time and place designated in the [University Examination Timetable](#).
- the timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of examinations.
- no early examinations for individuals or groups of students will be set. All students are expected to ensure that they are available until the end of the teaching semester, that is the final day of the official examination period.
- the only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to lodge an application for special consideration.

## [Standards](#)

Four standards, namely Developing, Functional, Proficient, and Advanced, summarize as many different levels of achievement. Each standard is precisely defined to help students know what kind of performance is expected to deserve a certain grade. Typically, Developing corresponds PC, Functional is for P, Proficient for Cr, and Advanced covers D and HD. The standards

corresponding to the learning outcomes and criteria of this unit are given below:

	Standards			
Criteria for L.O. #1	Developing	Functional	Proficient	Advanced
Data Analysis and Modeling	Has limited understanding and ability to apply analysis, modeling and programming concepts and techniques. Assignment and exam performance shows functional level of understanding on some but not all assessment tasks.	Demonstrates knowledge of terms and core concepts. Assignment and exam performance shows basic understanding and ability to apply most of the data modeling and implementation concepts and techniques.	Understands most of the data modelling concepts and can apply them appropriately. Implements most of the tasks specified. Assignment and exam performance shows good understanding of data analysis and modeling concepts and application of these skills in conceptual database design.	Shows depth of understanding of data analysis and modeling concepts and implements all tasks as specified with professional presentation. Assignment and exam performance shows critical thought and comprehension of the software development big picture and related issues and activities.
Criteria for L.O. #2				
Data Base	Inaccurate reproduction of definitions and ideas, show limited understanding of database principles. Able to apply some of the basic database functionality in the assignments and final exam.	Reproduce definitions and ideas, show some breath of understanding of Database principles. Able to apply most of the basic database functionality in the assignments and final exam.	Show breath of understanding of database principles. Able to apply most of database functionality in the assignments and final exam.	Apply terminology and ideas in some new contexts, show some depth of understanding of database principles. Able to apply most of database functionality in the assignments and final exam.
Criteria for L.O. #3				
Ethics	Assessment performance shows limited understanding of what ethics is.	Assessment performance shows an understanding of what ethics involves relating to sustainability and the environment.	Assessment performance shows an appreciation of the impact of ethics on professional practice as well as ethical decision making relating to sustainability and the environment.	Assessment performance shows a deep appreciation of the impact of ethics on professional practice as well as ethical decision making relating to sustainability and the environment.
Criteria for L.O. #4				

Use of modeling tools	Assignment and exam performance shows limited understanding of data analysis and data modelling techniques and tools for introductory level database design and requirements specification.	Assignment and exam performance shows basic understanding and ability to use data analysis and modeling tools.	Assignment and exam performance shows good understanding of data analysis and modeling tools in conceptual database design.	Assignment and exam performance shows depth of understanding of data analysis and modeling tools.
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## Grading

In order to pass the unit, you must **obtain a total mark of 50%** or higher in the unit and **obtain 8/12 in the participation** component. The final mark will be the summation of the marks you have received for assessments including the final exam.

For each task, those standards translate into a mark and the different component marks are added up. The final mark for the unit will be calculated by combining the marks for all assessment tasks according to the percentage weightings shown in the assessment summary. You will then be given a grade that reflects your achievement in the unit.

- **Fail (F):** does not provide evidence of attainment of all learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; and incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.
- **Pass (P):** provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; and communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.
- **Credit (Cr):** provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; plus communication of ideas fluently and clearly in terms of the conventions of the discipline.
- **Distinction (D):** provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.
- **High Distinction (HD):** provides consistent evidence of deep and critical understanding



in relation to the learning outcomes. There is substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Workshop Participation</a>	8%	Yes	All weeks except Week 11
<a href="#">Assignment One</a>	22%	No	Week7 14/09/2018 Friday 5:00PM
<a href="#">Assignment Two</a>	20%	No	Week10(online)&Week11(inClass)
<a href="#">Assignment Three</a>	10%	No	Week13 09/11/2018 Friday5:00PM
<a href="#">Final Exam</a>	40%	No	See Exam Timetable

### Workshop Participation

Due: **All weeks except Week 11**

Weighting: **8%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

In accordance with the Faculty Board they have decided that, from S1 2018, all 100-level units in the Faculty will have a compulsory (hurdle) requirement on participation in tutorials, practicals and laboratories.

