



# WCOM1350

## Introduction to Database Design and Management

MUIC term 4, In person-scheduled-weekday, North Ryde 2022

*Macquarie University College*

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#### **Disclaimer**

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## General Information

|   |
|---|
| Unit convenor and teaching staff<br>TBC   |
| Credit points<br>10   |
| Prerequisites   |
| Corequisites  |
| Co-badged status  |
| Unit description<br>This unit introduces students to the principles and concepts of data storage, modelling and management with an emphasis on 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 their structural characteristics with normalisation techniques, and implementing and utilising a relational database using a database-management system. Fundamental data modelling tools, techniques such as ER Modelling and query languages such as Structured Query Language (SQL) will be used. Concepts relating to data warehousing, governance, administration, security and privacy, ethical and green approaches to the collection, backup, use and storage of data and the construction of systems are also discussed. Overall, this unit concentrates on building a firm foundation in information representation, organisation and storage with particular emphasis on 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:

**ULO1:** Analyse data requirements and design and develop conceptual database models.

**ULO2:** Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.

**ULO3:** Use data analysis and data modelling techniques and tools for introductory level database design and specification.

**ULO4:** Explain the role and nature of ethics and sustainability in the IT environment related to databases.

**ULO5:** Communicate disciplinary knowledge using appropriate academic discourses.

## General Assessment Information

### Requirements to Pass

To successfully complete this unit, a student must obtain a numerical overall mark of 50 or more for the unit.

For further details about grading, please refer to Part F of the [Assessment Procedure](#).

**Students must also pass any hurdle assessments as stipulated in the Assessment Section of this Unit Guide.**

### Grading

Students will be awarded common result grades as specified in the [Assessment Policy](#).

Students will receive criteria and standards for specific assessment tasks, which will be aligned with the grading descriptors given in [Part F](#) of the [Assessment Procedure](#).

**Note** – Other grades, such as I, IS, UD, UJ may be allocated and these grades are outlined in [Appendix A](#) of the [Assessment Policy](#).

### Where to find information about assessments

General assessment information, such as the number and nature of assessments, due dates and weightings, has been provided in this unit guide.

Specific assessment information including assignment instructions, questions, marking criteria and rubrics as well as examples of relevant and related assessment tasks and responses will be available in the Assessment section on iLearn.

### Submission of Assessment Tasks

Assessments must be submitted in accordance with instructions provided in this Unit Guide and via iLearn. Any tasks that are not submitted as per the assessment instructions may be considered a non-submission and a zero mark may be awarded for the task.

### Late Submissions and Penalties (applicable to non-time limited assessment tasks)

Late submissions are allowed but they will attract a late submission penalty unless the student has an approved special consideration application (see the [Special Consideration Policy](#)).

Late penalties are calculated based on the marks allocated to the specific assessment task. The penalty for late submission is as follows:

- 5% of the total possible marks will be deducted if it is late by up to 30 minutes
- 10% of the total possible marks will be deducted if it is more than 30 minutes late and up to 24 hours late

- A further 10% of the total possible marks will be deducted for each 24-hour period up to 3 days (including weekends)
- 100% of the marks will be deducted after 3 days and zero marks will be awarded

Please note that online submissions are time-stamped and this is used to determine late penalties which means that submitting an assessment even a few seconds after the deadline results in a late submission penalty as noted above. There is no flexibility regarding the application of the late submission penalties. **It is the students' responsibility to allow sufficient time for submission of their work and uploading any documents.**

Examples:

**If the assessment task is due on a Friday at 5.00 pm**

| Submission day/time                 | Deduction penalty |
|-------------------------------------|-------------------|
| Before/at 5pm Friday                | 0%                |
| After 5pm to 5.30pm Friday          | 5%                |
| After 5.30pm Fri to 5.00pm Saturday | 10%               |
| After 5.00pm Sat to 5.00pm Sunday   | 20%               |
| After 5.00pm Sun to 5.00pm Monday   | 30%               |
| After 5.00pm Monday                 | 100%              |

**If the assessment task is due on a Wednesday at 11.55 pm**

| Submission day/time                       | Deduction penalty |
|---|-------------------|
| Before/at 11.55pm Wednesday               | 0%                |
| After 11.55 pm to 12.25 am Thursday       | 5%                |
| After 12.25 am Thurs to 11.55 pm Thursday | 10%               |
| After 11.55 pm Thurs to 11.55 pm Friday   | 20%               |
| After 11.55pm Fri to 11.55pm Saturday     | 30%               |

After 11.55 pm Saturday

100%

Please see “In-class assessment” section for further information on assessments that take place during class time.

