

TEAC 7151 APPLIED MATHEMATICS AND SCIENCE IN SECONDARY STEM EDUCATION

Credit Points 10

Legacy Code 102764

Coordinator Gail Walker (<https://directory.westernsydney.edu.au/search/name/Gail Walker/>)

Description This subject develops in-service teachers' knowledge and skills in the application of mathematics and science in the STEM (science, technology, engineering and mathematics) disciplines. The subject content and assessments are designed to (1) build teachers' foundational skills in science/mathematics, and (2) build teachers' professional skills in the implementation of science/mathematics in their classrooms. A particular focus of the subject is how science/mathematics can be used to authentically integrate curriculum content from across the different STEM disciplines through inquiry- and problem-based learning, with the ultimate aim of enhancing student engagement and achievement in the STEM disciplines.

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/) page.

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in 1882 Graduate Certificate in Secondary STEM Education, 1911 Master of Education, 1848 Master of Teaching Secondary STEM or 1913 Graduate Certificate in Education.

Assumed Knowledge

Students are assumed to be qualified secondary school teachers with classroom experience in delivering the NSW or Australian curriculum.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Demonstrate foundational knowledge and skills in mathematics and science as applied in integrated secondary STEM education
2. Design teaching and learning sequences which apply mathematics and science as part of integrated STEM units in secondary school contexts.
3. Critically appraise the role of mathematics and science in creating authentic learning experiences for students in secondary school contexts, including through inquiry- and problem-based learning.

Subject Content

- development of An Understanding of mathematical and scientific content relevant to integrated STEM Teaching and learning in secondary schools.
- using mathematics and science to Create authentic learning experiences for secondary school students.

- application of effective mathematical and scientific pedagogy in secondary school contexts.
- inquiry- and Problem-based learning with science/mathematics in integrated STEM Teaching and learning.

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	Mandatory
Professional Task	2,000 words	50	N	Individual	N
Professional Task	2,000 words	50	N	Individual	N

Teaching Periods

Spring (2025)

Penrith (Kingswood)

Hybrid

Subject Contact Gail Walker (<https://directory.westernsydney.edu.au/search/name/Gail Walker/>)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7151_25-SPR_KW_3#subjects)