COMP6200
Data Science
Session 1, Weekday attendance, North Ryde 2020

Department of Computing

Coronavirus (COVID-19) Update
Due to the Coronavirus (COVID-19) pandemic, any references to assessment tasks and on-campus delivery may no longer be up-to-date on this page.
Students should consult iLearn for revised unit information.

Find out more about the Coronavirus (COVID-19) and potential impacts staff and students

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General Information

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Credit points
10

Prerequisites

Corequisites

Co-badged status

Unit description
This unit introduces students to the fundamental techniques and tools of data science, such as the graphical display of data, predictive models, evaluation methodologies, regression, classification and clustering. The unit provides practical experience applying these methods using industry-standard software tools to real-world data sets. Students who have completed this unit will be able to identify which data science methods are most appropriate for a real-world data set, apply these methods to the data set, and interpret the results of the analysis they have performed.

Important Academic Dates
Information about important academic dates including deadlines for withdrawing from units are available at https://students.mq.edu.au/important-dates

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

ULO1: Identify the appropriate Data Science analysis for a problem and apply that
method to the problem.

**ULO2**: Interpret Data Science analyses and summarise and identify the most important aspects of a Data Science analysis.

**ULO3**: Present the results of their Data Science analyses both verbally and in written form.

**ULO4**: Discuss the broader implications of Data Science analyses.

### Assessment Tasks

**Coronavirus (COVID-19) Update**

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult [iLearn](https://ilearn.mq.edu.au) for revised unit information.

Find out more about the Coronavirus (COVID-19) and potential impacts staff and students

### Delivery and Resources

**Coronavirus (COVID-19) Update**

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: [https://ask.mq.edu.au/account/pub/display/unit_status](https://ask.mq.edu.au/account/pub/display/unit_status)

### Classes

There will be one two hour lecture each week and one two hour workshop in the computing laboratory. You are expected to attend both classes as they provide complimentary learning activities each week. In practical classes you will write code and experiment with various data sets; in lectures we will discuss the methods you are learning and how the results of your analysis can be interpreted.

### Textbooks

We will refer to the following texts during the semester:

*Introduction to Data Science A Python Approach to Concepts, Techniques and Applications*

Igual, Laura, Seguí, Santi (electronic edition available via [MQ Library](https://mqlibrary.mq.edu.au))

*Computational and Inferential Thinking: The Foundations of Data Science* By Ani Adhikari and John DeNero (available on [GitBooks](https://gitbooks.mq.edu.au))

You will be given readings from these and other sources each week.
Technology Used and Required

We will make use of Python 3.6 for data analysis, including a range of modules such as scikit-learn, pandas, numpy that provide additional features. These can all be installed via the Anaconda Python distribution. We will discuss this environment and the installation process in the first week of classes.

We will use Jupyter Notebook as a way of developing and presenting the analysis results. This is included in the full Anaconda distribution.

Project Work

A major part of the assessment in this unit is based on a project that you will complete in groups. This will allow you to explore the techniques you are learning in class in a real-world data analysis exercise.

Unit Schedule

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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). 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.)

Students seeking more policy resources can visit the 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).

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 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

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 Enquiry Service
For all student enquiries, visit Student Connect at ask.mq.edu.au
If you are a Global MBA student contact globalmba.support@mq.edu.au

Equity 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.

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.

Changes from Previous Offering
The presentation component of the group project has been moved to a video presentation to help manage the logistics of a large number of students needing to present in the final week of semester.