The above late submission penalties do not apply to time-limited assessment tasks. A time-limited assessment task must be submitted by its deadline. Any time-limited task that is not submitted as required will be considered a non-submission and a zero mark will be awarded for the task.

### **Extensions (applicable to non-time limited assessment tasks)**

Extensions are allowed only if the student is granted a special consideration. To apply for an extension, students must submit their application via [ask.mq.edu.au](https://ask.mq.edu.au).

An **approved** extension will not incur late penalties. However, where a student has been granted an extension and then submits late, i.e., after the stipulated new due date following extension, late penalties will be applied.

### **Resubmissions (applicable to non-time limited assessment tasks)**

It is students' responsibility to upload their assessments as per the instructions provided on iLearn. Following an initial submission, students may resubmit their work up to 3 days after the due date\* if, for example, they have submitted the incorrect document or forgotten to include information.

\*If you make a resubmission after the due date, your submission will be counted as late, and penalties will be applied.

### **Retention of Originals**

It is students' responsibility to retain a copy of any work submitted. Students may be required to produce these documents upon request.

Requests for original documentation will be sent to the student's Macquarie University email address. Students must retain all original documentation for a six (6) month period and must supply original documents to the University within ten (10) working days of such a request being made.

### **In-Class Assessments (time-limited assessments)**

Assessments could be administered during scheduled lessons and students may be asked to produce their Macquarie University Student ID Card or any other official photo ID if required. Students may not be allowed sit an in-class assessment task if they cannot produce a valid photo ID.

Students are expected to be in class for the whole duration of their scheduled lesson to take the assessment task. No additional time or adjustment will be made for late-arriving students or students not ready to submit an assessment at the start of the lesson. Any time-limited task that is not submitted as per assessment instructions will be considered a non-submission and a zero mark will be awarded for the task.

For example, if a one-hour test or quiz is due to take place in a 2-hour lesson, the test or quiz may start at any time in the first hour or at the start of the second hour, so students must be ready to take the test at the beginning of the lesson. No additional time will be given, or adjustment made for students who arrive late. While they may still be permitted to take the assessment, depending on the task, the student will only have the remaining time to complete the task.

## **Final Examinations**

The final examinations will be held during the Macquarie University College Final Examination period. Students must be available to sit final exams or submit assessments throughout this period.

### **Final Examination Timetable**

The University will publish the [Final Examination Timetable](#) before the commencement of the final examination period.

### **Final Examination Requirements**

Details of the structure and format of the final examination will be made available to students via iLearn prior to the start of the final examination period.

For additional information regarding examination requirements refer to the Assessment Policy, [Assessment Procedures](#), Section 3, Part E - Examinations.

### **Missed assessments and examinations**

For any missed assessment tasks, please refer to the [Special Consideration Policy](#).

### **Supplementary Tests and Examinations**

When a student is granted a supplementary test or examination, they will be advised of the time, date and location for the supplementary task.

**Supplementary interim assessments**, i.e., assessments held during the term, will be held throughout the Term and students who are to sit a supplementary exam will be informed of times and dates via ask.mq.edu.au.

**Supplementary final examination** period for formal, end-of-term examinations will be the fortnight following Week 7. Students who need to sit a supplementary final examination are required to be available to undertake examinations during the supplementary examination period.

No more than one (1) supplementary assessment will be offered to a student in each affected unit, so it is essential that students make themselves available for alternative assessment activities. Please refer to the [Special Consideration Policy](#) for further details.

Results for supplementary final examinations may not be available for up to two weeks following the supplementary examination.

Due to the timing and administration of the supplementary final exams, students in their final Term of study unit should note that formal completion of their studies at the College may not be

possible until supplementary results are released. Similarly, students who are enrolled in a unit which is a prerequisite to another unit should note that they may not be able to enrol in subsequent unit/courses/program of study on time.

