



WMAT123

Mathematics 123

MUIC Term 5 2016

Macquarie University International College

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Disclaimer

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General Information

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

This unit introduces students to a range of mathematical techniques from algebra and calculus. Its focus is on the modern application of these ideas, with a particular emphasis on applications to problems in economics, business and finance, and provides a sound mathematical basis for further study in these areas. Topics include algebra relevant to basic financial mathematics, the development of the techniques of differentiation and integration with applications to constrained and unconstrained optimisation, including multivariable cases, and the development and application of a variety of useful approximation techniques. A key focus of the unit is the development of a clear understanding of the role that mathematics plays in modern society, and the development of a sound grasp of how mathematics is used to provide sophisticated modelling of complex real problems. While the mathematical content of this unit has considerable overlap with the mathematical content of MATH130, the flavour with which the material is presented is such that this unit is the appropriate choice for economics, business and finance students, while students who wish to pursue study in science will be better served by studying MATH130.

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:

Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.

Apply logical arguments and recognise any gaps or faults in such arguments.

Apply mathematical concepts and techniques to finance, economics, and the sciences.

Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.

Work effectively and responsibly in individual and team contexts.

Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

General Assessment Information

Requirements to Pass

In order to pass this unit a student must obtain a mark of 50 or more for the unit (i.e. obtain a passing grade P/ CR/ D/ HD).

For further details about grading, please refer to [Schedule 1](#) of the [Assessment Policy](#).

Grading

The College will award common result grades as specified in [Schedule 1](#) of the [Assessment Policy](#).

Students will receive criteria and standards for specific assessment tasks, which will be aligned with the grading descriptors given in [Schedule 1](#).

The attainment (or otherwise) of learning outcomes for a unit of study will be reported by grade and mark which will correspond to the Schedule 1 and be as outlined below.

Grade		Mark Range	Outcome	Description
HD	High Distinction	85-100	Pass	Provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality, insight or creativity in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application as appropriate to the program.
D	Distinction	75-84	Pass	Provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality or creativity in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the program and the audience.
CR	Credit	65-74	Pass	Provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; convincing argumentation with appropriate coherent justification; communication of ideas fluently and clearly in terms of the conventions of the program.
P	Pass	50-64	Pass	Provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the program; routine argumentation with acceptable justification; communication of information and ideas adequately in terms of the conventions of the program. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.
F	Fail	0-49	Fail	Does not provide evidence of attainment of learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; missing, undeveloped, inappropriate or confusing argumentation; incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the program.
FA			Did Not Attend	Student has failed the compulsory attendance component of assessment

Final Grades not receiving a mark because the student has withdrawn after the Census Date, not submitted or completed one or more components of the assessment, has been awarded a supplementary assessment or because of an unresolved matter such as allegations of academic misconduct are outlined in [Schedule 1](#).

Where to find information about assessment

General assessment information including the number and nature of assessments, due dates and weightings has been provided in this unit guide.

Specific assessment information including assignment instructions, questions, marking criteria and rubrics as well as examples of relevant and related assessment tasks and responses will be available in the Assessment section on iLearn. For units that have final examinations, students may access past final exam papers using [MultiSearch](#).

Student Responsibilities

As per the [Assessment Policy](#), students are responsible for their learning and are expected to:

- actively engage with assessment tasks, including carefully reading the guidance provided, understanding criteria, spending sufficient time on the task and submitting work on time;
- read, reflect and act on feedback provided;
- actively engage in activities designed to develop assessment literacy, including taking the initiative where appropriate (e.g. seeking clarification or advice, negotiating learning contracts, developing grading criteria and rubrics);
- provide constructive feedback on assessment processes and tasks through student feedback mechanisms (e.g. student surveys, suggestions for future offerings, student representation on committees);
- ensure that their work is their own; and
- be familiar with University policy and College procedures and act in accordance with those policy and procedures.

