# MATH7904

Research Topics in Mathematics 1

Session 1, In person-scheduled-weekday, North Ryde 2024

School of Mathematical and Physical Sciences

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**Disclaimer**

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General Information

Unit convenor and teaching staff
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726, 12WW

Catherine Penington
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Credit points
10

Prerequisites
Admission to MRes

Corequisites

Co-badged status

Unit description
This unit is based on an area of current mathematical research. The specific area may vary from year to year depending on the interests of the students and lecturer.

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 advanced disciplinary knowledge and skills in a particular area of mathematics.

ULO2: Apply advanced mathematical skills to related areas of mathematics or other disciplines.

ULO3: Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.

ULO4: Communicate effectively the results of advanced mathematical reasoning.
General Assessment Information

Requirements to Pass this Unit
To pass this unit you must:

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

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.

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

- Assignment 1-4 – YES, Standard Late Penalty applied

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 ask.mq.edu.au.

Written Assessments: If you experience circumstances or events that affect your ability to complete the written assessments in this unit on time, please inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Assessment Tasks

<table>
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<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
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<tr>
<td>Assignment 1</td>
<td>25%</td>
<td>No</td>
<td>Week 6</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>25%</td>
<td>No</td>
<td>Week 8</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>25%</td>
<td>No</td>
<td>Week 10</td>
</tr>
<tr>
<td>Assignment 4</td>
<td>25%</td>
<td>No</td>
<td>Week 12</td>
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</table>
Assignment 1

Assessment Type: Problem set
Indicative Time on Task: 10 hours
Due: Week 6
Weighting: 25%

The assignments reinforce and build on material from lectures, as well as leading students towards more advanced topics. They are designed to promote a more independent style of learning than in standard undergraduate units.

On successful completion you will be able to:
- Demonstrate advanced disciplinary knowledge and skills in a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Communicate effectively the results of advanced mathematical reasoning.

Assignment 2

Assessment Type: Problem set
Indicative Time on Task: 10 hours
Due: Week 8
Weighting: 25%

The assignments reinforce and build on material from lectures, as well as leading students towards more advanced topics. They are designed to promote a more independent style of learning than in standard undergraduate units.

On successful completion you will be able to:
- Demonstrate advanced disciplinary knowledge and skills in a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
Communicate effectively the results of advanced mathematical reasoning.

Assignment 3
Assessment Type: Problem set
Indicative Time on Task: 10 hours
Due: Week 10
Weighting: 25%

The assignments reinforce and build on material from lectures, as well as leading students towards more advanced topics. They are designed to promote a more independent style of learning than in standard undergraduate units.

On successful completion you will be able to:

- Demonstrate advanced disciplinary knowledge and skills in a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Communicate effectively the results of advanced mathematical reasoning.

Assignment 4
Assessment Type: Problem set
Indicative Time on Task: 10 hours
Due: Week 12
Weighting: 25%

The assignments reinforce and build on material from lectures, as well as leading students towards more advanced topics. They are designed to promote a more independent style of learning than in standard undergraduate units.

On successful completion you will be able to:

- Demonstrate advanced disciplinary knowledge and skills in a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena
from within a particular area of mathematics.
• Communicate effectively the results of advanced mathematical reasoning.

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

Delivery
Face to Face

Suggested textbooks
Elementary Fluid Dynamics, Acheson

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 your lecturers from your university email address.

COVID Information
For the latest information on the University’s response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: https://www.mq.edu.au/about/coronavirusfaqs. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

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
Student Support

- 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.

https://unitguides.mq.edu.au/unit_offerings/164144/unit_guide/print
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 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.

Unit information based on version 2024.01R of the Handbook