### **Hurdle Assessments**

A hurdle assessment mandates a minimum level of academic performance as a condition of successful completion of a unit. A student who has obtained a numerical mark of at least 50 yet failed all available attempts of a hurdle, fails the unit and receives a FH grade.

### **Accessing your Results**

Students will be able to view their results for interim assessments via the Grades section in [iLearn](#).

Marks for all assessment tasks will be released to students once marking and all relevant checks are concluded.

Students will be able to view their overall result of a unit via [eStudent](#) when results are ratified.

### **Calculating your WAM**

Weighted Average Mark (WAM) will be the average of the actual marks students achieved in all units of their program/course and is a mark out of 100. WAM also incorporates ALL marks, including those from a fail grade. For more information, please refer to the [Understanding your WAM](#) page.

### **Obtaining Feedback**

Feedback is an important part of student development and opportunities for feedback are built into the curriculum at key points throughout the Term. Students who complete the homework and classwork assigned to them will receive constructive feedback from teaching staff about their academic progress and performance in assessment tasks or a unit of study. When relevant, other staff such as Senior Teachers, Program Managers and members of the Student Administration and Services Team will provide feedback and advice to students about their academic performance in a course/program of study. Feedback may be provided to individual students, a group of students or a whole class and it may be written or verbal in nature.

Some examples of feedback include:

- A teaching staff member reviewing a draft submission and giving a student advice on how to improve their work before making a final submission
- A teaching staff member telling a class that they need to improve their editing of grammar in their recently submitted assignment
- A teaching staff member discussing progress of an individual student before census date to allow the student to decide whether they should remain enrolled in the unit
- Online feedback via announcements or forums, an online marking rubric or various iLearn activities employed in a unit. Please note that feedback on written assessments is usually provided via Feedback Studio in iLearn

- Written marks and comments on a marking sheet or essay
- Recorded voice comment in iLearn provided in response to an essay submitted online
- A student receiving advice that they should consider withdrawing from a unit because they have missed too many classes / too much work to be able to catch up or for other reasons

It is a student's responsibility to:

- attend sessions, be present and actively engaged during times when feedback is provided in scheduled class times
- organise an alternative time with the teacher so that they can receive their feedback if absent from an in-class feedback session due to unavoidable circumstances
- ensure that they have received sufficient feedback prior to their next assessment task and/or final assessment in the unit
- act promptly on feedback provided, e.g., incorporate advice provided into their work and study habits)

Students who are unsure how or when feedback was or will be provided, or feel that feedback provided is not sufficient, should approach relevant teaching or administrative staff and request additional feedback in a timely manner during the Term and prior to any subsequent assessment task or the final assessment task. Claims that enough feedback was not provided are not grounds for a grade appeal, especially when a student did not make any effort to approach staff about obtaining additional feedback in a timely manner. Students may seek general feedback about performance in a unit up to 6 months following results release.

If a student has any problems contacting their teacher, they should seek help from a member of the Student Administration and Services team.

### Contacting Teaching Staff to Obtain Help

For all University-related correspondence, students must use their official Macquarie University student email account. Students may contact teaching staff at any time during the Term by using the teacher contact details provided in this Guide. Students should expect a response within 1-2 business days.

## Assessment Tasks

| Name  | Weighting | Hurdle | Due                      |
|---|-----------|--------|--------------------------|
| <a href="#">Database Modelling Assignment</a> | 20%       | No     | Week 3, Tuesday 11:55 PM |
| <a href="#">Database Modelling Quiz</a>       | 20%       | No     | Week 4, Lesson 2         |



| Name   | Weighting | Hurdle | Due   |
|--|-----------|--------|---|
| <a href="#">Database Implementation Assignment</a> | 15%       | No     | Week 5, Tuesday 11:55 PM                                |
| <a href="#">Database Implementation Quiz</a>       | 20%       | No     | Week 6, Lesson 4  |
| <a href="#">Database Topics Assessment</a>         | 25%       | No     | Week 5, Lesson 4; Week 6, Lesson 2 and Week 6, Lesson 4 |

## Database Modelling Assignment

Assessment Type <sup>1</sup>: Design Implementation

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Week 3, Tuesday 11:55 PM**

Weighting: **20%**

Students will be given a problem description on the principles of database modelling as a case study and they are required to go through database design levels. This is a take-home assignment.