Submission of Assessment Tasks

Assessments must be submitted in accordance with instructions provided in this unit guide.

Assessment tasks which have not been submitted as required will not be marked; they will be considered a non-submission and zero marks will be awarded for the task.

Extensions & Late Submissions

Extensions will only be granted as a result of a Disruptions to Studies Notification for which special consideration has been awarded. To apply for an extension of time for submission of an assessment item, students must submit their Disruptions to Studies notification via [ask.mq.edu.au](#).

Late submissions without an approved extension are possible but will be penalised at 20% per

24 hour period or thereof up to 4 days (weekend inclusive).

Example: An assignment is due at 5:00 pm on a Friday and is marked out of 100 marks.

- If a student submits at 5:02 pm on the Friday and no Disruptions to Studies or special consideration is granted, a penalty of 20% of the total marks possible (20 marks) will be deducted from their result.
- If the student submits the assignment on Sunday and no Disruptions to Studies or special consideration is granted, then a penalty of 40% (40 marks) will be deducted and so on.
- If a student submits an assessment task 5 or more days after the due date and no Disruptions to Studies or special consideration is granted, a record or submission will be made but the student will receive zero marks for the assessment task.

Retention of Originals

It is the responsibility of the student to retain a copy of any work submitted. Students must produce these documents upon request. Copies should be retained until the end of the grade appeal period each term.

In the event that a student is asked to produce another copy of work submitted and is unable to do so, they may be awarded zero (0) for that particular assessment task.

Requests for original documentation will be sent to the applicant's student email address within six (6) months of notification by the student. Students must retain all original documentation for the duration of this six (6) month period and must supply original documents to the University within ten (10) working days of such a request being made.

Final Examinations

Final examinations will typically take place or be due in Week 6 or Monday of Week 7. For unit specific details please refer to Assessment section of this unit guide.

All students must be available up until and including Monday of Week 7 to undertake final examinations.

The University will publish [College Final Examination Timetable](#) at least 4 weeks before the commencement of the final examination period and students will be able to access their final examination schedule in Week 3 of the Term.

Final Examination Requirements

As per Schedule 4 of the Assessment Policy, students will be responsible for:

- checking the final examination timetable
- knowing the examination location (including seat number allocation) and arriving at allocated examination venue on time.
- knowing the structure and format of the examination

- adhering to the final examination timetable
- ensuring they are available for the full duration of the final examination period and supplementary examination period.

Details of the structure and format of the final examination paper will be made available to students prior to the start of the final examination period. This detail will include:

- a copy of the examination coversheet, giving the conditions under which the examination will be held
- information on the types of questions the examination will contain, and
- an indication of the unit content the paper may examine.

Students must follow directions given by the Final Examination Supervisor.

Students will be required to present their Macquarie University Campus Card as photographic proof of identity for the duration of the final examination.

Students are not permitted to:

- enter a final examination venue once one hour from the time of commencement (excluding any reading time) has elapsed
- leave a final examination venue before one hour from the time of commencement (excluding any reading time) has elapsed
- leave a final examination venue during the last 15 minutes of the examination
- be readmitted to a final examination venue unless they were under approved supervision during the full period of their absence
- obtain, or attempt to obtain, assistance in undertaking or completing the final examination script
- receive, or attempt to receive, assistance in undertaking or completing the final examination script (Unless an application for reasonable adjustment has been approved)
- communicate in any way with another student once they have entered the final examination venue

Missed assessments and examinations

The University recognises that students may experience unexpected events and circumstances that adversely affect their academic performance in assessment activities, for example illness.

In order to support students who have experienced a serious and unavoidable disruption, the University will provide affected students with an additional opportunity to demonstrate that they have met the learning outcomes of a unit. An additional opportunity provided under such circumstances is referred to as special consideration.

In order to be eligible for special consideration students must submit Disruption to Studies Notification via ask.mq.edu.au within five (5) working days of the commencement of the

disruption and attach appropriate supporting [evidence](#).

