



# COMP8230

## Mining Unstructured Data

Session 1, In person-scheduled-weekday, North Ryde 2025

*School of Computing*

### Contents

---

<a href="#"><u>General Information</u></a>	2
<a href="#"><u>Learning Outcomes</u></a>	3
<a href="#"><u>General Assessment Information</u></a>	3
<a href="#"><u>Assessment Tasks</u></a>	4
<a href="#"><u>Delivery and Resources</u></a>	7
<a href="#"><u>Unit Schedule</u></a>	7
<a href="#"><u>Policies and Procedures</u></a>	8
<a href="#"><u>Changes since First Published</u></a>	10

---

#### **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

Unit Convenor and Lecturer

Yu Zhang

[y.zhang@mq.edu.au](mailto:y.zhang@mq.edu.au)

Lecturer

Qiongkai Xu

[qiongkai.xu@mq.edu.au](mailto:qiongkai.xu@mq.edu.au)

Lecturer

Jia Wu

[jia.wu@mq.edu.au](mailto:jia.wu@mq.edu.au)

Credit points

10

Prerequisites

COMP6200 or Admission to the GradDipRes or GradCertRes

Corequisites

Co-badged status

Unit description

Unstructured data, like text data, graph data, audios, and videos widely exist in our daily life. Efficiently and effectively mining the unstructured data are significant and acting as the backbone in many real applications, like machine translation, face recognition, and link prediction. This unit will introduce key concepts in unstructured data mining, including specific algorithms and techniques for unstructured data cleaning, pattern mining, knowledge discovery, and the prediction of unstructured data. By taking this unit you will be given a broad view of the general issues surrounding unstructured data and the application of methodologies and algorithms to such a type of data. You will have the chance to explore an assortment of unstructured data mining techniques, which you will apply to solve problems involved in real scenarios.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Industry, Innovation and Infrastructure

## 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:** Demonstrate an understanding of basic concepts, techniques, algorithms and modellings in unstructured data mining.

**ULO2:** Identify the appropriate data mining techniques and algorithms for real life unstructured data mining problems.

**ULO3:** Explain how good decision making is supported by descriptive and predictive data mining

**ULO4:** Present and analyse the unstructured data mining results with advanced data mining techniques.

**ULO5:** Communicate clearly and effectively

## General Assessment Information

### Release Dates

- Assessment 1: To be released no later than 7th March
- Assessment 2: To be released no later than 4th April
- Assessment 3: To be released no later than 16th May

The [University's Academic Integrity policy](#) will be enforced. You may assist your fellow students with general concepts, pointers to resources and useful tools or commands that are publicly available. You may not become involved in any way in helping a fellow student to find the solution to their particular task, nor may you share with them any aspect of the solution of your particular task.

Each assessment task must be the sole work of the student turning it in. Any cheating will be handled under the [University's Academic Integrity Policy](#).

### Requirements to Pass this Unit

To pass this unit you must:

- Achieve a total mark equal to or greater than 50%.

### Late submission

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is **11:55 pm**. A 1-hour grace period will be provided to students who experience a technical concern. The late submission rule was changed to align with the new

Faculty policy.

For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#).

## Assessments where Late Submissions will be accepted

- Assessment 1 – YES, Standard Late Penalty applies
- Assessment 2 – YES, Standard Late Penalty applies
- Assessment 3 – YES, Standard Late Penalty applies
- Weekly Submission – NO, unless Special Consideration is granted

## Special Consideration

The [Special Consideration Policy](#) aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable, and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through [connect.mq.edu.au](https://connect.mq.edu.au).

## Details for each assignment will be available via iLearn

You are encouraged to:

- Set your personal deadline earlier than the actual one
- Keep backups of all your important files
- Ensure that no-one else picks up your printouts

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Problem Analysis</a>	30%	No	11:55 pm 28th March
<a href="#">Report on Data Mining in Industry</a>	30%	No	11:55 pm 9th May
<a href="#">Literature Review</a>	30%	No	11:55 pm 30th May
<a href="#">Weekly Submission</a>	10%	No	Weekly (one week after each lecture)

## Problem Analysis

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

Indicative Time on Task <sup>2</sup>: 18 hours

Due: **11:55 pm 28th March**

Weighting: **30%**

Students will be given a sample problem and will discuss the relevant data mining techniques and develop a plan to explore the problem and deliver a presentation.