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.
- Communicate disciplinary knowledge using appropriate academic discourses.

## Database Modelling Quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 4, Lesson 2**

Weighting: **20%**

Students will be given a problem description on the principles of database modelling as a case study and they are required to go through database design levels. This is an in-class quiz.

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.
- Communicate disciplinary knowledge using appropriate academic discourses.

## Database Implementation Assignment

Assessment Type <sup>1</sup>: Design Implementation

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 5, Tuesday 11:55 PM**

Weighting: **15%**

Students will be given a problem description on the principles of database implementation and running queries as a case study. They are required to use Structured Query Language (SQL) to create tables and run some queries. This is a take-home assignment

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.
- Communicate disciplinary knowledge using appropriate academic discourses.

## Database Implementation Quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Week 6, Lesson 4**

Weighting: **20%**

Students will be given a problem description on the principles of database implementation and running queries as a case study. They are required to use Structured Query Language (SQL) to create tables and run some queries. This is an in-class quiz.

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.

- Communicate disciplinary knowledge using appropriate academic discourses.

## Database Topics Assessment

Assessment Type <sup>1</sup>: Report

Indicative Time on Task <sup>2</sup>: 33 hours

Due: **Week 5, Lesson 4; Week 6, Lesson 2 and Week 6, Lesson 4**

Weighting: **25%**

Students are required to answer a few questions and complete activities provided to demonstrate their understanding of database advanced topics.

On successful completion you will be able to:

- 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.
- Communicate disciplinary knowledge using appropriate academic discourses.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### Term Dates & Calendar

Details of key dates during the term can be found on the [Important Dates](#) calendar.

### Enrolment and Timetables

General timetable information is available via Macquarie University's [Timetable page](#).

Students will be able to enrol and register for classes via [eStudent](#) and view their personal timetable. It is the student's responsibility to ensure that classes they have registered for do not clash.

Students are only permitted to attend classes in which they have registered via eStudent unless they have written approval. To seek approval, students must contact Macquarie University

College Student Services, or speak to a member of the Student Administration and Services Team at The College Student Desk (Ground floor, 8 Sir Christopher Ondaatje Avenue). Approval will only be granted in exceptional circumstances.

The last day to enrol, add or change units is the Sunday, 9.00 pm (AEST) before the start of the term. Changing groups is not possible after the enrolment period has concluded.

### **Attendance Requirements – All Students**

Attendance will be monitored in each lesson and students are able to see their current attendance percentage to date and potential attendance percentage for each unit they have enrolled in via [iLearn](#).

- **Current Attendance Percentage** will reflect the percentage of classes a student has attended so far (based only on the lessons held to date).
- **Potential Attendance Percentage** will reflect the percentage of classes a student can potentially attend by the end of the term, taking into consideration lessons attended and assuming the student also attends all future lessons scheduled (based only on the total number of lessons in the Term).

When a student is present for a part of a lesson (for example arrives late, leaves early, leaves the class frequently, particularly for lengthy periods), the teacher reserves the right to mark a student absent for that part of the lesson.

### **Public Holidays and Make-up Lessons**

If any scheduled class falls on a public holiday, a make-up lesson may be scheduled. Please check the iLearn announcements and your emails for details of the make-up lessons.

**In Term 4, there are no public holidays.**

### **Technology Used and Required**

- Access to internet
- [AppStream](#) is a fully managed application streaming service that provides MQ users both staff and students with instant access to their applications from anywhere enabling students to use Microsoft Windows applications they require to do their university work from anywhere, anytime, on any device (BYODs).
- Access to <https://ilearn.mq.edu.au/login/index.php> Macquarie University [Library catalogue \(MultiSearch\)](#); and
- Macquarie students can download Microsoft Office Suite software from MS Office portal. For instructions, please visit [IT Service Desk - Microsoft](#).

### **Using your Own Device**

Macquarie University students are entitled to free access to the Microsoft Office Suite, which can

be accessed [here](#). For any problems related to this link and Microsoft Office Suite please contact [OneHelp](#).

Students are required to use Windows or Mac devices to study. They will need to have access to Office applications (Word, Excel and PowerPoint) and [Internet browsers](#).