Where special consideration is granted the student will be given an additional opportunity to demonstrate that they have met the learning outcomes of a unit in the form of an alternative or supplementary assessment task or extension.

Please refer to the [Disruption to Studies Policy](#) or the Disruptions to Studies section under Policies and Procedures below.

Supplementary Examinations

The supplementary examination period will span across Week 7 of the Term and Week 1 of the subsequent teaching term. Students who have lodged a Disruptions to Studies must be available to undertake examinations during the supplementary examination period.

Results for supplementary exams may not be available for up to two weeks following the supplementary examination. Students in their final term of study who undertake supplementary final exams should note that formal completion of their Program will not be possible until supplementary results are released and this may impact on their ability to enrol in subsequent programs of study on time.

Accessing your Results

Students will be able to view their results for internal assessments via the Grades section in [iLearn](#).

Grades (e.g. HD, D, CR, P, F) for all assessment tasks will be released to students once marking has concluded. Marks for individual assessments may be released as well.

Final results for the unit will be released at 00:01 on Friday of Week 7. Students will be able to view their final result for the unit via [eStudent](#).

Calculating your GPA

A Grade Point Average (GPA) is a calculation that reflects the overall grades of a student in a coursework program. Please refer to the [GPA Calculator](#).

Obtaining Feedback

Teaching staff will provide students with feedback about their academic progress and performance in assessment tasks or a unit of study. Where relevant, other staff such as Senior Teachers, Program Managers and members of the Student Administration and Services Team will provide feedback and advice to students about their performance in a program of study. Feedback may be provided to individual students, a group of students or a whole class and it may be written or verbal in nature.

Some examples of feedback include:

- Teaching staff member reviewing a draft submission and giving a student advice on how to improve their work before making a final submission
- Teaching staff member telling a class that they need to improve their editing of grammar in their recently submitted assignment.

- Teaching staff member discussing progress of an individual student before census date to allow the student to decide whether they should remain enrolled in the unit.
- Online feedback via announcements or forums, an online marking rubric or various iLearn activities employed in a unit
- Written marks and comments on a marking sheet or essay.
- Recorded voice comment provided in response to an essay submitted online.
- Student Services officer telling a student that they should consider withdrawing from a unit because they have missed too many classes to be able to catch up.

It is a student's responsibility to act promptly on feedback and advice provided.

If you are unsure how feedback has been or will be provided, or you feel that feedback provided is not sufficient, you must approach relevant teaching or administrative staff and request additional feedback in a timely manner during the term. Students may seek general feedback about performance in a unit up to 6 months following results release.

Contacting Teaching Staff Obtaining Help

Students may contact teaching staff at any time during the term by using the contact details provided in this guide. Students should expect a response within 1-2 business days. Teaching staff are unable to accept assessment submissions via email, all assessments must be submitted as outlined in the unit guide.

For all university related correspondence, students must use their official Macquarie University student email account which may be accessed via the [Macquarie University Student Portal](#). Inquiries from personal email accounts will not be attended to.

Academic Honesty

Using the work or ideas of another person, whether intentionally or not, and presenting them as your own without clear acknowledgement of the source is called [Plagiarism](#).

Macquarie University promotes awareness of information ethics through its [Academic Honesty Policy](#). This means that:

- all academic work claimed as original must be the work of the person making the claim
- all academic collaborations of any kind must be acknowledged
- academic work must not be falsified in any way
- when the ideas of others are used, these ideas must be acknowledged appropriately.

All breaches of the [Academic Honesty Policy](#) are serious and [penalties](#) apply. Students should be aware that they may fail an assessment task, a unit or even be excluded from the University for breaching the Academic Honesty Policy.

Turnitin

To uphold principles of Academic Honesty, Macquarie University employs online anti-plagiarism Software called [Turnitin](#). Turnitin compares electronically submitted papers to a database of

academic publications, internet sources and other student papers that have been submitted to the system to identify matching text. It then produces an Originality Report which identifies text taken from other sources, and generates a similarity percentage. Teaching staff will use the report to judge whether plagiarism has occurred and whether penalties should apply for breaches of the Academic Honesty Policy.

