

# TEAC 7121 STEM FOUNDATIONS

**Credit Points** 10

**Legacy Code** 102508

**Coordinator** Mary Southall ([https://directory.westernsydney.edu.au/search/name/Mary Southall/](https://directory.westernsydney.edu.au/search/name/Mary%20Southall/))

**Description** This unit 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 unit 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.

**School** Education

**Discipline** Teacher Education, Not Elsewhere Classified.

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

Check your HECS Band contribution amount 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 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.

Item	Length	Percent	Threshold	Individual/Group Task
Critical Review	1,500 words	40	N	Individual
Professional Task	2,500 words	60	N	Individual

Teaching Periods

## Autumn

### Online

### Online

**Subject Contact** Mary Southall ([https://directory.westernsydney.edu.au/search/name/Mary Southall/](https://directory.westernsydney.edu.au/search/name/Mary%20Southall/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=TEAC7121\\_22-AUT\\_ON\\_O#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=TEAC7121_22-AUT_ON_O#subjects))