Unit Outline (Higher Education)

Institute / School:	School of Education
Unit Title:	SCIENCE AND ENVIRONMENTAL EDUCATION IN EARLY CHILDHOOD
Unit ID:	EDECE2018
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	(EDECE2002)
ASCED:	070101

Description of the Unit:

This course is designed to allow PSTs to explore the concepts of science and environmental awareness appropriate for young children in an early childhood environment. Using their knowledge of child development, content and curricula requirements PSTs will plan and implement appropriate science activities for young children in prior-to-school settings. PSTs will examine appropriate contemporary teaching strategies and curricula approaches, including play-based and inclusive strategies and alternative curricula approaches. PSTs will explore the importance and impact of culture, diversity and inclusion in the planning and programing of science and environmental education experiences. PSTs will begin to use advocacy and research to improve the teaching of science and environmental education in educational settings.

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						
Intermediate			✔			
Advanced						

Learning Outcomes:

Knowledge:

K1. Articulate the importance of demonstrating a positive attitude towards science and the environment including attitudes, processes and concepts of how science and environmental education can be integrated with other curriculum teaching areas.

K2. Select teaching methods and strategies appropriate for teaching science in ways that are inclusive of all young children and articulate the role of pedagogies, including play based pedagogies and curricular approaches in engaging young learners in science and environmental education in prior to school settings.

K3. Demonstrate an understanding of how developmental theory, child health, wellbeing and safety and curricular requirements underpin curricula decision making.

K4. Demonstrate an understanding of contemporary issues around science and environmental education and their impact on teaching.

K5. Demonstrate an awareness of the role of community partnerships and culturally diverse perspectives in developing culturally inclusive science and environmental education programs.

Skills:

S1. Explain why science and environmental education should be taught to young children and the ways in which science experiences and environmental education can contribute to development.

S2. Identify the major areas of science instruction and inquiry stances, intentional and collaborative teaching strategies and develop working relationships with parents/carers and the wider community, to design environmental education projects.

S3. Be conscious of the role that the adult can play in assisting young children to explore science and their environment while addressing curricula requirements.

S4. Use critical reflection as an impetus for professional learning.

Application of knowledge and skills:

A1. Reflect on personal beliefs and dispositions towards science and environmental education.

A2. Critically reflect on a range of learning experiences developed and implemented in an early childhood context.

A3. Use knowledge of child development,collaborative strategies, science and environment education content and curricular requirements to develop and implement an environmental education project. Propose possible changes that focus on science and environmental education and discuss how these changes could be implemented with active involvement of children, families and communities.

Unit Content:

Topics to include

- Science, what it is and why it is important to young children
- An understanding of what children can gain developmentally through science and environmental experiences

- Australia`s early childhood environmental education networks
- Initiating a connection with the environment
- Initiatives for developmental challenges in early childhood environments
- Sustainability in early childhood
- Day-to-day activities offer frequent opportunities for science
- Science and environmental learning
- Science processes of observing, comparing, classifying, communicating, predicting, measuring and experimenting
- Appropriate science experiences to implement with young children in the areas of water, air, sound, animals, plants, electricity, magnets, light and environmental awareness
- Relationships between an adult`s positive attitude towards science and the environment on a child`s eagerness to learn
- Concept development from science
- Identifying science and environmental experiences in daily routine tasks, planned and unplanned.

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**ttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are be embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 1 Interpersonal	Students will demonstrate the ability to effectively communicate, interact and work with others both individually and in groups. Students will be required to display skills in-person and/or online in: • Using effective verbal and non-verbal communication • Listening for meaning and influencing via active listening • Showing empathy for others • Negotiating and demonstrating conflict resolution skills • Working respectfully in cross-cultural and diverse teams.	Not applicable	Not applicable
FEDTASK 2 Leadership	Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in: • Creating a collegial environment • Showing self -awareness and the ability to self-reflect • Inspiring and convincing others • Making informed decisions • Displaying initiative	S3	AT2, AT3