All text based assessments must be submitted through Turnitin as per instructions provided in the unit guide. It is the student's responsibility to ensure that work is submitted correctly prior to the due date. No hard copies of assessments will be accepted and only Turnitin records will be taken as records of submission.

Multiple submissions may be possible via Turnitin prior to the final due date and time of an assessment task and originality reports may be made available to students to view and check their work.

There is no set percentage which indicates whether plagiarism has occurred; all identified matching text should be reconsidered carefully. If plagiarism has occurred or is suspected and resubmission is possible prior to the due date, students are advised to edit their work before making a final submission. Help may be sought from teaching staff. Students may also access [research resources](#) provided by the library or [Learning Skills](#).

Students should note that the system will not immediately produce the similarity score on a second or subsequent submission - it will take 24-36 hours for the report to be generated. This may be after the due date so students should plan any resubmissions carefully.

Please refer to these instructions on [how to submit your assignment through Turnitin](#) and access similarity reports and feedback provided by teaching staff.

Should you have questions about Turnitin or experience issues submitting through the system, you must inform your teacher immediately. If the issue is technical in nature may also lodge a [On eHelp](#) Ticket, refer to the [IT help page](#).

Assessment Tasks

Name	Weighting	Due
Three assignments	30%	Wk2, Wk4, Wk5
Class Test	15%	Week 3, Lesson 4
Group Work Video	10%	Week 6, Monday, 9 am
Final examination	45%	Week 6 or Monday week 7

Three assignments

Due: **Wk2, Wk4, Wk5**

Weighting: **30%**

There are three assignments in this unit. Each assignment has ten questions, which will be released in iLearn. The students will submit an electronic copy of their solutions to the link provided in iLearn. Students can submit scanned copies of their hand-written work. These are individual tasks.

The first assignment (worth 10%) is released in Week 1, Lesson 2 and the students are expected to submit their responses by Week 2, Lesson 2.

The second assignment (worth 10%) is released in Week 3, Lesson 2 and the students are expected to submit their responses by Week 4, Lesson 2.

The third assignment (worth 10%) is released in Week 4, Lesson 2 and the students are expected to submit their responses by Week 5, Lesson 2.

Feedback will be provided in class.

Please refer to late submission section above.

On successful completion you will be able to:

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.
- Work effectively and responsibly in individual and team contexts.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Class Test

Due: **Week 3, Lesson 4**

Weighting: **15%**

The class test is designed and graded with a view to assessing written responses and mathematical language, and is an individual assessment task. The duration of the test is 50 minutes and its weighting is 15%. The test is paper-based and will be held during the scheduled lesson time in Week 3, Lesson 4.

Please refer to late submission section above.

On successful completion you will be able to:

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Work effectively and responsibly in individual and team contexts.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Group Work Video

Due: **Week 6, Monday, 9 am**

Weighting: **10%**

This is a group task. Students will be allocated in groups in class during Week 4. They will produce a 5-7 minute video on any mathematical conception relevant to the work of WMAT123. This could include an economic model, or a more in-depth analysis of a topic treated in the unit. Students will choose their own topic. The video will be filmed in class with minimal editing required. The students should share research and preparation duties and create a coherent video. Each student should appear in the video and their part in the video should be clearly defined. The video should demonstrate collaboration between the group members. The group video is worth 5% and the remaining 5% is allocated to individual performance of the students.

Students will upload their videos to an online video streaming service, such as YouTube and submit a form which includes their video link via Turnitin in Week 6, Monday, 9 am. The form will be provided in iLearn.

Feedback will be provided via Grademark during Week 7.

Please refer to late submission section above.

On successful completion you will be able to:

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.
- Work effectively and responsibly in individual and team contexts.
- Use discipline specific terminology to communicate concepts and ideas relevant to this

unit.

