

# TEAC 5022 MATHEMATICS CURRICULUM 4

Credit Points 10

Legacy Code 102896

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**Description** This subject enables students to extend their knowledge of Mathematics education with a particular focus on differentiated and applied syllabuses in years 11-12. Students will explore their role in implementing the general capabilities of numeracy, both within the mathematics curriculum and in supporting the capable and confident use of mathematics across society and future work. A range of informed and evidence based approaches to cater for the diverse needs and challenges of students in the senior years of schooling will be addressed. Issues in education such as Mathematics self-efficacy, critical and creative thinking will be explored with further professional and applied research into Mathematics education for senior students.

**School** Education

**Discipline** Teacher Education: Secondary

**Student Contribution Band** HECS Band 1 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Postgraduate Coursework Level 5 subject

**Pre-requisite(s)** TEAC 7027 AND

TEAC 7004 AND

TEAC 7032

## Restrictions

Students in program 1714 or 1848 must have Mathematics Curriculum Area applied to their student record before they can enrol in this subject. Students can view their Curriculum Areas on DegreeWorks in MySR.

## Learning Outcomes

1. Generate and critically evaluate Mathematics curriculum program for senior students which synthesises a variety of pedagogical approaches and resources appropriate to these year levels, assessment tasks and curriculum content.
2. Critically analyse and develop a variety of research-informed classroom strategies which cater for individual differences in senior and extension student learning in the classroom.
3. Evaluate the relationship between learning task design, student learning and expertise, higher order thinking, assessment, feedback and reporting strategies and evaluation in Mathematics Education.
4. Present well-constructed, innovative and coherent Mathematics and STEM based student-centred lessons that include literacy (including key metalanguage) and numeracy, enhance thinking and ICT skills and which take into account the full range of students' abilities and school-based and system data.
5. Prepare a suitable range of assessment instruments for senior students in different Mathematics courses that use valid, reliable and consistent judgements of student learning.
6. Design and select innovative Mathematics and STEM and problem-based teaching resources that apply a critically reflective approach to teaching a range of senior Mathematics curricula and develop

students critical and creative capabilities for future participation and employability.

7. Critically reflect and develop professional learning to develop the discipline of Mathematics teaching and education for future applications.

## Subject Content

1. What is the nature of Mathematics education for senior students and how this does this relate to applied and theoretical contexts?
2. How are current educational policies and priorities addressed with particular reference to Aboriginal and Torres Strait Islander education, literacy and numeracy and ICT, in the teaching of Mathematics?
3. In what ways do engaging, student-centred teaching and creative practices characterise the subject? Why is an understanding of socio-cultural and pedagogical theories and approaches important to quality teaching in Mathematics?
4. How are lessons with appropriate challenge planned, scoped and sequenced in the differing Mathematics courses for senior students?
5. Why is it necessary to continue to differentiate teaching in the subject in the senior years of secondary education? How do teachers go about differentiation?
6. How do teachers keep students safe during teaching in the subject?
7. How may the incorporation of visionary and innovative uses of ICT, critical and creative thinking and problem solving support the achievement of quality learning outcomes in Mathematics?
8. How can assessment of learning, assessment for learning and assessment as learning be reconciled in teaching the subject?
9. What records do teachers keep? How are those records used in reporting student performance at the HSC and for awarding the Record of Student Achievement (ROSA)?
10. In what ways has educational research contributed to the teaching and student learning of Mathematics?
11. What options are open to pre-service teachers to continue to learn about applied and theoretical Mathematics education?

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/Group Task
Professional Task	2000 Words	50	N	Individual
Portfolio	2000 Words (Portfolio)	50	N	Individual

## Prescribed Texts

New South Wales Standards Authority [NESA]. (2012) Mathematics K-10 Syllabus