Unit Outline (Higher Education)

Institute / School:	Institute of Education, Arts & Community
Unit Title:	Science Education
Unit ID:	EDBED2012
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	(EDBED2005 and EDBED2009 and EDBED2011)
ASCED:	070303

Description of the Unit:

This unit is designed to develop an understanding of the nature of science and technology and their relationship with society through an activity-based approach. Key scientific concepts will be explored. Design thinking and technologies to generate and produce solutions will be examined. Discussion and analysis of the teaching and learning activities will enable students to personally evaluate different approaches to teaching science and technology to cater for a range of learners in the classroom. The development of an enthusiasm for science and technology and the teaching of these is a major focus of this unit.

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

Work Experience:

No work experience

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						
Intermediate			✔			
Advanced						

Learning Outcomes:

Knowledge:

K1. Understand the nature of science, science learning and key scientific concepts.

K2. Engage with a range of concepts related to technology and design thinking to produce solutions

K3. Understand the relationship that exists between scientific knowledge, technological development, and social issues.

K4. Explore the roles of teachers and learners in a science and technology classroom.

Skills:

S1. Apply strategies to ensure safety issues associated with the teaching and learning of science and technology are embedded in lesson design.

S2. Utilise a range of approaches to teaching science and technology and link these with current learning theories.

S3. Incorporate a range of resources, including ICTs, that engage students in their learning in the science and technology classroom.

S4. Design effective teaching strategies for the science and technology curriculum to engage students and enhance their learning.

Application of knowledge and skills:

A1. Develop skills to communicate key scientific and design technology ideas.

A2. Apply knowledge of effective student learning and teaching strategies to organise content into an effective science and technology teaching sequence and to incorporate a range of resources.

A3. Implement curriculum, assessment and reporting knowledge to design learning sequences and lesson plans in science education.

A4. Work collaboratively with staff and student colleagues in developing effective teaching skills in the area of science and technology education.

Unit Content:

Topics will include
• Resources, content and teaching strategies to deliver effective and engaging science and technology curriculum.
• Research into how students learn and the implications for teaching science and technology.
• Current curriculum with a strong focus on the development of lessons and practical activities that establish challenging learning goals through effective planning, structuring and sequencing of lessons/learning programs that use a wide range of teaching strategies.
• Methods and skills that are crucial to scientific inquiry, designing and making products.
• Conceptual ideas and processes about embedding science and technology, into classroom learning, understanding science as a human endeavour and the differences in learning progressions in science and technology.
• Science in everyday life and strategies in using these links in curriculum development.

• Exploration of a range of resources, including ICTs, that engage students in their learning in the science and technology classroom
• Embedding literacy and numeracy strategies and ICTs to enhance teaching and learning in the science and technology curriculum.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, S2, S3, A1	Reflective writing, weekly questions and reviews of weekly classroom activities and lectures.	Portfolio	40-60%
K1, K2, K3, K4, S1, S2, S4, A1, A2, A3, A4	Develop sequential lesson plans, learning activities, resources including ICT and assessment incorporating links between science and technology and at least one other Learning Area. Prepare, deliver and reflect on a science and technology practical activity from one of the lessons in the sequence above.	Sequential lesson plans and Peer teaching	40-60%

Adopted Reference Style:

APA ()

Refer to the library website for more information

Fed Cite - referencing tool