Final examination

Due: **Week 6 or Monday week 7**

Weighting: **45%**

This is a 2 (two) hours plus ten minutes, closed book, paper-based final exam, and an individual assessment task which covers all topics in the unit.

Students are allowed to bring non-programmable calculators, but calculators may not be shared among students. Please note these will not be provided at the examination venue.

Students are not allowed to bring mobile phones and other electronic devices; notes and course materials; calculators with a “run”, “exe” or “calc” key; graphics calculators; programmable calculators; dictionaries (paper/electronic).

Final examinations will typically take place or be due in Week 6 or Monday of Week 7. Details of the structure and format of the final examination paper will be made available to students prior to the start of the final examination period.

Please refer to late submission section above.

On successful completion you will be able to:

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Work effectively and responsibly in individual and team contexts.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Delivery and Resources

Term Dates & College Calendar

Details of key dates during the term can be found on the [Important Dates](#) calendar.

Enrolment and Timetables

General timetable information is available via Macquarie University's [Timetable page](#).

Students will be able to enrol in units and register for classes via [eStudent](#) and also view their personal timetable. It is the student's responsibility to ensure that classes they have registered for do not clash.

Students are only permitted to attend classes in which they have registered via eStudent, unless they have written approval from the Students Services and Administration Manager. To seek approval, students must email muic@mq.edu.au or speak to a member of the Student Services

and Administration Team at E3A Level 2 Reception. Approval will only be granted in exceptional circumstances.

Swapping groups is not possible after the enrolment period has concluded. The last day to do so is Tuesday of Week 1 and this must be finalised by the student in [eStudent](#) by the end of the day.

Attendance Requirements – All Students

All students are expected to attend 100% of scheduled class time.

Attendance will be monitored in each lesson & students will be able to see their current attendance percentage to date and potential attendance percentage for each unit they have enrolled in via [iLearn](#).

- **Current attendance Percentage** will reflect the percentage of classes a student has attended so far (based only on the lessons held to date).
- **Potential Attendance Percentage** will reflect the percentage of classes a student can potentially attend by the end of the term, taking into consideration lessons attended and assuming the student also attends all future lessons scheduled (based only on the total number of lessons in the Term).

Where a student is present for a part of a lesson (for example arrives late, leaves early, leaves the class frequently or for lengthy periods, engages in inappropriate or unrelated activities or does not participate actively in the majority of the lesson) the teacher reserves the right to mark a student absent for that part of the lesson.

In cases of unavoidable non-attendance due to illness or circumstances beyond their control, students should lodge a [Disruption to Studies](#) Notification via ask.mq.edu.au within 5 working days and supply relevant supporting documentation, even if they have not missed a formal assessment task. This will ensure that that appropriate records of unavoidable absences can be kept.

Public Holidays and Make-up Lessons

If any scheduled class falls on a public holiday a make-up lesson may be scheduled on an alternate day. Attendance will be taken for any scheduled make-up lessons. Where a make-up lesson is scheduled, students will be informed in class and via iLearn.

If appropriate, teaching staff may instead organise an online make-up lesson requiring students to complete additional activities outside of class. Students will be informed of any such arrangements in class and/or via iLearn.

Technology Used and Required

- Access to internet (Available on Campus using Macquarie [OneNet](#) and in designated E3A Self-Access Computer Laboratories)
- [iLab](#) - iLab is Macquarie University's personal computer laboratory on the Internet, enabling students to use the Microsoft Windows applications they require to do their

university work from anywhere, anytime, on anything.