## **iLearn**

[iLearn](#) is Macquarie's online learning management system and a principal teaching and learning resource which will be used throughout the term.

For any resource-related iLearn questions contact your teacher. For any technical or support issues using iLearn, please contact the IT helpdesk (Ph. 02 9850 4357) or lodge a ticket using [OneHelp](#).

## **Useful Study Resources**

[StudyWise](#) is an iLearn resource created by the Academic Literacies Unit. This resource is specifically designed to help you to manage your studies, strengthen your study techniques, write effective assignments and improve your English language proficiency. Once you enrol in StudyWise, you can access it from your iLearn course list under the category "Student Support".

[Lib Guides](#) provide students with links to electronic sources and websites that are good starting points for research in different fields or disciplines.

[MultiSearch](#) will connect you to Macquarie University Library and allow you to search library resources, databases, unit readings and past exam papers.

Macquarie University Library has released a mobile device app called libMQ. The app allows students to easily access MyLibrary (be notified about loans, renewals, holds and fees owing), book a computer, Library floor maps, see new books lists and search MultiSearch.

It can be downloaded from either Google Play or the App Store.

[Assignment and Study Support](#) provide information about:

- [Researching for your assignments](#)
- How to [manage your references](#)
- [Referencing style guides](#)
- [Subject and research guides](#)

Numeracy Support is provided by the [Numeracy Centre](#). Students can attend these support classes on a drop-in basis as required.

[Studiosityhttp://www.yourtutor.com.au/](http://www.yourtutor.com.au/) is a one-to-one personal study support service which may be made available via iLearn. If available, students may use this service to get online study help and/or feedback on an assignment usually within 24 hours. Students who are unsure whether this service is available in their unit or how to use this service should check with their teacher. Please note that this is an external service and feedback provided is generic in nature (for example comments on grammar and cohesion) and may not be specific to the requirements of the task. If students require specific feedback on how their work aligns with the expectations of

the unit or marking criteria, they should consult their teacher.

## Unit Schedule

| <i>Week.<br/>Lesson</i> | <i>Topic/<br/>Content<br/>Covered</i>                                       | <i>Required<br/>Reading</i> | <i>Associated Tasks</i>   | <i>Assessment Task</i> |
|-------------------------|---|-----------------------------|---|------------------------|
| 1.1                     | Introduction to the unit and databases<br><br>Conceptual Database Modelling | Hoffer 1-2                  | Learn about the following: <ul style="list-style-type: none"> <li>• Data, information, metadata and database.</li> <li>• Limitations of conventional file processing</li> <li>• Advantages of the database approach.</li> <li>• Costs and risks of databases.</li> <li>• The database development process.</li> <li>• An overview of the E-R model.</li> <li>• Draw E-R diagrams (ERD) for common business situations.</li> </ul> |                        |
| 1.2                     | Introduction to unit and databases<br><br>Conceptual Database Modelling     | Hoffer 1-2                  | <ul style="list-style-type: none"> <li>• Work on ER modelling using a DB designing tool (such as PowerDesigner).</li> </ul>   |                        |
| 1.3                     | Conceptual Database Modelling   | Hoffer 2-3                  | Learn about the following: <ul style="list-style-type: none"> <li>• The use of an associative entity in an ERD.</li> <li>• Learn about the use of ER specialization and generalization to create an enhanced entity-relationship (EER).</li> </ul>  |                        |
| 1.4                     | Conceptual Database Modelling   | Hoffer 2-3                  | <ul style="list-style-type: none"> <li>• Work on EER modelling using a DB designing tool (PowerDesigner).</li> </ul>  |                        |
| 2.1                     | Logical Database Design and the relational model                            | Hoffer 4                    | Learn about the following: <ul style="list-style-type: none"> <li>• Develop logical database models from conceptual database models.</li> </ul>   |                        |