You will have workshops every week starting from week 1 until week 13. In-class voluntary participation will be assessed for 12 workshops (except week 11) during the session. The best 8 out of 12 in-class participation marks will be taken into consideration. In-class participation will be worth 8% of the the total mark.

**NB. This is a hurdle assessment, in order to pass the unit you will be required to participate in 8 out of the 12 weeks. If you receive any formal special consideration, you will be given an alternate task for that week. Please refer to <https://students.mq.edu.au/study/my-study-program/special-consideration>**

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level

database design and specification

- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## Assignment One

Due: **Week7 14/09/2018 Friday 5:00PM**

Weighting: **22%**

This assignment will involve both top down and bottom up approach in database modelling. You will be assessed based on the development of a conceptual (ER and EER), logical data model and normalised tables, for a given problem description.

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## Assignment Two

Due: **Week10(online)&Week11(inClass)**

Weighting: **20%**

This assignment involves the design and execution of database queries to demonstrate knowledge of SQL. This assignment will be assessed in two components. Each component is worth 10%.

### 1. Online component:

Online component is due on **19/10/2018, Friday 5pm**. Submission will be through iLearn.

### 2. In-class assessment:

In-class assessment will be conducted in week 11 in the workshops you've enrolled.

On successful completion you will be able to:

- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.

## Assignment Three

Due: **Week13 09/11/2018 Friday5:00PM**

Weighting: **10%**

This assessment involves writing a 750 word report providing solutions to questions provided where you will have to demonstrate understanding to DB issues.

On successful completion you will be able to:

- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## Final Exam

Due: **See Exam Timetable**

Weighting: **40%**

This closed book exam will test your knowledge of the concepts and ability to apply the learning material for Weeks 1-12.

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification
- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## Delivery and Resources

ISYS114 is taught via lectures and workshops. The feedback that you receive also plays an important role in your learning. Make sure you read the feedback you are given, attend lectures which provide assignment feedback and compare your solution with sample solutions provided.

Lectures are used to introduce new material, provide motivation and context for your study, guide you in what is important to learn and explain more difficult concepts.

Workshops are small group classes which give you the opportunity to interact with your peers and with a tutor who has a sound knowledge of the subject. This also gives you a chance to practice your technology skills.

You have many opportunities to seek for and to receive feedback. During lectures, you are encouraged to ask the lecturer questions to clarify anything you might not be sure of. You may also arrange to meet with your tutor or the lecturer or attend the consultation hours of any tutor. Each week, you will be given activities and problems to solve in workshops. This will at times involve contributing to a group of students and presenting solutions to the class. The final assignment involves working in pairs and giving a presentation in your tutorial class. The comments and the solutions provided will help you to understand the material in the unit, prepare you for the work in assignments as well as for the final exam. It is important that you keep up with these problems every week. Assignments have been especially designed to deliver continuous feedback on your work.

Each week you should:

- Attend lectures, take notes, ask questions
- Attend your workshops and seek feedback from your tutor on your work
- Read assigned reading material (ideally before the lecture), add to your notes and prepare questions for your lecturer or tutor
- Start working on any assignments immediately after they have been released.

Lecture notes are made available each week but these notes are intended as an outline of the lecture only and are not a substitute for your own notes or reading of the textbook or other additional material.

## Classes

## Lectures

There are 2 hours of lectures per week.

1. Day Lectures: Friday 9-11am in 21 Wally's Walk-Macquarie Theatre,
2. Evening Lectures: Wednesday 6-8 pm in 14 Sir Christopher Ondaatje Ave - Mason Theatre.

Each week you should attend two hours of lectures (or watch the recorded lecture), and a 2 hour Workshop. For details of days, times and rooms consult the [timetables webpage](#).

**Note that workshops commence in week 1.**

## Resources to assist your learning

### iLecture

Digital recordings of lectures are available through the web page of the unit on ilearn.

### Textbook

The textbook for ISYS114 this semester is:

Modern Database Management,

- Author(s): Jeffrey A. Hoffer; Ramesh Venkataraman; Heikki Topi
- Publisher: Pearson
- Copyright year: © 2016
- Edition: 12th
- Print ISBN: 9781292101859

<https://www.vitalsource.com/referral?term=9781292101859>

### Technology

MS Word, PowerDesigner, MySQL Workbench

## Websites

The web page for this unit can be found at <http://ilearn.mq.edu.au/course/view.php?id=32399>

## Discussion Boards

The unit makes use of discussion boards hosted within iLearn. Please post questions of general interest there (for example, about assessment tasks), they are monitored by the unit staff but students may also provide answers.