- Access to [iLearn](#)
- Access to Macquarie University [Library catalogue \(MultiSearch\)](#)
- Access to Microsoft Office Suite (available in E3A Self-Access Computer Laboratories and via [iLab](#))

iLearn

[iLearn](#) is Macquarie's online learning management system and a principal teaching and learning resource which will be used throughout the term. Students must access iLearn at least 3 times per week to access important information including:

- Announcements and News Forums - Teaching staff will communicate to the class using iLearn announcements. Announcements may also be emailed to students' Macquarie University email address but students should check the News Forum regularly.
- Attendance – current and potential attendance percentage for the Term.
- Unit Guide and staff contact details
- Set unit readings available through [MultiSerach](#) (library).
- Lesson materials and recordings where available
- Learning and teaching activities and resources, questions and solutions
- Assessment instructions, questions, marking criteria and sample tasks
- Assessment submission links such as Turnitin
- Links to support materials and services available at the University
- Evaluation Surveys for the unit

For any resource related iLearn questions contact your teacher. For any technical or support issues using iLearn, please contact the IT helpdesk (Ph. 02 9850 4357) or lodge a ticket using [OneHelp](#).

Useful Study Resources

[StudyWise](#) is an iLearn resource created by Learning Skills, which is specifically designed to help you to manage your studies, strengthen your study techniques, write effective assignments and improve your English language proficiency. Once you enrol in StudyWISE, you can access it from your iLearn course list under the category "Student Support".

[InfoWise](#) will help you improve your research skills by teaching you how to use MultiSearch, decode citations, identifying key search terms and use advanced search techniques.

[Lib Guides](#) provide students with links to electronic sources and websites that are good starting points for research in different fields or disciplines.

[MultiSerach](#) will connect you to Macquarie University Library and allow you to search library resources, databases, unit readings and past exam papers

[Academic Language and Learning Workshops](#) are designed to help you with Study Skills,

Assignment Writing, Referencing and Academic Language

Research resources provide information about:

- Researching for your assignments
- How to manage your references
- Referencing style guides
- Subject and research guides

Unit Schedule

Week	Algebra	Calculus	
1	Introduction to the Unit Real Numbers Basic Algebra	Graphs and Their Stories The x-y Plane Functions and Lines	
2	Systems of Linear Equations Polynomials and Parabolas Indices and Logarithms	Differentiation Introduction to Differentiation Tangents and Normals Further Techniques of Differentiation Pre-Census Feedback	Assignment 1 is due in Week 2, Lesson 2
3	Linear and Polynomial Equations Exp and log functions	Maxima and Minima and Optimisation Optimisation Applications of Differentiation	Mid-Term Test on Week 3, Lesson 4.
4	Inequalities and Absolute Values Inequalities and Absolute Values	Calculus of Logs and Exponential Functions Integration Introduction to Integration	Assignment 2 is due on Week 4, Lesson 2
5	Progressions Matrices	Lagrange Multipliers Newton's Method	Assignment 3 is due on Week 5, Lesson 2
6	Numerical Integration Revision	Areas Between Curves Differential Equations Revision	Group Work Video is due on Week 6, Lesson 1 Final Examination in the MUIC Final Examination Period.

Learning and Teaching Activities

Lessons

Lessons will include a mixture of learning and teaching activities. New content and topics will be presented in lessons, and students will be given problems, practice questions and other interactive activities to apply the knowledge and the skills gained in the lesson. Students will be required to take notes, complete set class tasks and engage in discussion and individual and group activities. In class, specific time may be dedicated to work on assessment tasks and students will be given guidance and feedback to complete these. Certain lessons may be dedicated to independent research and reading related to the unit whether in the classroom or a computer lab.

Active Participation

Students will be required to not only attend but also actively participate in lessons. Active participation entails: - active engagement in class activities - contribution to class discussions by asking and answering questions - coming to class prepared and having completed required pre-readings and activities - completion of set class and homework activities - collaboration with other students - adhering to Macquarie University Student Codes of Conduct

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of 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/support/student_conduct/

Results

Results shown in *iLearn*, 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.

Academic Honesty

Using the work or ideas of another person, whether intentionally or not, and presenting them as your own without clear acknowledgement of the source is called [Plagiarism](#).

