

Unit Outline (Higher Education)

Institute / School: Institute of Education, Arts & Community

Unit Title: SCIENCE CURRICULUM 1

Unit ID: EDBED3029

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (EDDDE3002)

ASCED: 070301

Description of the Unit:

This unit is the first in a sequence of two that focuses on curriculum and pedagogy in the science specialist teaching area for undergraduate Pre-Service Teachers. It provides pre-service teachers with an understanding of the nature of science, the role of science in our community, and the changing role of science education in the community. These broad themes combine with introductory science teaching skills such as: questioning, explaining, practical work, motivation, constructivist teaching and learning, safety, lesson planning and assessment.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

Not wholly work experience: Student is not undertaking work experience in industry or student is undertaking work experience in industry where learning and performance is directed by the provider.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

Knowledge:

- K1.** Appreciate the nature of science as a constantly developing field of knowledge and the processes of scientific thinking which support this development.
- K2.** Examine recent developments in science and how science impacts on the everyday world.
- K3.** Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies relevant to teaching Science in years 7-10
- K4.** Explore of a range of theoretical and pedagogical approaches, including constructivism, relevant to learning and teaching in science.
- K5.** Know and understand literacy and numeracy teaching strategies and their application in the Science teaching area.

Skills:

- S1.** Reflect critically on practice, make positive use of feedback and learn in ongoing ways about teaching science.
- S2.** Use appropriate theoretical frameworks to produce effective and engaging learning experiences which cater for a range of learners.
- S3.** Articulate and justify planning, teaching and assessment practices.
- S4.** Use a variety of resources, including ICT, to expand curriculum learning opportunities that engage students in learning.
- S5.** Communicate effectively with learners and colleagues.
- S6.** Pursue interests related to science and model curiosity, leadership, resilience and problem-solving capacities.
- S7.** Actively participate in professional conversations and debates about the teaching of science, the role of science in the community as well as ethical responsibilities.

Application of knowledge and skills:

- A1.** Collaboratively prepare, deliver and evaluate a science activity that includes links to curriculum policies and pedagogical knowledge.
- A2.** Collaboratively research, design and teach a lesson to science learners. Use video analysis to reflect on critical affective moments and to evaluate the teaching and learning of the participants.
- A3.** Plan and present a sequence of lessons showing links to curriculum policy and explanations about how students achieve learning intentions.

Unit Content:

Topics to be covered

- Examining science as a field of human knowledge and endeavour, the links between science and other areas of knowledge and between the traditional science disciplines.
- Explore the concepts, substance and structure of the content associated with Science.
- Evaluation of teaching approaches and strategies and their application in science, including

constructivism and scaffolding, inquiry and discovery learning, strategies for building subject-specific literacy, numeracy and practical work.

- Examine a range of resources, including ICT, that engage students in learning.
- Science teaching - using curriculum policies and guidelines for lesson planning, implementation, teaching, evaluation, reflection and assessment purposes
- Critical examination of educational, social and cultural issues that impact on science education and how these might be addressed.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, K4, K5 S1, S2, S4, S5 A1 APST 2.1, 2.2, 2.3, 2.5 3.1, 3.2, 3.3, 3.4 4.2, 4.4	Practical demonstration and preparation of a teaching guide for class members showing links to curriculum policies and theoretical perspectives on science and pedagogy.	Presentation to science learners and evaluation	30-40%
K1, K2, K3, K4, K5 S1, S2, S3, S4, S5, S6, S7 A2 APST 2.1, 2.2, 2.3, 2.5 3.1, 3.2, 3.3, 3.4, 3.5, 5.1 4.1, 4.2, 4.4	Participation in a Lesson Study professional learning community where a lesson, or a component of a lesson, is prepared, enhanced, taught and reflected on in a written report.	Lesson Study Research Task	30-40%
K1, K2, K3, K4, K5 S2, S3, S4 A3 APST 2.1, 2.2, 2.3, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4 4.1, 4.4, 5.1	Preparation of a teaching sequence that allows students to attain stated learning outcomes and articulates effective resourcing.	Teaching sequence and Curriculum Design	30-40%

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

MICS Mapping has been undertaken for this Unit No

Date:

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)