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 3 Critical Thinking and Creativity	Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: • Reflecting critically • Evaluating ideas, concepts and information • Considering alternative perspectives to refine ideas • Challenging conventional thinking to clarify concepts • Forming creative solutions in problem solving	K1, K2, K3, K4, K5, S2, S4, A1, A2	AT1, AT2
FEDTASK 4 Digital Literacy	Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: • Finding, evaluating, managing, curating, organising and sharing digital information • Collating, managing, accessing and using digital data securely • Receiving and responding to messages in a range of digital media • Contributing actively to digital teams and working groups • Participating in and benefiting from digital learning opportunities	Not applicable	Not applicable
FEDTASK 5 Sustainable and Ethical Mindset	Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in: • Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts • Committing to social responsibility as a professional and a citizen • Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Embracing lifelong, life-wide and life-deep learning to be open to diverse others • Implementing required actions to foster sustainability in their professional and personal life.	K4, S1, A3	AT3

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K2, A1	What does a Scientist look like? PST to explain or creatively represent what they believe a scientist looks like and what forms the basis of their beliefs.	Hurdle	U/S
K1, K2, K3, K4, K5, S1, S2, S3, S4, A2, A3; APST: 1.1, 1.2, 1.5, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 7.1	Planning: Using the template, plan a range of science and environmental experiences addressing a range of science concepts, resources and teaching and assessment strategies for young children. PST to implement a selection of the planned experiences and reflect on their teaching practice in terms of preparation, planning, delivery, content knowledge teaching strategies, resources and implementation.	Planning and Reflection	40-60%

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K3, K4, S1, S2, S4, APST: 1.1, 1.2, 1.5, 2.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 4.1, 4.2, 4.4, 7.1, 7.4	Develop an environmental project based on a sustainability topic for a group of young children. Design and present information about the project and the anticipated outcomes to be shared with parents/carers and the wider community to stimulate their interest in the children's learning and involvement in this project.	Project	40% - 60%

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

Professional Standards / Competencies:

Australian Professional Standards for Teachers (AITSL) - Graduate Teacher: Initial

Attribute	Assessed	Level
Professional Knowledge		
1. Know students and how they learn		
1.1 Physical, social and intellectual development and characteristics of students Demonstrate knowledge and understanding of physical, social and intellectual development and characteristics of students and how these may affect learning.	Yes	Intermediate
1.2 Understand how students learn Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.	Yes	Intermediate
1.5 Differentiate teaching to meet the specific learning needs of students across the full range of abilities Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.	Yes	Intermediate
2. Know the content and how to teach it		
2.1 Content and teaching strategies of the teaching area Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.	Yes	Intermediate
2.2 Content selection and organisation Organise content into an effective learning and teaching sequence.	Yes	Intermediate
2.3 Curriculum, assessment and reporting Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	Yes	Intermediate
Professional Practice		
3. Plan for and implement effective teaching and learning		
3.2 Plan, structure and sequence learning programs Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.	Yes	Intermediate
3.3 Use teaching strategies Include a range of teaching strategies.	Yes	Intermediate

3.4 Select and use resources Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.	Yes	Intermediate
3.5 Use effective classroom communication Demonstrate a range of verbal and non-verbal communication strategies to support student engagement.	Yes	Intermediate
3.6 Evaluate and improve teaching programs Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning.	Yes	Intermediate
3.7 Engage parents/ carers in the educative process Describe a broad range of strategies for involving parents/carers in the educative process.	Yes	Intermediate

4. Create and maintain supportive and safe learning environments

4.1 Support student participation Identify strategies to support inclusive student participation and engagement in classroom activities.	Yes	Intermediate
4.2 Manage classroom activities Demonstrate the capacity to organise classroom activities and provide clear directions.	Yes	Intermediate
4.4 Maintain student safety Describe strategies that support students' wellbeing and safety working within school and/or system, curriculum and legislative requirements.	Yes	Intermediate

Professional Engagement

7. Engage professionally with colleagues, parents/carers and the community

7.1 Meet professional ethics and responsibilities Understand and apply the key principles described in codes of ethics and conduct for the teaching profession.	Yes	Intermediate
7.4 Engage with professional teaching networks and broader communities Understand the role of external professionals and community representatives in broadening teachers' professional knowledge and practice.	Yes	Intermediate