



WFMA003

Mathematics 3

MUIC Term 2 2016

Macquarie University International College

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Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

The purpose of Mathematics 3 is to provide the background necessary to study science based subjects or business subjects which require some applications of mathematics such as actuarial studies or science/engineering and to prepare the student for first year mathematics courses such as MATH135. The course places a strong emphasis on developing spoken and written mathematical communication skills. Topics covered include series with finance application, differential and integral calculus.

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:

Describe the relevance of mathematics in everyday life.

Use fundamental discipline specific terminology to express concepts and ideas related to

Mathematics.

Demonstrate mathematical thinking in solving practical problems involving differentiation.

Demonstrate mathematical thinking in solving practical problems involving integration.

Demonstrate mathematical thinking in solving practical problems involving series and sequences.

General Assessment Information

Requirements to Pass

In order to pass this unit a student must:

- Attempt all assessment tasks
- Pass the final examination or final assessment task
- Achieve a Standard Numerical Grade (SNG) of 50 or more in the unit
- Attend at least 80% of scheduled classes

For further details about grading, please refer to the [Grading Policy](#).

Submission of Assessment Tasks

A student must attempt all assessment tasks in order to be able to pass this unit. Assessments must be submitted following instructions provided in class. 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.

Turnitin

Turnitin compares electronically submitted papers to a database of academic publications, internet sources and other papers that have been submitted into the system to identify matching text. It then produces an Originality Report which identifies text taken from other sources, and generates a similarity percentage to judge whether plagiarism has occurred (see Academic Honesty section below).

Multiple submissions may be possible via Turnitin prior to the due date of an assessment and originality reports may be made available to students. In such cases they should be used to check work for plagiarism prior to a final submission. As a general guideline, a similarity percentage of below 15% will probably indicate that plagiarism has not occurred. However, if there is a matching block of text then this could be considered plagiarism unless it has been correctly referenced.

Where there is a requirement for assessment tasks to be submitted through Turnitin, it is the student's responsibility to ensure that work is submitted correctly prior to the due date. Hard copies will not be accepted unless indicated otherwise by a teaching staff member. Records in Turnitin will be taken as records of submission. For assistance submitting through Turnitin, you may approach your teacher, lodge a [OneHelp](#) Ticket, refer to the [IT help page](#) or seek assistance from [Student Connect](#).

Students should note that for a first time submission the Originality Report will be available immediately post submission but for any subsequent submissions it will take 24 hours for the report to be generated. This may be after the due date so students should plan their submission carefully.

Missed Assessments

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.

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](#).

Serious and Unavoidable Disruption 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](#).

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.

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

Extensions & Late Submissions

To apply for an extension of time for submission of an assessment item, students must submit a Disruptions to Studies notification via ask.mq.edu.au.

Late submissions without an approved extension are possible but will be penalised at 20% per day up to 4 days (weekend inclusive). If a student submits an assessment task 5 or more days after the due date without grounds for special consideration (See [Disruptions to Studies Policy](#)) a record or submission will be made but the student will receive zero marks for the assessment task.

Final Examinations and Final Assessment Tasks

Final exams and final assessments will typically take place in Week 6 or Monday of Week 7. All students enrolled in a teaching session are expected to ensure they are available up until and including Monday of Week 7 to undertake examinations. Passing the final exam or final assessment task is a requirement to pass this unit.

Details of teaching session dates can be found on the [Important Dates](#) calendar. Dates for any final examinations and assessment tasks will be provided in the Unit Guide Teaching Schedule.

Planning for an exam is very important. All students should be familiar with the [Exam Rules](#). In addition, students should refer to the below links for other important examination related information.

- [Talk to your lecturer](#)
- [Revision tips](#)
- [What to bring with you](#)
- [What not to bring with you](#)
- [Where to get help](#)
- [Tips for Success](#)

It is not uncommon for students to have two consecutive examinations in one day.

Conduct During Assessments and Examinations

Students must adhere to the [Student Code of Conduct](#) and [Academic Honesty Policy](#) at all times.

Students will be provided with instructions relating to conduct during in-class assessment tasks. For all examinations, students will be required to:

- provide their Macquarie University Campus Card as photographic proof of identity for the duration of the examination. This must be visible at all times during the examination.
- leave mobile phones, electronic devices, bags, computers, notes, books and similar items outside a final examination venue or in a designated space
- ensure any water brought into the examination room is in a clear and unmarked bottle

- obey all instructions provided by an Examination Supervisor
- refrain from communicating in any way with another student once they have entered the examination venue.

Students are NOT permitted:

- into an examination venue once one hour from the time of commencement (excluding any reading time) has elapsed
- to leave an examination venue *before* one hour from the time of commencement (excluding any reading time) has elapsed
- to be readmitted to an examination venue unless they were under approved supervision during the full period of their absence
- to obtain or attempt to obtain assistance in undertaking or completing the examination script
- to receive or attempt to receive assistance in undertaking or completing the examination script.

