

TEAC 5033 SCIENCE CURRICULUM 2

Credit Points 10

Legacy Code 102898

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

Description The subject will explore senior Science curriculum to develop pre-service teachers' pedagogical content knowledge in the teaching of Science across Biology, Chemistry, Earth and Environment and Physics. The subject will provide opportunities to engage with teaching Science across a range of programs in years 11-12. The specifics of the relevant NSW Education Standards Authority Stage 6 Science Syllabus will be analysed and critiqued as will current Australian and NSW educational/curriculum policies and priorities. Emphasis will be placed on principles underlying Science teaching to develop innovative lesson and subject planning, choose relevant data and contexts to create authentic assessment tasks and apply consistent feedback for student learning. There will be a focus on the development of laboratory skills and techniques including aspects of general and mandatory safety requirements. Opportunities for investigation and discussion of current research particularly related to the development of applied and inquiry-based Science learning will be presented. This subject is included in the Development Phase of the Master of Teaching program.

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 5 subject

Pre-requisite(s) TEAC 7004 OR TEAC 7161 AND TEAC 7032 AND TEAC 7027 OR TEAC 7160

Restrictions

Students in program 1714, 1848 or must have a relevant Science Curriculum Area applied to their student record before they can enrol in this subject. Students can view their Curriculum Areas on DegreeWorks in MySR.

Learning Outcomes

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

1. Demonstrate a comprehensive understanding of Science curricula in Stage 6.
2. Apply socio-cultural perspectives and pedagogical theories and approaches used in the Science curriculum area for senior students, including Aboriginal and Torres Strait Islander perspectives where relevant.
3. Present well-constructed, innovative and coherent senior student-centred lessons that extend students' literacy (including key metalanguage) and numeracy, enhance thinking and ICT skills and which take into account the full range of students' abilities and school-based and system data.

4. Prepare a suitable range of senior assessment instruments that use valid, reliable and consistent judgements of student learning.
5. Design relevant, innovative and authentic teaching programs that apply a critically reflective approach to teaching Science in Stage 6 and include opportunities to develop students' understanding of science concepts.
6. Use a variety of teaching and learning strategies and resources, including ICT and a range of sources in teaching senior lessons and programs.
7. Critically reflect on Science Education and demonstrate capacity to practically manage laboratory protocols and experiments including safe handling and storage of chemicals, specimens and equipment, risk assessments and mandatory safety requirements.

Subject Content

1. What is the range and depth of science in senior years of secondary education? How is the subject linked to what is taught in the junior and middle years of secondary education?
2. How are current educational policies and priorities addressed with particular reference to Aboriginal and Torres Strait Islander education, literacy and numeracy and ICT, 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 and learning scoped and sequenced in the subject?
5. Why is it necessary to continue to differentiate teaching in the subject in the senior years of secondary education? How do teachers go about differentiation?
6. How do teachers keep students safe during teaching in the subject?
7. 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 the subject?
8. How can assessment of learning, assessment for learning and assessment as learning be reconciled in teaching the subject?
9. What records do teachers keep? How are those records used in reporting student performance at the HSC and for awarding the Record of Student Achievement (ROSA)?
10. In what ways has educational research contributed to the teaching and student learning of the subject?
11. What options are open to pre-service teachers to continue to learn about Science as a discipline?

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	2000 words	50	N	Individual	Y
Portfolio	2000 words	50	N	Individual	Y

Prescribed Texts

New South Wales Standards Authority [NESA]. (2017). Science Stage 6 Syllabuses. (<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-science/>)

Teaching Periods

Spring (2025)

Penrith (Kingswood)

On-site

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

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC5033_25-SPR_KW_1#subjects)