BUSA8090

Data and Visualisation for Business

Session 1, In person-scheduled-weekday, North Ryde 2022

Department of Actuarial Studies and Business Analytics

Contents

Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff Deanna Tracy deanna.tracy@mq.edu.au
Credit points 10
Prerequisites Admission to MActPrac or MAppStat or MBusAnalytics
Corequisites
Co-badged status
Unit description This unit prepares students for the world where "data is the new oil". Numerous business case studies are treated in depth so students emerge with a clear understanding of the "unreasonable effectiveness of data".The journey starts with the Linux command line. Along the way students will develop the skills necessary to tease data out of relational databases using SQL. Data visualisation is also a focus of the unit, which treats its analysis and design as well as its implementation using a variety of open source and commercial tools.

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: Devise programming language code for data analytics and visualisation using a variety of computer tools.

ULO2: Formulate SQL language approaches to relational database problems.

ULO3: Assemble statistical learning techniques to tackle data science problems.

ULO4: Examine and employ a variety of data visualisation techniques.

ULO5: Evaluate various popular data visualisation solutions.

General Assessment Information

Late submissions of assessments Unless a Special Consideration request has been

submitted and approved, no extensions will be granted. There will be a deduction of 10% of the total available assessment-task marks made from the total awarded mark for each 24-hour period or part thereof that the submission is late. Late submissions will only be accepted up to 96 hours after the due date and time.

No late submissions will be accepted for timed assessments – e.g., quizzes, online tests.

Table 1: Penalty calculation based on submission time

Submission time after the due date (including weekends)	Penalty (% of available assessment task mark)	Example: for a non-timed assessment task marked out of 30
< 24 hours	10%	10% x 30 marks = 3-mark deduction
24-48 hours	20%	20% x 30 marks = 6-mark deduction
48-72 hours	30%	30% x 30 marks = 9-mark deduction
72-96 hours	40%	40% x 30 marks = 12-mark deduction
> 96 hours	100%	Assignment won't be accepted

Special Consideration

To request an extension on the due date/time for a timed or non-timed assessment task, you must submit a Special Consideration application. An application for Special Consideration does not guarantee approval.

The approved extension date for a student becomes the new due date for that student. The late submission penalties above then apply as of the new due date.

- *Delivery and resources information* - please add in resources information such as recommended reading materials but as class delivery is still not 100% certain, please do not mention about class arrangement. Instead, you can ask students to refer to iLearn for details.

- *Unit schedule* - this is optional but strongly recommended to be included. Otherwise, please refer students to refer to iLearn for detail information.

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment 2	30%	No	Refer to iLearn

Name	Weighting	Hurdle	Due
Assignment 1	30%	No	Refer to iLearn
Final Examination	40%	No	Exam period

Assignment 2

Assessment Type [1]: Modelling task
Indicative Time on Task [2]: 20 hours
Due: **Refer to iLearn**
Weighting: **30%**

Practical coding assignment using data visualisation packages.

On successful completion you will be able to:

- Devise programming language code for data analytics and visualisation using a variety of computer tools.
- Assemble statistical learning techniques to tackle data science problems.
- Examine and employ a variety of data visualisation techniques.
- Evaluate various popular data visualisation solutions.

Assignment 1

Assessment Type [1]: Programming Task
Indicative Time on Task [2]: 20 hours
Due: **Refer to iLearn**
Weighting: **30%**

Practical coding assignment using SQL.

On successful completion you will be able to:

- Devise programming language code for data analytics and visualisation using a variety of computer tools.
- Formulate SQL language approaches to relational database problems.

Final Examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 20 hours
Due: **Exam period**
Weighting: **40%**

A closed book two-hour final examination will be held during the University Examination period.

On successful completion you will be able to:
- Devise programming language code for data analytics and visualisation using a variety of computer tools.
- Assemble statistical learning techniques to tackle data science problems.
- Examine and employ a variety of data visualisation techniques.
- Evaluate various popular data visualisation solutions.

[1] 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.

[2] 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

This unit prepares students for the world where "data is the new oil". Numerous business case studies are treated in depth so students emerge with a clear understanding of the "unreasonable effectiveness of data".The journey starts with the Linux command line. Along the way, students will develop the skills necessary to tease data out of relational databases using SQL. Data visualisation is also a focus of the unit, which treats its analysis and design as well as its implementation using a variety of open source and commercial tools.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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) 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 or if you are a Global MBA student contact 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.

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/.

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.