Students should also ensure they follow all requirements of the [Final Examination Policy](#).

Supplementary Examinations

Supplementary final examinations are held during the scheduled Supplementary Final exam Period. This may fall in Week 7 or within the first week of the next teaching term. 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 the Foundation 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.

Retention of Originals

It is the responsibility of the student to retain a copy of any work submitted and produce another copy of all work submitted if requested. 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.

The University may request and retain the originals of any documentation or evidence submitted to support notifications of disruptions to studies. 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.

Contacting Teaching Staff and Obtaining Help and

Feedback

Students may contact teaching staff at any time during the term by using the contact details provided in this guide or using the "Contact your teacher" tool provided in Week 0 of the respective unit in [iLearn](#).

For all university related correspondence, students are required to 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.

Information on how and when students will receive feedback for individual assessment tasks has been provided in this unit guide.

Students may seek additional feedback at any time during the term and general feedback about their performance in a unit up to 6 months following results release.

Assessment Tasks

Name	Weighting	Due
Diagnostic Test	0%	Week 1
Quiz	20%	Week 2
Test	40%	Week 4
Exam	40%	Week 6

Diagnostic Test

Due: **Week 1**

Weighting: **0%**

This test will be used to establish your current level of mathematical skill and to identify areas which need address during the course. The diagnostic test will not count towards your final result for this unit.

This Assessment Task relates to the following Learning Outcomes:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.

On successful completion you will be able to:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.

Quiz

Due: **Week 2**

Weighting: **20%**

Multiple Choice test which will cover all work done in the first 2 weeks of the course.

This Assessment Task relates to the following Learning Outcomes:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

On successful completion you will be able to:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

Test

Due: **Week 4**

Weighting: **40%**

This class test will cover all work done in the first 4 weeks of the course.

This Assessment Task relates to the following Learning Outcomes:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

On successful completion you will be able to:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

Exam

Due: **Week 6**

Weighting: **40%**

Final exam will cover all work done in the term.

This Assessment Task relates to the following Learning Outcomes:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

On successful completion you will be able to:

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

Delivery and Resources

Scheduled Class Time & Timetables

Weekly face to face contact for this unit will be 10 hours consisting of four 2.5 hour lessons (60 hours per term).

Students will be able to enrol in their classes and view their personal timetable via eStudent and may also view general timetable information via Macquarie University's Timetable page.

Attendance Requirements - All students

All students are required to attend at least 80% of scheduled class time to pass this unit. Attendance will be monitored in each lesson & students will be able to see their attendance records for a unit via iLearn.

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.

Because of the intensive nature of this program, students should be aware that their attendance in this unit will fall to 80% when they miss 12 hours of class time (4.8 lessons) without justifiable grounds. If attendance drops below 80%, the student will not be able to pass the unit.

Where a student is at risk of not meeting the 80% attendance requirement this unit, they will be alerted in writing or counselled by the teaching or administrative staff and may be advised to withdraw from the unit.

In cases of unavoidable non-attendance due to illness or circumstances beyond control, students should lodge a Disruption to Studies Notification via ask.mq.edu.au 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 made on their student record.

For further information on attendance, please refer to the Attendance and Study Load Policy.

Attendance requirements - International Students

International students must also attend at least 80% of scheduled class time for all the units they are taking in a Term in order to meet the conditions of their visa. The table below shows how a an international student's attendance would drop as a result of missing different amounts of class time:

Attendance	Student Enrolled in 2 units	Student Enrolled in 1 unit
100%	Attends all classes	Attends all classes
90%	Misses 12 hours of classes	Misses 6 hours of classes
85%	Misses 18 hours of classes	Misses 9 hours of classes
80%	Misses 24 hours of classes	Misses 12 hours of classes

Where an international student is at risk of not meeting the 80% attendance requirement across their enrolled units, they will be counselled by administrative staff. Once an international student fails to meet the 80% attendance requirement across their units in a term, they may be reported

to the Department of Immigration and Border Protection (DIBP) for non-attendance and their visa may be cancelled.

In cases of unavoidable non-attendance due to illness or circumstances beyond control, students should lodge a Disruption to Studies Notification via ask.mq.edu.au and supply relevant supporting documentation, even if they have not missed a formal assessment task. This will ensure that appropriate records of unavoidable absences can be made on their student record.

For further information on attendance, please refer to the Attendance and Study Load Policy.

iLearn

iLearn is Macquarie's online learning management system and a principal resource which will be used throughout the term. Students should access iLearn at least 3 times per week as it will contain important information including:

- Announcements - Teaching staff will communicate to the class using
- iLearn announcements.
- Staff contact details
- Lecture notes and recordings
- Learning and teaching activities and resources
- Assessment information
- Tutorial questions and solutions
- Assessment submission tools such as Turnitin
- Other relevant material

For any technical or support issues using iLearn, please contact the IT helpdesk (Ph. 02 9850 4357) or lodge a ticket using OneHelp.