| <i>Week.<br/>Lesson</i> | <i>Topic/<br/>Content<br/>Covered</i>            | <i>Required<br/>Reading</i> | <i>Associated Tasks</i>   | <i>Assessment Task</i>   |
|-------------------------|--|-----------------------------|---|--|
| 2.2                     | Logical Database Design and the relational model | Hoffer 4                    | <ul style="list-style-type: none"> <li>Work on data logical model using a DB designing tool (PowerDesigner).</li> </ul>   |  |
| 2.3                     | Database Normalisation                           | Hoffer 4                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>The need for normalisation and database anomalies</li> <li>database normal forms 1NF, 2NF and 3NF</li> </ul>                       |  |
| 2.4                     | Database Normalisation                           | Hoffer 4                    | <ul style="list-style-type: none"> <li>Work on database normalisation examples.</li> </ul>  |  |
| 3.1                     | CDM, LDM and PDM case study                      | Hoffer 1-4                  | <ul style="list-style-type: none"> <li>Work on database modelling through different stages of modelling</li> </ul>  |  |
| 3.2                     | Introduction to SQL                              | Hoffer 5                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>Role of SQL in databases</li> <li>Single table queries using SQL</li> <li>Establishing referential integrity using SQL.</li> </ul> | <b>Database Modelling-assignment submission to iLearn on Tuesday of Week 3, 11:55 PM (20%)</b> |
| 3.3                     | Advanced SQL                                     | Hoffer 5-6                  | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>Write multiple-table SQL queries.</li> <li>Define and use three types of joins.</li> </ul>   |  |
| 3.4                     | Advanced SQL                                     | Hoffer 5-6                  | <ul style="list-style-type: none"> <li>Work on advanced SQL Queries</li> </ul>  |  |
| 4.1                     | Advanced SQL                                     | Hoffer 6                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>Write noncorrelated and correlated subqueries.</li> <li>Use a derived table, creating views and triggers.</li> </ul>               |  |

| <i>Week.<br/>Lesson</i> | <i>Topic/<br/>Content<br/>Covered</i>                | <i>Required<br/>Reading</i> | <i>Associated Tasks</i>  | <i>Assessment Task</i>  |
|-------------------------|--|-----------------------------|--|---|
| 4.2                     | Advanced SQL   | Hoffer 6                    | <ul style="list-style-type: none"> <li>• Work on advanced SQL Queries</li> </ul>   | <b>Database Modelling - Quiz (20%)</b>  |
| 4.3                     | Advanced SQL   | Hoffer 6                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• Write single and multiple table SQL queries</li> <li>• Write noncorrelated and correlated subqueries</li> </ul>   |   |
| 4.4                     | Advanced SQL   | Hoffer 6                    | <ul style="list-style-type: none"> <li>• Work on advanced SQL Queries</li> </ul>   |   |
| 5.1                     | Databases in application                             | Hoffer 7                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• An overview of client-server architecture.</li> <li>• three components of client/ server. systems: presentation, processing, and storage.</li> <li>• difference between two-tier and three-tier architectures.</li> <li>• Key components and information flow in Web applications.</li> </ul> |   |
| 5.2                     | Physical Database Design and Database Infrastructure | Hoffer 8                    | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• The physical database design process.</li> <li>• Denormalization and data partitioning.</li> <li>• Designing physical database files.</li> <li>• Database software data security features.</li> <li>• Cloud-based database infrastructure.</li> </ul>   | <b>Database Implementation-assignment submission to iLearn on Tuesday of Week 5, 11:55 PM (15%)</b> |



| <b>Week.<br/>Lesson</b> | <b>Topic/<br/>Content<br/>Covered</b>                                     | <b>Required<br/>Reading</b>       | <b>Associated Tasks</b>  | <b>Assessment Task</b>  |
|-------------------------|---|-----------------------------------|--|---|
| 5.3                     | Data Warehousing  | Hoffer 9                          | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• Need for data warehousing.</li> <li>• Some characteristics of a data warehouse.</li> <li>• The need for data mart</li> <li>• Difference between data warehouse and data mart</li> </ul>   |   |
| 5.4                     | <p>Big Data Techniques</p> <p>Analytics and its implication</p>           | <p>Hoffer 10</p> <p>Hoffer 11</p> | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• The need for big data</li> <li>• The characteristics of big data</li> <li>• The need for NoSQL.</li> </ul> <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• The need for data analytics.</li> <li>• The type of analytics.</li> </ul> | <b>Database Topics Assessment_1</b>   |
| 6.1                     | <p>Data and Database Administration</p> <p>Green IT (online resource)</p> | Hoffer 12                         | <p>Learn about the following:</p> <ul style="list-style-type: none"> <li>• Overview of data and database administration roles.</li> <li>• Data governance.</li> <li>• Managing data quality.</li> </ul>  |   |
| 6.2                     | <p>Data and Database Administration</p> <p>Green IT (online resource)</p> | Hoffer 12                         | <ul style="list-style-type: none"> <li>• Class discussion on the topics covered in the previous lesson.</li> <li>• Research activities on the topics covered in the previous lesson.</li> </ul>  | <b>Database Topics Assessment_2</b>   |
| 6.3                     | Revision  |                                   |  |   |
| 6.4                     | Revision + Quiz   |                                   |  | <p><b>Database Topics Assessment_3</b></p> <p><b>Database Implementation-Quiz (20%)</b></p> |
| 7                       | <b>There is NO Final Exam for this unit.</b>                              |                                   |  |   |