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- all academic collaborations of any kind must be acknowledged
- academic work must not be falsified in any way
- when the ideas of others are used, these ideas must be acknowledged appropriately.

All breaches of the [Academic Honesty Policy](#) are serious and [penalties](#) apply. Students should be aware that they may fail an assessment task, a unit or even be excluded from the University for breaching the Academic Honesty Policy.

Assessment Policy

Students should familiarise themselves with their responsibilities under the [Assessment Policy](#), and notably [Schedule 4](#) (Final Examination Requirements).

Disruptions to studies

The [Disruption to Studies Policy](#) applies only to *serious and unavoidable* disruptions that arise after a study period has commenced. Students with a pre-existing disability/health condition or prolonged adverse circumstances may be eligible for ongoing assistance and support. Such support may be sought through [Campus Wellbeing](#) and [Support Services](#).

The University classifies a disruption as **serious and unavoidable** if it:

- could not have reasonably been anticipated, avoided or guarded against by the student; and
- was beyond the student's control; and
- caused substantial disruption to the student's capacity for effective study and/or completion of required work; and
- occurred during an event critical study period and was at least three (3) consecutive days duration, and / or
- prevented completion of a final examination.

To be eligible for Special Consideration, a student must notify the University of a *serious and unavoidable* disruption within five (5) working days of the commencement of the disruption (Disruption to Studies notification). All Disruption to Studies notifications are to be made online via the University's [Ask MQ](#) system. A Disruption to Studies notification must be supported by documentary [evidence](#).

Students should note that in cases of medical disruptions they must see a [registered healthcare professional](#) and present a [Professional Authority Form](#). Medical certificates will not be accepted. Overseas students may use their OSHC insurance for the purpose of seeing a registered healthcare professional.

In submitting a [Disruption to Studies notification](#), a student is acknowledging that they may be required to undertake additional work. The time and date, deadline or format of any required extra assessable work as a result of a disruption to studies notification is not negotiable and in submitting a disruption to studies notification, a student is agreeing to make themselves available to complete any extra work as required. This means that as a result of special consideration being awarded, a student may be required to complete a different type of assessment for example an exam instead of a presentation or vice versa.

The student will retain all original documentation submitted regarding the disruption, and must understand that this may be requested by the University at any time. In this event, students will be provided 10 business days to submit the original documentation.

Please refer to the [Disruption to Studies Policy](#) for further details.

Final Examination Script Viewings

A student may request to view their final examination script once results have been released but scripts remain the property of Macquarie University.

Students should view their final examination paper prior to submitting a grade appeal, if this is relevant to their case. The viewing will be conducted in a secure location under supervision.

To request a final examination script viewing, please lodge a ticket via ask.mq.edu.au.

Grade Appeals

A student who has been awarded a final grade for a unit has the right to appeal that grade as outlined in the [Grade Appeal Policy](#). Grade appeals apply to the final mark and grade a student receives for a unit of study. They do not apply to results received for individual assessment tasks.

Grade appeals must be submitted via ask.mq.edu.au within 20 working days from the published result date for the relevant unit. Before submitting a Grade Appeal, please ensure that you read the [Grade Appeal Policy](#) and note valid grounds for appeals.

Students are expected to seek feedback on individual assessment tasks prior to the award of a final grade. Students also have the right to request generic feedback from the teaching staff on their overall performance in the unit, including in a final examination. This can be done at any time in the six month period starting from the day on which the final grade of the relevant unit is published.

Course Progression

The College closely monitors Foundation students' academic progress as per the [Progression Policy](#) for Programs delivered by Macquarie University International College.

To maintain Satisfactory Academic Progress, a student must successfully complete (pass) 50% or more of their enrolled units in a Term of study. To successfully complete a unit, students must obtain a passing grade and meet any other requirements to pass listed in the unit guide.

