TEAC 7163 INVESTIGATIONS: SUSTAINABILITY, SCIENCE AND TECHNOLOGY

Credit Points 10

Coordinator Lesley Gough (https://directory.westernsydney.edu.au/search/name/Lesley Gough/)

Description This subject explores the place of science, technology and sustainability in the Early Years Learning Framework, the Australian Curriculum and relevant syllabuses. It will focus on scientific and technological pedagogical content knowledge appropriate for teaching science and technology. The subject will explore the importance of Aboriginal ways of knowing in science using culturally sensitive pedagogies. Within the subject there is significant emphasis on developing scientific inquiry skills and computational and systems thinking in applying technology. The subject supports confident, curious, creative and imaginative life-long learners to inquire, discover and think critically to develop sustainable ideas and solutions using digital and design technologies. This subject is included in the Transition Phase of the Master of Teaching program.

School Education

Discipline Teacher Education: Primary

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

Equivalent Subjects TEAC 7099

Restrictions

Students must be enrolled in 1783 Master of Teaching (Birth-5 Years/Birth-12 Years) or 1773 Master of Teaching (Early Childhood and Primary).

Learning Outcomes

1. Critically reflect on personal understandings and misconceptions of science and technology concepts and pedagogies
2. Analyse the curriculum frameworks and research underpinning the development of science and technology knowledge and understanding from early childhood through to primary school years.
3. Explain central concepts in sustainability, science and technology and the development of these ideas for children from Birth to 12 years of age.
4. Evaluate a range of research-based strategies, effective pedagogical practices and resources suitable for introducing scientific inquiry and design learning including Aboriginal ways of knowing into early childhood and primary school environments.
5. Design sequenced learning experiences that incorporate responsive teaching practices and intertwine the nature of environmental, social, economic, political and cultural sustainability as they relate to early childhood and primary science and technology education.

Subject Content

- The place of science, technology and sustainability in the Early Years Learning Framework, Australian Curriculum and NSW Science and Technology syllabus.
- Constructivist learning strategies that foster community connections in ways that build on local funds of knowledge and assist in developing confident learners and sustainable communities.
- Science identity in young children – developing a learning environment that promotes interests, habits, computational and systems thinking skills, and scientific and technological inquiry skills.
- Sustainable futures – examining the three interconnected dimensions of sustainability as they relate to science and technology learning in the early childhood and primary years.
- Supporting confident, curious, creative and imaginative learners to inquire, discover and think critically to develop sustainable ideas and solutions using digital and design technologies.
- Planning and sequencing learning experiences that incorporate intentional teaching and scaffold learning through instructional guidance and thoughtful feedback that promote responsive teaching and effective pedagogical practices.
- Documenting and assessing funds of knowledge, skills and learning to inform planning practices.
- The importance of Aboriginal ways of knowing in science and culturally sensitive pedagogies.

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
Case Study	2,000 words	50	N	Individual	N
Portfolio	2,000 words	50	N	Individual	N

Prescribed Texts

Campbell, C., Jobling, W., & Howitt, C. (2021). *Science in early childhood* (4th ed.). Cambridge University Press

Fleer, M (2023). *Technologies for children*. Cambridge University Press

Teaching Periods

Autumn (2025)

Bankstown City

On-site

Subject Contact Lesley Gough (https://directory.westernsydney.edu.au/search/name/Lesley Gough/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7163_25-AUT_BK_1#subjects)

Spring (2025)

Bankstown City

On-site

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7163_25-SPR_BK_1#subjects)