



Course Outline (Higher Education)

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

Description of the Course:

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 programming 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)

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	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"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

Knowledge:

- K1.** Recognise the importance of demonstrating a positive attitude towards science and the environment.
- K2.** Comprehend that science includes attitudes and processes as well as concepts.
- K3.** Select teaching methods and strategies appropriate for teaching science in ways that are inclusive of all young children.
- K4.** Demonstrate an understanding of how developmental theory, child health, wellbeing and safety and curricular requirements underpin curricula decision making.
- K5.** Articulate the role of pedagogies, including play-based pedagogies and curricular approaches in engaging young learners in science and environmental education in early years and as they transition between various services.
- K6.** Demonstrate an understanding of contemporary issues around science and environmental education and their impact on teaching.
- K7.** Explain how science and environmental education can be integrated with other curriculum teaching areas.
- K8.** 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.
- S2.** Describe the various ways in which science experiences and environmental education can contribute to a child`s/children`s development.
- S3.** Identify the major areas of science instruction.
- S4.** Be conscious of the role that the adult can play in assisting young children to explore science and their environment while addressing curricula requirements.
- S5.** Use intentional teaching and inquiry stances to develop environmental education projects with young learners and communities.
- S6.** Develop working relationships with parent/carers and the wider community.
- S7.** Use critical reflection as an impetus for professional learning.

Application of knowledge and skills:

- A1.** Reflecting 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.** Distinguish possible changes to the environment in an early childhood context and discuss how changes could be implemented through active involvement of children, families and communities.
- A4.** Using their knowledge of child development, science and environment education content and curricular requirements to develop and implement and environmental education project.
- A5.** Use strategies to include parents/carers and the wider community in planning and implementing environmental education projects.

Course 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.

Values:

- V1.** Appreciate the relevance of science and environmental education to one's daily life
- V2.** Appreciate that science is a natural experience for young children
- V3.** Recognise what sustainability in early childhood means
- V4.** Be empowered to work towards a sustainable future
- V5.** Identify environmental challenges in early childhood environments.

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the [Higher Education Graduate Attributes Policy](#) (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K4; A1	AT2
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	N/A	N/A
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	K3; K8	N/A

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	A5	AT2
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	S5	AT3

Learning Task and Assessment:

Learning Outcomes Assessed	Learning 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.	Self Reflection	5-15%
K1, K2, K3, K4, K5, K7, S1, S2, S3, S4, S7, 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: PST to plan science and environmental experiences addressing a range of science concepts, resources and teaching and assessment strategies for young children. PST to implement five of the planned experiences with an individual child or small group of children. Reflection: PST to reflect on their teaching practice in terms of preparation, planning, delivery, content knowledge teaching strategies, resources and implementation.	Planning and Reflection	20-40%
K3, K4, K6, K8, S1, S2, S4, S5, S6, S7, A4, A5; 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	50-70%

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