Course Outline (Higher Education)

School: School of Education

Course Title: SCIENCE AND ENVIRONMENTAL EDUCATION

Course ID: EDECE2018

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s):   Nil

ASCED Code: 070101

Description of the Course :

This course is designed to allow PSTs to explore the 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 and as children transition to school. 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, etc.)

Program Level:

AQF Level of Program					
5	**6**	**7**	**8**	**9**	**10**
Level					
Introductory					
Intermediate		✔			
Advanced					

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.

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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 and to school.

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 school 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 school community in planning and implementing environmental education projects.

Course Content:

Topics may 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

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- 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:

FedUni graduate attributes statement. To have graduates with knowledge, skills and competence that enable them to stand out as critical, creative and enquiring learners who are capable, flexible and work ready, and responsible, ethical and engaged citizens.

Attribute	Brief Description	Focus
Knowledge, skills and competence	PSTs will come to understand the impact of learning and development on the teaching of science and environmental education. PSTs will use their understanding of content knowledge, teaching and assessment strategies to plan engaging and inclusive science and environmental education experiences for children with a range of abilities, interests and dispositions.	High
Critical, creative and enquiring learners	PSTs will explore inquiry learning stances for the teaching of science and environmental education as well as for their own professional learning.	High
Capable, flexible and work ready	PSTs will demonstrate the ability to plan, implement, assess and evaluate experiences in the science and environmental teaching curriculum area. PSTs will also be able to use strategies to engage parents/carers and the wider community in authentic projects.	High
Responsible, ethical and engaged citizens	PST will be able to articulate the value of science and environmental education and how their own attitudes and dispositions impact the eagerness and motivation of young children.	High

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K2, A1	What does a Scientist look like? PST is to explain or creatively represent what they believe a scientist looks like and what forms the basis of their beliefs.	Forum Posting	5-15%

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Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
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: PSTs to plan 10 science experiences addressing a range of science concepts, resources and teaching and assessment strategies for young children. PST is to implement five of the planned experiences with an individual or small group of children. Reflection: PST is 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	Environmental Education Project in F-2: PSTs will become familiar with their primary school placement context and will develop a project with their F-2 class around environmental education While on Professional Experience PSTs will implement their project with the F-2 class and school. PSTs will develop strategies for involving the school community in their project and disseminate project information and outcomes to parents/carers and wider community.	Project	50-70%

Adopted Reference Style:

APA

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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	Yes	Intermediate
1.2 Understand how students learn	Yes	Intermediate
1.5 Differentiate 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	Yes	Intermediate
2 - Know the content and how to teach it		
2.2 Content selection and organisation	Yes	Intermediate
2 - Know the content and how to teach it		
2.3 Curriculum, assessment and reporting	Yes	Intermediate
Professional Practice		
3 - Plan for and implement effective teaching and learning		
3.2 Plan, structure and sequence learning programs	Yes	Intermediate
3 - Plan for and implement effective teaching and learning		
3.3 Use teaching strategies	Yes	Intermediate
3 - Plan for and implement effective teaching and learning		
3.4 Select and use resources	Yes	Intermediate

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3 - Plan for and implement effective teaching and learning

3.5 Use effective classroom communication	Yes	Intermediate

3 - Plan for and implement effective teaching and learning

3.6 Evaluate and improve teaching programs	Yes	Intermediate

3 - Plan for and implement effective teaching and learning

3.7 Engage parents/ carers in the educative process	Yes	Intermediate

4 - Create and maintain supportive and safe learning environments

4.1 Support student participation	Yes	Intermediate

4 - Create and maintain supportive and safe learning environments

4.2 Manage classroom activities	Yes	Intermediate

4 - Create and maintain supportive and safe learning environments

4.4 Maintain student safety	Yes	Intermediate

Professional Engagement

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

7.1 Meet professional ethics and responsibilities	Yes	Intermediate

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

7.4 Engage with professional teaching networks and broader communities	Yes	Intermediate