



MATH3030

Mathematics by Enquiry

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Mathematical and Physical Sciences

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General Information

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Credit points 10
Prerequisites MATH3010 or MATH3020 or MATH3900 or MATH3902 or MATH3905 or MATH3906 or MATH3907 or MATH3909
Corequisites
Co-badged status
Unit description What are the symmetries of a polynomial? How do you train a neural network to solve a PDE? What does it mean for a sequence of functions to converge? These are some of the big questions that mathematics helps us to answer. In this unit, you'll have the chance to pose your own big question and develop the analytical skills needed to explore it. You'll choose from a range of focus areas, each representing a different facet of mathematics. Within your chosen area, you'll identify a problem which interests you. We'll then guide you in learning a range of tools and techniques relevant to your problem and give you space to investigate it further on your own. You'll wrap things up in a report, explaining what you learnt to an audience of your choice. Whether you're planning a career in industry or teaching, or want to continue on to further research, this unit will give you the skills and confidence to do mathematics that matters to you.

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: Apply mathematical techniques to analyse and solve problems within a chosen focus area.

ULO2: Plan a mathematical project by developing a timeline, setting milestones, and outlining deliverable requirements.

ULO3: Create a mathematical output that integrates unit knowledge and independent research.

ULO4: Present mathematical results in an engaging and professional manner, both in writing and orally.

General Assessment Information

Requirements to Pass This Unit

To pass this unit, you must

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

Attendance and participation

Regular engagement in all learning activities of the unit is crucial for your success. These activities provide opportunities to deepen your understanding of the material, collaborate with peers, and receive valuable feedback from instructors, to assist in completing the unit assessments. Your active participation not only enhances your own learning experience but also contributes to a vibrant and dynamic learning environment for everyone.

Late Assessment Submission Penalty

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. This grace period will be applied automatically, and no notification to unit staff is necessary. 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

- Project report - YES, Standard Late Penalty applies

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.

Project report: If you experience circumstances or events that affect your ability to complete the project report in this unit on time, please inform the convenor and submit a Special Consideration

request through connect.mq.edu.au.

Test/Oral examination: If you experience circumstances or events that affect your ability to attend the in-class test or oral examination, please inform the convenor and submit a Special Consideration request through connect.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Project report	50%	No	08/11/2026	Individual and Group	No	Open
Oral examination	20%	No	Exam Period	Individual	No	Observed
Test	30%	No	Week 7	Individual	No	Observed

Project report

Assessment Type ¹: Experiential task

Indicative Time on Task ²: 30 hours

Due: **08/11/2026**

Weighting: **50%**

Groupwork/Individual: Individual and Group

Short extension ³: No

AI Approach: Open

You will have the opportunity to apply the knowledge gained in the unit to a larger scale mathematical problem than the short questions typical in assignments.

On successful completion you will be able to:

- Apply mathematical techniques to analyse and solve problems within a chosen focus area.
- Plan a mathematical project by developing a timeline, setting milestones, and outlining deliverable requirements.
- Create a mathematical output that integrates unit knowledge and independent research.
- Present mathematical results in an engaging and professional manner, both in writing and orally.

Oral examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 12 hours

Due: **Exam Period**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will be tested in the oral examination on your ability to utilise concepts and techniques learnt in the unit.

On successful completion you will be able to:

- Apply mathematical techniques to analyse and solve problems within a chosen focus area.
- Present mathematical results in an engaging and professional manner, both in writing and orally.

Test

Assessment Type ¹: Examination

Indicative Time on Task ²: 18 hours

Due: **Week 7**

Weighting: **30%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will be tested on your ability to analyse and solve mathematical problems using concepts and techniques learnt in the unit.

On successful completion you will be able to:

- Apply mathematical techniques to analyse and solve problems within a chosen focus area.

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
- [Academic Success](#) 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.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

Classes

In weeks 1-6:

- There is one two-hour class each week, which is a mixed content delivery and problem class.
- There is one hour of pre-recorded videos to watch per week. These will be made available via iLearn.

In week 7, the two-hour class will be your mid-semester test.

In weeks 8-13:

- There is one two-hour class each week, which is a workshop-style class in which you can work on your projects together with guidance from the unit convenors.

There are various different classes you can enrol in on eStudent; this is an artefact of the timetabling. it's not important which you choose so long as you are enrolled in one of them.

Focus areas

There are two possible focus areas that you can choose in this unit:

- Nonlinear dynamical systems
- Algebra - rings, geometry and elliptic curves

The focus area you choose will determine the content stream that you are part of in the first six weeks of semester, and the potential topics you may choose for your project. We will ask you to choose between the two streams in week 1.

Suggested textbooks

Please see iLearn for suggested textbooks.

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 your lecturers from your university email address.

Unit Schedule

week	class topic project activity	assessment activity
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1	Introduction then stream-specific content	
2	Stream-specific	
3	Stream-specific	
4	Stream-specific	Choosing a project
5	Stream-specific	

6	Stream-specific	Submit project titles for sign-off	
7	Mid-semester test	Mid-semester test (in class) (30%)	
8	Project work	Submit project plans for brief feedback	Project planning
9	Project work	Create repository (GitHub/Overleaf)	Synthesis of literature
10	Project work		Original contribution
11	Project work		Writing and exposition / structure and layout
12	Project work		Selling the project
13	Project work	Project submission (50%)	Last chance for instructor feedback

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 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/>

Academic Success

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

- [Ask a Study Coach](#)
- [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 <https://students.mq.edu.au/support/technology/service-desk>.

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.

Unit information based on version 2026.03 of the [Handbook](#)