MATH7900

Research Frontiers in Mathematics

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

School of Mathematical and Physical Sciences

Contents

General Information	2
Learning Outcomes	2
Assessment Tasks	3
Delivery and Resources	4
Policies and Procedures	5

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General Information

Unit convenor and teaching staff
Adam Sikora
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Credit points
10

Prerequisites
Admission to MRes

Corequisites

Co-badged status

Unit description
This unit is designed to engage students with current research in Mathematics. It will introduce students to a number of the current open research questions across the range of the broad discipline. It is the first of a pair of such units, with the second appearing in the second year of the MRes program. This unit addresses research across the breadth of the discipline, while the second unit will focus on more particular issues related to the student's project area.

Activities may include such things as seminar attendance, directed reading of research papers, the discussion and critiquing of research topics and introduction to new practical techniques with preparatory reading, hands-on experience and a final report. Presentation of a seminar and a written report based on the topics examined are required for completion of this unit.

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: Search for current literature in your field, and reference your findings appropriately.

ULO2: Typeset mathematics using LaTeX and BibTeX systems.

ULO3: Write academic mathematics in a clear and logical manner.

ULO4: Present research in your field so that non-experts can understand the work.

Assessment Tasks

Name	Weighting	Hurdle	Due
Seminar/Colloquium Attendance	10%	No	By the end of the semester
Literature review	40%	No	Week 12
Assignment	25%	No	Week 5
Presentation	25%	No	Week 11

Seminar/Colloquium Attendance

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 10 hours
Due: **By the end of the semester**
Weighting: **10%**

Attend the department colloquium throughout the semester and ask the speakers relevant questions.

On successful completion you will be able to:

- Present research in your field so that non-experts can understand the work.

Literature review

Assessment Type [1]: Literature review
Indicative Time on Task [2]: 37 hours
Due: **Week 12**
Weighting: **40%**

Write a review of current literature in your field of research, based on your directed reading.

On successful completion you will be able to:

- Search for current literature in your field, and reference your findings appropriately.
- Typeset mathematics using LaTeX and BibTeX systems.
- Write academic mathematics in a clear and logical manner.

Assignment

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 35 hours
Due: **Week 5**
Weighting: **25%**

Written solutions to exercises based on lecture material, including typesetting examples.

On successful completion you will be able to:

- Typeset mathematics using LaTeX and BibTeX systems.

Presentation

Assessment Type [1]: Presentation
Indicative Time on Task [2]: 20 hours
Due: **Week 11**
Weighting: **25%**

Present current research in your field, based on your directed reading.

On successful completion you will be able to:

- Search for current literature in your field, and reference your findings appropriately.
- Typeset mathematics using LaTeX and BibTeX systems.
- Present research in your field so that non-experts can understand the work.

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[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

George Gr□atzer, More math into LaTEX. 4th ed. , 4th ed., New York, NY: Springer, 2007 (English).

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.