Students who fail to make Satisfactory Academic Progress will be classified as "at risk" and will be notified in writing. At-risk students may be required to undergo academic counselling, undertake certain initiatives or have conditions placed upon their enrolment to help them make satisfactory progress.

Students must also pass 50% or more of the units in 2 or more terms in order to meet Minimum Rate of Progress (MRP) requirements. A student is deemed not to be making Minimum Rate of Progress if they fail more than 50% of their enrolled units in two consecutive Terms of study, or if they have failed more than 50% of their units after studying two or more terms.

Any domestic student who has been identified as not meeting Minimum Rate of Progress requirements will be issued with an Intention to Exclude letter and may subsequently be excluded from the program.

Any international student who has been identified as not meeting MRP will be issued with an Intention to Report letter and may subsequently be reported to the Department of Immigration and Border Protection (DIBP) for not meeting visa requirement and be subject to exclusion from the program. International students must comply with the [MUIC Progress Policy](#) in order to meet the conditions of their visa.

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 improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

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

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.

Graduate Capabilities

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Work effectively and responsibly in individual and team contexts.

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.

Assessment tasks

- Class Test
- Final examination

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them

competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- Three assignments
- Class Test
- Group Work Video
- Final examination

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- Three assignments
- Class Test
- Final examination

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Solve problems, including formulating a precise mathematical question from a "real world" problem and identifying and applying appropriate mathematical techniques.
- Apply logical arguments and recognise any gaps or faults in such arguments.
- Apply mathematical concepts and techniques to finance, economics, and the sciences.
- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- Three assignments
- Class Test
- Group Work Video
- Final examination

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- Apply logical arguments and recognise any gaps or faults in such arguments.
- Work effectively and responsibly in individual and team contexts.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- Three assignments
- Group Work Video

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcomes

- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.
- Work effectively and responsibly in individual and team contexts.

Assessment task

- Group Work Video

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcomes

- Apply ethical, social and environmental issues relating to professional mathematical work, identify and address issues arising in such professional work and make ethical decisions while collecting and analysing data and reporting findings.

- Work effectively and responsibly in individual and team contexts.

Course Contact Hours

Weekly face to face contact for this unit will be 11 hours (66 hours per term).

There will be 6 lessons per week consisting of 4 x 2 hour lessons and 1 x 3 hour lesson.

Unit Specific Texts and Materials

The **main** recommended **texts** for this unit is

- Jacques: *Mathematics for Economics and Business*, 8th edition (**ISBN-10:** 129207423X **ISBN-13:** 978-1292074238)
- [Stitz and Zeager: *Precalculus Version \$\pi\$ = 3*, Corrected Edition](#)

The Jacques textbook is available for purchase from the [Co-Op Bookshop](#) located in the Campus Hub Building C10A, Level One, Phone: 8986 4000.

The Stitz and Zeager text is available online at the link provided above.

The same material is covered in many texts. You should try several of these, adopting one which suits your personal style of learning.

The following text is also recommended for this unit and is in the reference section of the Library.

- Hughes-Hallett and Gleason; *Calculus: single and multivariable*, 6th edition (ISBN-13: 978-1118318843 ISBN-10: 1118318846)

Other similar texts are available in the Library, and for reference in the Numeracy Centre (C5A 225).

Technology Used and Required

Students are expected to have access to an internet enabled computer with a web browser and Adobe Reader software. Several areas of the university provide wireless access for portable computers. The free software *Geogebra* can be downloaded from <https://www.geogebra.org/download> It is an excellent and simple to use addition to your Windows, Macintosh or Linux computer. The on line graphics calculator *desmos* is also useful. The address is <https://www.desmos.com> Microsoft Excel or its Macintosh equivalent Numbers or gnuplot for all platforms are also useful. There are computers for student use in the Library and in the [Numeracy Centre](#) (C5A 255).

In order to complete the group work video assessment task, students will need access to a device capable of recording video and audio, such as a smartphone or computer with a webcam. Students who do not have access to such devices will be assisted in joining a group that does.