

TEAC 3056 MATHEMATICS CURRICULUM 7-10

Credit Points 10

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Description The subject will examine and model effective contemporary classroom practice to develop students' pedagogical content knowledge in the teaching of Mathematics. The subject will provide opportunities to engage with teaching Mathematics across strands and courses in years 7-10. The specifics of the relevant NSW Education Standards Authority Years 7-10 Syllabus and links with the K-6 curriculum will be analysed and critiqued as will current Australian and NSW educational/curriculum policies and priorities. Emphasis will be placed on principles underlying Mathematics teaching to develop innovative lesson and unit planning, choose relevant data and contexts to create authentic assessment tasks and apply consistent feedback for student learning. Opportunities for investigation and discussion of current research particularly related to the development of applied and inquiry-based Mathematics learning will be presented.

School Education

Discipline Curriculum Studies

Student Contribution Band

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) TEAC 2004

Restrictions

Students must be enrolled in 1939 Bachelor of Education (Secondary).

Assumed Knowledge

Successful completion of 40 credit points of Mathematics subjects in the Secondary Mathematics Education major.

Learning Outcomes

After successful completion of this subject, students will be able to:

1. Demonstrate a comprehensive understanding of NSW Mathematics curriculum in Stages 4 and 5.
2. Apply socio-cultural perspectives and pedagogical inquiry theories and approaches used in the Mathematics curriculum area, including those from culturally and linguistically diverse and Aboriginal and Torres Strait Islander backgrounds.
3. Present well-constructed, innovative and coherent student-centred lessons that include literacy (including key metalanguage) and numeracy, enhance thinking and ICT skills and which consider the full range of students' abilities and school-based and system data.
4. Prepare a suitable range of assessment instruments that use valid, reliable and consistent judgements of student learning.
5. Design creative and innovative teaching programs that apply a critically reflective approach to teaching Mathematics and include opportunities to develop students' number, spatial, data analysis, problem-solving and algebraic skills and understanding.
6. Use a variety of teaching and learning strategies and resources, including ICT and a range of data and relevant contexts in teaching lessons and programs, including STEM and applied Mathematics.

7. Reflect and research professional learning to develop the discipline of Mathematics.

Subject Content

1. What is the nature of the Mathematics in the early and middle years of secondary education? How is the subject linked to what is taught in primary school and in the senior years of secondary education?
2. How are current educational policies and priorities with particular reference to Aboriginal and Torres Strait Islander education, literacy and numeracy and ICT, addressed in the teaching of the subject?
3. In what ways do active and engaging, student-centred teaching practices characterise the subject? Why is an understanding of socio-cultural and pedagogical theories and approaches important to quality teaching in the subject?
4. How are lessons planned, units written, differentiated and learning scoped and sequenced in the teaching of Mathematics?
5. Why is it necessary to differentiate teaching in Mathematics? How do teachers go about differentiation?
6. 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?
7. How can assessment of learning, assessment for learning and assessment as learning be reconciled in teaching of Mathematics?
8. What records do teachers keep? How are those records used in reporting student performance and in particular used towards awarding the Record of Student Achievement (ROSA)?
9. In what ways has educational research contributed to the teaching and student learning of Mathematics?
10. What options are open to pre-service teachers to continue to learn about the teaching of Mathematics?

Prescribed Texts

- New South Wales Standards Authority [NESA]. (2022) Mathematics K-10 Syllabus <https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-k-10-2022> (<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-k-10-2022/>)