MATH7906

Research Topics in Mathematics 3

Session 2, Special circumstance 2020

Department of Mathematics and Statistics

Contents

Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
Convenor, lecturer
Stuart Hawkins
stuart.hawkins@mq.edu.au

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.
ULO3: Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
ULO2: Apply advanced mathematical skills to related areas of mathematics or other disciplines.
ULO4: Communicate effectively the results of advanced mathematical reasoning.

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment 4	25%	No	Week 12

Name	Weighting	Hurdle	Due
Assignment 1	25%	No	Week 3
Assignment 2	25%	No	Week 6
Assignment 3	25%	No	Week 9

Assignment 4

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 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.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Communicate effectively the results of advanced mathematical reasoning.

Assignment 1

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 10 hours
Due: **Week 3**
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.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Communicate effectively the results of advanced mathematical reasoning.

Assignment 2

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 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.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Communicate effectively the results of advanced mathematical reasoning.

Assignment 3

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 10 hours
Due: **Week 9**
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.
- Use abstract mathematical frameworks to synthesize diverse examples or phenomena from within a particular area of mathematics.
- Apply advanced mathematical skills to related areas of mathematics or other disciplines.
- Communicate effectively the results of advanced mathematical reasoning.

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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

There will be a two-hour lecture each week.

The following text may be helpful:

- Lord, Powell and Shardlow. An Introduction to Computational Stochastic PDEs. Cambridge. ISBN 0521899907

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 help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- 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

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

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

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.