TEP 429

Mathematics in the Secondary School I

S1 Day 2019

Department of Educational Studies

Contents

General Information

Unit convenor and teaching staff
Unit Convenor
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Credit points
3

Prerequisites
EDUC258 and TEP388

Corequisites
TEP401

Co-badged status

Unit description
This unit provides an introduction to the secondary Mathematics curriculum and its teaching. There are three main themes: understanding the central concepts of school algebra; teaching methods, including unit planning and the role of technology in Mathematics education; and practical and professional issues arising from students' concurrent professional experience in TEP401. Particular emphasis is given to learning and teaching Mathematics in Years 7 to 10. Please consult the Secondary TEP Guide for recommended prior studies.

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:

1. Demonstrate knowledge of the content of Stages 4 and 5 mathematics of the current NSW 7-10 syllabus and impending NSW syllabus for the Australian Curriculum
2. Demonstrate understanding of a range of teaching strategies related to the content of Stages 4 and 5 of the mathematics syllabuses
3. Implement teaching strategies for using ICT that engage students in their learning
4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts

5. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet specific learning needs of students across a range of backgrounds and abilities
6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities
7. Explore educational ideas through action research
8. Develop communication skills

General Assessment Information

Assessment Presentation and Submission Guidelines

Please follow these guidelines when you submit each assignment:

- Allow a left and right-hand margin of at least 2cm in all assignments.
- Please type all assignments using 12-point font and 1.5 spacing.
- All assessments must be submitted through Turnitin in .doc or .pdf format
- It is the responsibility of the student to ensure that all assessments are successfully submitted through Turnitin.
- Faculty assignment cover sheets are NOT required.

Draft Submissions & Turnitin Originality Reports

- Students may use Turnitin's Originality Report as a learning tool to improve their academic writing if this option is made available in the unit.
- Students are strongly encouraged to upload a draft copy of each assessment to Turnitin at least one week prior to the due date to obtain an Originality Report.
- The Originality Report provides students with a similarity index that may indicate if plagiarism has occurred. Students will be able to make amendments to their drafts prior to their final submission on the due date.
- Generally, one Originality Report is generated every 24 hours up to the due date.

Please note:

- Students should regularly save a copy of all assignments before submission,
- Students are responsible for checking that their submission has been successful and has been submitted by the due date and time.

Assignment extensions and late penalties

- In general, there should be no need for extensions except through illness or misadventure that would be categorised as serious and unavoidable disruption according to the University definition of same, see: https://students.mq.edu.au/study/my-

study-program/special-consideration

Applications for extensions must be made via AskMQ according to the Special Consideration policy. Extensions can only be granted if they meet the Special Considerations policy and are submitted via https://ask.mq.edu.au/. This will ensure consistency in the consideration of such requests is maintained.

- Late submissions without extension will receive a penalty of 5% reduction of the total possible mark for each day late (including weekends and public holidays). You are reminded that submitting even just 1 day late could be the difference between passing and failing a unit. Late penalties are applied by unit convenors or their delegates after tasks are assessed.
- No assessable work will be accepted after the return/release of marked work on the same topic. If a student is still permitted to submit on the basis of unavoidable disruption, an alternative topic may be set.
- Students should keep an electronic file of all assessments. Claims regarding "lost" assessments cannot be made if the file cannot be produced. It is also advisable to keep an electronic file of all drafts and the final submission on a USB untouched/unopened after submission. This can be used to demonstrate easily that the assessment has not been amended after the submission date.

Requesting a re-assessment of an assignment

If you have **evidence** that your task has been incorrectly assessed against the grade descriptors you can request a re-mark. To request a re-mark you need to contact the unit convenor within **7 days** of the date of return of the assignment and provide **a detailed assessment of your script against the task criteria.** Evidence from your assignment must be provided to support your judgements.

Note: Failed assessments cannot be re-marked as they are all double-marked as a part of the moderation process.

University policy on grading

Criteria for awarding grades for assessment tasks

Assignments will be awarded grades ranging from HD to F according to guidelines set out in the University's Grading Policy. The following descriptive criteria are included for your information.

Please note: The outcome of a re-mark may be a **higher/lower or unchanged grade**. Grades are *standards referenced* and effort is NOT a criterion.

Descriptive Criteria for awarding grades in the unit

In order to meet the unit outcomes and successfully pass this unit, students must make a genuine attempt at all assessment tasks. Where any submitted assessment task is considered to

be unsatisfactory in this regard, the highest possible final grade that can be awarded for the unit will be 45.

Students will be awarded grades ranging from HD to F according to guidelines set out in the policy: https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment-in-effect-from-session-2-2016

Withdrawing from this UG Unit

If you are considering withdrawing from this unit, please seek academic advice via https://ask.mq.edu.au before doing so as this unit may be a co-requisite or prerequisite for units in the following sessions and may impact on your progression through the degree.

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.

Assessment Tasks

Name	Weighting	Hurdle	Due
Task 1	40%	No	Week 6
Task 2	60%	No	Week 12

Task 1

Due: **Week 6**
Weighting: **40%**

Investigate student understanding of equations.

Information about the task can be found on the TEP429 iLearn page.