On successful completion you will be able to:

- Demonstrate an understanding of basic concepts, techniques, algorithms and modellings in unstructured data mining.
- Explain how good decision making is supported by descriptive and predictive data mining
- Communicate clearly and effectively

## Report on Data Mining in Industry

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

Indicative Time on Task <sup>2</sup>: 18 hours

Due: **11:55 pm 9th May**

Weighting: **30%**

Students will write a report and deliver a presentation on an aspect of the application of unstructured data mining in an industry context.

On successful completion you will be able to:

- Demonstrate an understanding of basic concepts, techniques, algorithms and modellings in unstructured data mining.
- Present and analyse the unstructured data mining results with advanced data mining techniques.

## Literature Review

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

Indicative Time on Task <sup>2</sup>: 18 hours

Due: **11:55 pm 30th May**

Weighting: **30%**

Review of work relevant to one of the topics presented in the unit and deliver a presentation.

On successful completion you will be able to:

- Demonstrate an understanding of basic concepts, techniques, algorithms and modellings in unstructured data mining.
- Identify the appropriate data mining techniques and algorithms for real life unstructured data mining problems.
- Communicate clearly and effectively

## Weekly Submission

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

Indicative Time on Task <sup>2</sup>: 6 hours

Due: **Weekly (one week after each lecture)**

Weighting: **10%**

Students will be marked based on their answers on weekly submissions.

On successful completion you will be able to:

- Demonstrate an understanding of basic concepts, techniques, algorithms and modellings in unstructured data mining.
- Identify the appropriate data mining techniques and algorithms for real life unstructured data mining problems.
- Explain how good decision making is supported by descriptive and predictive data mining
- Present and analyse the unstructured data mining results with advanced data mining techniques.

---

<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

### Classes

Each week has a two-hour in-person lecture and a one-hour in-person workshop. For details of days, times and rooms consult the [timetables webpage](#).

Lectures are a core learning experience where we will discuss the key theoretical underpinnings and concepts to this unit. Lecture recordings will be available after each lecture in iLearn.

Workshops provide an opportunity for you to ensure your understanding of the key concepts of the unit and develop skills to analyze these concepts in case studies. Each week you should complete your weekly submissions to questions provided in workshops.

**Week 1 classes:** Lectures and Workshops begin in Week 1.

### Required and Recommended Texts

All required and recommended readings will be provided as part of the lecture material.

### Unit Web Page

The unit web page will be hosted in iLearn, where you will need to log in using your Student One ID and password. The unit will make extensive use of discussion boards also hosted in iLearn. Please post questions there, they will be monitored by the staff on the unit.

### Methods of Communication

We will communicate with you via your university email or through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to the unit convenor from your university email address.

### Unit Schedule

Week	Topic	Note
1	Unstructured Data Mining in IoT	
2	Personal Health Data Mining in IoT	
3	Millimetre Wave Radar Sensing for Personal Health	
4	Localisation and Tracking in IoT	
5	Deep Learning for Mining Unstructured Data	Assessment 1 due
6	Federated Learning for Data Privacy	
7	Large Language Model in AI Agents and Society	
Recess		
8	Data Fusion and Multimodal Model for Data Mining	

9	Weakly Supervised Learning for Mining Unstructured Data	Assessment 2 due
10	Multiple Instance Representation Learning with Data Mapping	
11	Bag-constrained Data Mining with Multiple Views	
12	Advanced Topic of Unstructured Data Mining	Assessment 3 due
13	Revisions (Q&A)	

## 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 [connect.mq.edu.au](https://connect.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](#).

## 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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

## Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), 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 since First Published

Date	Description
10/02/2025	As requested, ask.mq.edu.au is replaced by connect.mq.edu.au in general info.

---

Unit information based on version 2025.04 of the [Handbook](#)