

TEAC 7121 STEM FOUNDATIONS

Credit Points 10

Legacy Code 102508

Coordinator Danielle Pearson (<https://directory.westernsydney.edu.au/search/name/Danielle Pearson/>)

Description This subject will enable students to engage with knowledge of research-based integrated approaches to the teaching of science, technology, engineering and mathematics in schools. Students will learn about interdisciplinary methods for STEM learning, including project based learning and design thinking. The subject will allow students to undertake a critical examination of innovative, interdisciplinary approaches to curriculum development and relevant pedagogical strategies to maximise student learning and engagement with STEM disciplines. This subject is included in the Development Phase of the Master of Teaching program.

School Education

Discipline Teacher Education, Not Elsewhere Classified.

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 a postgraduate program.

Assumed Knowledge

An understanding of at least one STEM (science, technology, engineering or mathematics) school syllabus.

Learning Outcomes

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

1. Demonstrate a critical understanding of theoretical constructs underlying STEM curriculum development as it relates to classroom teaching practice and student learning.
2. Create and evaluate interdisciplinary STEM units
3. Demonstrate a critical understanding of project based learning as a pedagogical strategy for STEM learning.
4. Incorporate design thinking into STEM curriculum integration and development.
5. Critically reflect upon the use of action research to evaluate STEM teaching practices.

Subject Content

K-12 STEM research

Teachers as action researchers

Interdisciplinary curriculum development

Project Based learning

Design thinking

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
Critical Review	1,500 words	40	N	Individual	Y
Professional Task	2,500 words	60	N	Individual	Y

Teaching Periods

Autumn (2025)

Online

Online

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

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7121_25-AUT_ON_2#subjects)

Spring (2025)

Online

Online

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7121_25-SPR_ON_2#subjects)