On successful completion you will be able to:

- 4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts
- 7. Explore educational ideas through action research
- 8. Develop communication skills

Task 2

Due: **Week 12**
Weighting: **60%**

Plan a unit of work for any topic from Stage 4 or 5 Mathematics syllabus.

Information about the task can be found on the TEP429 iLearn page.

On successful completion you will be able to:

- 1. Demonstrate knowledge of the content of Stages 4 and 5 mathematics of the current NSW 7-10 syllabus and impending NSW syllabus for the Australian Curriculum
- 2. Demonstrate understanding of a range of teaching strategies related to the content of Stages 4 and 5 of the mathematics syllabuses
- 3. Implement teaching strategies for using ICT that engage students in their learning
- 5. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet specific learning needs of students across a range of backgrounds and abilities
- 6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities
- 8. Develop communication skills

Delivery and Resources

The classes for TEP429 are workshops. There is one x 3hr workshop per week.

You will need to access a copy of the Years 7-10 Mathematics Syllabus and download the weekly learning activities from the TEP429 iLearn page.

We will discuss the role of technology in mathematics education at various times during the unit. You will use the univsersity computers to practise using various software programs suitable for use in mathematics lessons. The requirement for technology use by students is that you bring your personal laptop or other device with internet connection to the workshops and prepare your assignments using a computer.

This unit has a full web presence through *iLearn*.

Students will need regular access to a computer and the Internet to complete this unit.

Weekly access to iLearn is compulsory for all students. Important assessment information will be posted here, as will other relevant unit notices and materials, including a reading template and guide to lecture note taking to assist your studies.

Various activities and materials for discussion and critical reflection are included and external students especially are encouraged to use this web component. Electronic links and suggested references will be included in the Resources section. Please check the iLearn unit regularly.

Access and technical assistance

Information for students about access to the online component of this unit is available at ilearn.mq.edu.au/login/MQ/. You will need to enter your student username and password.

Please do **NOT** contact the Unit Convenor regarding *iLearn* technical help.

No extensions will be given for any technical issues. Allow enough time for your submissions.

Assistance is available from IT Helpdesk ph: 1800 67 4357, or log a request at help.mq.edu.au. OneHelp is the online IT support service for both students and staff.

This unit requires students to use several ICT and software skills:

- **Internet access**: The i*Learn* site contains materials for this unit; it is also required for the online submission of all Assessment Tasks, and for the use of Turnitin submission for ALL tasks.
- **Word processing, visual representations, and document formatting**: You are required to use an appropriate form of software to present your assignments.
- **Uploading** of assessment tasks to **iLearn**.

Unit Schedule

The Unit Schedule is available on the unit's iLearn page.

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.)*

Undergraduate 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

Department Procedures

In addition, the following policies and procedures of the Department of Educational Studies are applicable in this unit.

Attendance for undergraduate units

All Internal tutorials begin in Week 1 of Session.

Activities completed during weekly tutorials (internal) or on campus days (external) are essential for building the core knowledge and/or skills required to demonstrate the learning outcomes of this unit [and to meet the AITSL Graduate Teacher Standards and/or ACECQA requirements]. Attendance at all tutorials or on campus days is expected and the roll will be taken.

Students are required to attend the tutorial in which they are enrolled. Any changes to tutorial enrolments must be completed officially through e-student. Please do not contact the unit convenor requesting a change.

Unit Expectations

- Students are expected to read weekly readings before completing tasks and attending tutorials
- Students are expected to listen/attend weekly lectures before completing tasks and attending tutorials

Note: It is not the responsibility of unit staff to contact students who have failed to submit assignments. If you have any missing items of assessment, it is your responsibility to make contact with the unit convenor.

Electronic Communication

It is the student's responsibility to check all electronic communication on a regular weekly basis. Communication may occur via:

- Official *MQ Student Email* Address
- The *Dialogue* function on iLearn
- Other iLearn communication functions

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

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.

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 outcomes

- 2. Demonstrate understanding of a range of teaching strategies related to the content of Stages 4 and 5 of the mathematics syllabuses
- 3. Implement teaching strategies for using ICT that engage students in their learning
- 6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities

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

- 4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts
- 6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities

Assessment task

- Task 2

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

- 1. Demonstrate knowledge of the content of Stages 4 and 5 mathematics of the current NSW 7-10 syllabus and impending NSW syllabus for the Australian Curriculum
- 2. Demonstrate understanding of a range of teaching strategies related to the content of Stages 4 and 5 of the mathematics syllabuses
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- 4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts
- 5. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet specific learning needs of students across a range of backgrounds and abilities
- 6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities

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 outcome

- 6. Plan and implement effective mathematics lessons that provide achievable challenges for students of varying backgrounds and abilities

Assessment task

- Task 2

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

- 4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts
- 7. Explore educational ideas through action research

Assessment task

- Task 1

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

- 4. Demonstrate knowledge and understanding of research into how students learn mathematical concepts
- 6. Plan and implement effective mathematics lessons that provide achievable challenges

for students of varying backgrounds and abilities

- 7. Explore educational ideas through action research
- 8. Develop communication skills

Assessment tasks

- Task 1
- Task 2

Changes from Previous Offering

The assessment schedule has been changed