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) 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](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

### Academic Integrity

Using the work or ideas of another person, whether intentionally or not, and presenting them as your own without clear acknowledgement of the source is called [Plagiarism](#).

Macquarie University promotes awareness of information ethics through its [Academic Integrity P](#)

olicy. This means that:

- all academic work claimed as original must be the work of the person making the claim;
- all academic collaborations of any kind must be acknowledged;
- academic work must not be falsified in any way; and
- when the ideas of others are used, these ideas must be acknowledged appropriately.

All breaches of the Academic Integrity Policy are serious and penalties apply. Students should be aware that they may fail an assessment task, a unit or even be excluded from the University for breaching the Academic Integrity Policy.

### **Penalties for Plagiarism and Collusion**

The University may commence applicable disciplinary procedures if a person breaches the Academic Integrity Policy.

If students' work is found to be similar to another source and considered to include instances of plagiarism or collusion, they will be penalised.

**Plagiarism** occurs when a person takes someone else's work or ideas and presents them as their own, that is, without acknowledging where the work or ideas came from originally.

For example, if a student was awarded 52/100 marks for an essay, which contained 30% similarity (i.e. 30% of the work was identified to be copied from another source), the 30% of the 100 marks allocated to the task (i.e. 30 marks) could be deducted as a penalty. The final score would be 22/100 marks.

Penalty calculations may vary by unit.

**Collusion** takes place when a student copies work or ideas from another student with or without this student's consent to complete a task that is supposed to be done individually. Please note that **all students are penalised** in collusion cases, regardless of who produced the original work.

For example, if a friend asks another student for assistance and the student provides them with a copy of their work, both students will receive exactly the same penalty for the act of collusion.

### **Turnitin and other Plagiarism Detection Software**

Student submissions for assessment tasks are subject to plagiarism detection software, for example, Turnitin, or similar software approved by the University. This software compares electronically submitted papers to a database of academic publications, internet sources and other student papers that have been submitted to the system to identify matching text. It then produces an Originality Report which identifies text taken from other sources and generates a similarity percentage.

Multiple submissions may be possible via Turnitin or other software prior to the final due date and time of an assessment task and originality reports may be made available to students to view and check their levels of similarity prior to making a final submission. Students are encouraged to use these reports to ensure that they do not breach the Academic Integrity Policy through high levels of similarity (plagiarism).

If you have not planned your submission time carefully and note high levels of similarity in your work after the due date, you can still resubmit your work (if it is not a time-limited assessment); however, a late penalty will apply. For instructions on how to resubmit your work, please see the “Resubmissions after the due date” section in this Unit Guide.

Teaching staff will use the originality report to judge whether plagiarism has occurred and whether penalties should apply for breaches of the Academic Integrity Policy. Any similar text identified by Turnitin on iLearn will be considered carefully to see if it is indeed a breach of the Academic Integrity Policy.

There is no set percentage which indicates whether plagiarism has occurred; all identified matching text should be reconsidered carefully. If plagiarism has occurred or is suspected and resubmission is possible prior to the due date, students are advised to edit their work before making a final submission. Help may be sought from teaching staff and students may also access [Assignment and Study Support](#) provided by the library or [the Writing Centre](#).

Please refer to these instructions on [how to submit your assignment through Turnitin](#) on iLearn and to access similarity reports and feedback provided by teaching staff.