Required and Recommended Texts and Materials

Prescribed Text(s)

There are no prescribed texts for this unit. Students will be issued with a reader which will contain relevant content and exercises. Links to other useful materials will be provided on iLearn.

Technology Used and Required

- Access to internet (Available on Campus using Macquarie OneNet)
- Access to iLearn
- Access to Macquarie University Library catalogue
- Access to Microsoft Office Word and Excel (available in Labs)

Unit Schedule

Week	Topic/Content	Assessment Task
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1	<ul style="list-style-type: none"> • Introduction • Financial maths – quick overview of simple interest, compound interest, and annuity. • More in depth discussion on loan repayment. • Revision of lesson 2 and 3. 	Diagnostic Test
2	<ul style="list-style-type: none"> • Quick overview of elementary differential calculus – First principle, chain rule, product rule and quotient rule. • Derivatives of exponential and logarithmic functions. • Derivatives of trigonometry function (radian measure) and inverse trigonometry functions. • Revision for quiz 	Quiz
3	<ul style="list-style-type: none"> • Sketching graphs using differentiation. • Finding and sketching primitive functions, using integration to find areas and volumes for polynomial functions only. • approximation methods - Simpson's rule and trapezoidal rule. Integration of exponential and logs. • Integration of trigonometry and inverse trigonometry function 	
4	<ul style="list-style-type: none"> • Integration techniques – integration by substitution. • Integration by parts. • Reduction formulae. • Revision for class test. 	Class Test
5	<ul style="list-style-type: none"> • Integral calculus (partial fraction) • Properties of integrals - e.g. odd/even function , etc • Mixture integration practice. 	
6	<ul style="list-style-type: none"> • Revision 	Final Exam

Learning and Teaching Activities

Scheduled Classes

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. Case studies and real life scenarios will be studied and the course focus is on transforming students into independent thinkers and problem solvers. 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. Attendance of all scheduled classes is compulsory (see attendance Policy below). Students must attend at least 80% of scheduled classes in order to meet visa requirements and pass the unit (see additional requirements to pass in Assessment section above).

Extension Activities

In addition to the units a student is enrolled in, they are required to complete extension activities each term. Extension activities are an integral and compulsory part of the Foundation Program. Students cannot successfully complete the Foundation Program without completing Extension Activities. Extension Activities will be made available to students via iLearn and will involve a range of tasks which may be academic in nature or more broadly related to participation within the University. Some tasks will be completed and submitted online while others may require students to attend workshops and other activities within the University. Students do not need to enrol in extension activities, they will automatically be given access to the relevant module in each Term. If you do not have access to your extension activities module in iLearn, please log a OneHelp ticket via ask.mq.edu.au. Extension activities must be completed by 5 pm Monday Week 6. It is very important that students complete extension activities in a timely manner. Some activities will only be available during specified periods of time and others may not be available until certain tasks have been completed. Student progress with extension activities will be monitored throughout the term. If you require assistance with extension activities, please contact the supervisor whose details have been provided in the extension activities module in iLearn. Students who fail to complete extension activities by 5 pm Friday Week 6 will receive incomplete grades for any other units they are undertaking unless grounds for special consideration exist. This may mean that a student is unable to graduate (complete the Foundation Program) or calculate their current GPA. The student will need to undertake the same Extension Activity Module again in a subsequent Term and redo activities already completed as these will not carry across to the new module. It may also mean that they require additional Terms to complete their program.

Make-up lessons

If any scheduled class falls on a public holiday a make-up lesson may be scheduled, usually on a Wednesday. Where appropriate, the instructor may instead organise an online make-up lesson which would require students to access online learning materials and/or complete activities outside of class rather than attending a make-up lesson. Scheduled make-up days will be announced in class and attendance is taken for both for face to face and online make-up lessons.

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.

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

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

Learning outcomes

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

Assessment tasks

- Diagnostic Test
- Quiz
- Test
- Exam

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

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.

- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
- Demonstrate mathematical thinking in solving practical problems involving series and sequences.

Assessment tasks

- Diagnostic Test
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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

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
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Assessment tasks

- Diagnostic Test
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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

- Describe the relevance of mathematics in everyday life.
- Use fundamental discipline specific terminology to express concepts and ideas related to Mathematics.
- Demonstrate mathematical thinking in solving practical problems involving differentiation.
- Demonstrate mathematical thinking in solving practical problems involving integration.
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Assessment tasks

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Changes since First Published

Date	Description
07/03/2016	updated staff details
20/02/2016	Added Teaching staff and information about extension activities.