## Unit Schedule

In the table below, for each week, the lecturer, the topics to be covered and the textbook references are given.

Week	Lecturer	Topic	Reading/Chapter
1	Ramakrishnan	Introduction to unit and databases	Hoffer 1
2	Ramakrishnan	Conceptual Data Modelling	Hoffer 2-3
3	Ramakrishnan	Conceptual Data Modelling	Hoffer 2-3
4	Ramakrishnan	Normalisation	Online resources
5	Ramakrishnan	Logical and Physical Modelling Introduction to SQL	Hoffer 4-5 & online resources
6	Hanna	SQL concepts	Online resources
7	Hanna	SQL concepts	Online resources
8	Hanna	SQL concepts	Online resources
9	Hanna	SQL concepts	Online resources
10	Hanna	Database Application Development and Data Warehousing	Hoffer 8-9
11	Ramakrishnan	Data Quality and Integration Data and Database Administration	Hoffer 10,12-13 & online resources
12	Ramakrishnan	Big Data and Analytics GreenIT	Hoffer 11 & online materials
13	Ramakrishnan & Hanna	Revision, Exam Preparation	

## Learning and Teaching Activities

### Lectures

Lectures from staff in the class

### Workshops

Workshops supervised by tutors to provide personalised feedback and an interactive learning environment

### Assignment submission

Submission of assignments related to specific tasks

### Final Examination

Assessment of individual learning

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of

Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit <ask.mq.edu.au>.

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills (<mq.edu.au/learningskills>) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at <ask.mq.edu.au>

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

## Learning outcome

- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## Assessment tasks

- Assignment One
- Final Exam

## Learning and teaching activities

- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment

## Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

## Learning outcome

- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## Assessment tasks

- Assignment Three
- Final Exam

## Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## Learning outcome

- Explain the role and nature of ethics and sustainability in the IT environment related to databases



## Assessment tasks

- Assignment Three
- Final Exam

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## Learning outcomes

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## Assessment tasks

- Workshop Participation
- Assignment One
- Assignment Two
- Final Exam

## Learning and teaching activities

- Lectures from staff in the class
- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Submission of assignments related to specific tasks
- Assessment of individual learning

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to

have a level of scientific and information technology literacy.

This graduate capability is supported by:

## **Learning outcomes**

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## **Assessment tasks**

- Workshop Participation
- Assignment One
- Assignment Two
- Final Exam

## **Learning and teaching activities**

- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Submission of assignments related to specific tasks
- Assessment of individual learning

## **Problem Solving and Research Capability**

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## **Learning outcomes**

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## **Assessment tasks**

- Assignment One

- Assignment Two
- Assignment Three
- Final Exam

## **Learning and teaching activities**

- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Submission of assignments related to specific tasks

## **Effective Communication**

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

## **Learning outcomes**

- Analyse data requirements and design and develop conceptual database models.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification
- Explain the role and nature of ethics and sustainability in the IT environment related to databases

## **Assessment tasks**

- Workshop Participation
- Assignment One
- Assignment Three
- Final Exam

## **Learning and teaching activities**

- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Submission of assignments related to specific tasks

## **Engaged and Ethical Local and Global citizens**

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should

have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

### **Learning outcome**

- Explain the role and nature of ethics and sustainability in the IT environment related to databases

### **Assessment tasks**

- Assignment Three
- Final Exam

### **Learning and teaching activities**

- Lectures from staff in the class
- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Assessment of individual learning

## **Socially and Environmentally Active and Responsible**

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

### **Learning outcome**

- Explain the role and nature of ethics and sustainability in the IT environment related to databases

### **Assessment tasks**

- Assignment Three
- Final Exam

### **Learning and teaching activities**

- Lectures from staff in the class
- Workshops supervised by tutors to provide personalised feedback and an interactive learning environment
- Assessment of individual learning

## Changes from Previous Offering

- Final examination is not a hurdle task.
- Workshop participation is a hurdle task- Please see the passing requirements for the unit at the end of the Assessment Section under "Grading".
- Weight of most of the assessments, including the final exam have changed

## Changes since First Published

Date	Description
23/07/2018	Changes to special consideration policy ISBN change