Should you have questions about Turnitin on iLearn or experience issues submitting through the system, you must inform your teacher immediately. If the issue is technical in nature, you may also lodge a [OneHelp](#) Ticket; please refer to the [IT help page](#).

### **Submission of Drafts through Turnitin.**

In some instances, students may be required to submit drafts of written work via Turnitin in iLearn **prior to the due date of the assessment** task so that they can receive feedback prior to making a final submission. If the student does not make a final submission prior to the due date, their draft will be counted as the final submission or late penalties will be applied.

### **Assessment Policy**

Students should familiarise themselves with their responsibilities under the [Assessment Policy](#), and notably the [Assessment Procedures](#), Section 3, Part E – Examinations.

### **Grade Appeals**

A student who has been awarded a final grade for a unit has the right to appeal that grade as outlined in the [Assessment Policy, Assessment Procedures, Section 3, Part F](#). Grade appeals apply to the final mark and the grade a student receives for a unit of study. They do not apply to results received for individual assessment tasks.

Grade appeals must be submitted via [ask.mq.edu.au](http://ask.mq.edu.au) within 15 working days from the published result date for the relevant unit. Before submitting a Grade Appeal, please ensure that you read the [Assessment Policy](#) and note valid grounds for appeals.

Students are expected to seek feedback on individual assessment tasks prior to the award of a final grade. Students also have the right to request generic feedback from the teaching staff on their overall performance in the unit, including in a final examination. This can be done at any time in the six-month period starting from the day on which the final grade of the relevant unit is published.

## Course Progression

The College closely monitors students' academic progress as per the [Progression Policy](#) for Courses and Programs delivered by Macquarie University College.

To maintain satisfactory academic progress, a student must successfully complete (pass) 50% or more of their enrolled units in a Term of study and meet any other requirements to pass listed in the Unit Guide.

Students who fail to make satisfactory academic progress will be classified as "at-risk" and will be notified in writing. At-risk students may be required to undergo academic counselling, undertake certain initiatives or have conditions placed upon their enrolment to help them make satisfactory progress.

Students must also pass 50% or more of the units in two or more terms in order to meet Minimum Rate of Progress (MRP) requirements. A student is deemed not to be making Minimum Rate of Progress if they fail more than 50% of their enrolled units in two consecutive Terms of study, or if they have failed more than 50% of their units after studying two or more terms.

If students do not satisfy academic progression the University may impose a suspension of their studies. For international students, this can have an impact of their visa status.

## Learning and Teaching Activities

### Lessons

Lessons will include a mixture of activities. New content and topics will be presented during lessons, and students will be given problems, practice questions and other interactive activities to apply the knowledge and the skills gained in the lesson. Students will be required to take notes, complete set tasks and engage in discussions and individual and group activities.

In class, specific time may be dedicated to work on assessment tasks and students will be given guidance and feedback to complete these. Certain lessons may be dedicated to independent research and reading related to the unit whether in the classroom or a computer lab.

## Active Participation

In the workplace, at university and in the surrounding community, a person's contributions are important. Students will be required to not only attend but also actively participate in lessons.

Active participation entails:

- active engagement in-class activities;
- contribution to class discussions by asking and answering questions;
- coming to class prepared and having completed required pre-readings and activities;
- completion of set class and homework activities;
- collaboration with other students; and
- adhering to Macquarie University's Student Code of Conduct.

## Student Support

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

### The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## 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.

## Changes from Previous Offering

None

## Course Contact Hours

Weekly contact, for this unit, will be 8 hours (48 hours per term).

There are also 2 x two-hour workshops scheduled outside of class time.

## Unit Specific Texts and Materials

**The following texts have been prescribed for this unit.**

Jeffrey A. Hoffer; Ramesh Venkataraman; Heikki Topi, 2019, *Modern Database Management*, 13th edition, Publisher: Pearson. (Publication Date: 12-08-2019)

Print ISBN: 9781292263359

**Students can read an electronic version of the prescribed textbook edition 2016 through Mq university library. Click on "Full text available at "["2020 eTextbooks"](#) and log in with OneID and password.**

All students should ensure that they have access to the prescribed text(s) from the start of the Term as failure to do so could jeopardise their academic progress in this unit.

Other editions or formats of the above resource(s) may be acceptable, but you must students must consult teaching staff prior to purchasing these.