COURSE OUTLINE

EDU212 Teaching Science in the Early Years

School: School of Education and Tertiary Access

2024 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay
UniSC Fraser Coast

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

In this course you will explore and develop an understanding of learning and teaching science in the early years of primary schooling. You will investigate contemporary curriculum, pedagogies, ways of thinking and working scientifically and develop inquiry-based perspectives which engage children in explorations of science and technology in their daily lives. You will use diverse pedagogies for developing learning experiences, assessment strategies and scientific literacy that will lead to effective and current science teaching practices for young children.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Tutorial/Workshop 1 – A blended learning approach will be used to deliver this course. There will be a scheduled weekly tutorial of 2 hours. Weekly tutorial notes and other learning materials will be available to accompany all tutorials to support learning.	2hrs	Week 1	10 times
Learning materials – A range of asynchronous materials and activities accessed through Canvas.	2hrs	Week 1	9 times

1.3. Course Topics

- Research on effective Science teaching and learning in Early Years and lower Primary (e.g., constructivist perspectives)
- Pedagogies for effective Early Childhood Science education (e.g., inquiry-based learning)
- Australian Curriculum Science in the Early Years and lower Primary phases of schooling
- Aboriginal and Torres Strait Islander influence in science
- Designing, planning and assessing for scientific literacy and learning in young children
- Implementing effective and engaging Early Childhood Teaching strategies (e.g., play-based, real-life learning and ICT's)

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...	GRADUATE QUALITIES MAPPING Completing these tasks successfully will contribute to you becoming...	PROFESSIONAL STANDARD MAPPING * Australian Institute for Teaching and School Leadership
1 Understand and design effective learning and teaching for science understanding in the early years; that may include using ICTs, and local community and Aboriginal and Torres Strait Islander peoples' ways of thinking and working scientifically.	Creative and critical thinker	1, 1.1, 1.2, 2, 2.1, 2.2, 2.4, 2.6, 3, 3.4
2 Demonstrate content knowledge and pedagogies for effective science teaching and learning using a range of resources and including inquiry-based perspectives. Consider inclusive strategies	Empowered	2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.4, 5.1
3 Understand and make connections with research on science teaching and learning to the Early Years and Primary school context.	Sustainability-focussed	1.1, 1.2, 6, 6.2, 7.4
4 Practice and improve skills and abilities to enable the development of critically reflective practitioners who are responsive to complex learning contexts and consider personal learning and implications for student learning.	Creative and critical thinker	1.1, 1.2, 6, 6.2, 6.3, 6.4
5 Exercise informed professional judgment and decision making regarding science teaching, learning experiences and assessment strategies.	Creative and critical thinker	1.1, 2.1, 2.2, 2.3, 4.4, 5.1, 6.1

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE FOR TEACHING AND SCHOOL LEADERSHIP	
1	PROFESSIONAL KNOWLEDGE: 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.
1.2	Understand how students learn: Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.
2	PROFESSIONAL KNOWLEDGE: Know the content and how to teach it

CODE	COMPETENCY
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
2.2	Content selection and organisation: Organise content into an effective learning and teaching sequence.
2.3	Curriculum, assessment and reporting: Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.
2.4	Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between Indigenous and non-Indigenous Australians: Demonstrate broad knowledge of, understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages.
2.6	Information and Communication Technology (ICT): Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.
3	PROFESSIONAL PRACTICE: Plan for and implement effective teaching and learning
3.1	Establish challenging learning goals: Set learning goals that provide achievable challenges for students of varying abilities and characteristics.
3.2	Plan, structure and sequence learning programs: Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.
3.3	Use teaching strategies: Include a range of teaching strategies.
3.4	Select and use resources: Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.
4.1	Support student participation: Identify strategies to support inclusive student participation and engagement in classroom activities.
4.4	Maintain student safety: Describe strategies that support students' wellbeing and safety working within school and/or system, curriculum and legislative requirements.
5.1	Assess student learning: Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning.
6	PROFESSIONAL ENGAGEMENT: Engage in professional learning
6.1	Identify and plan professional learning needs: Demonstrate an understanding of the role of the Australian Professional Standards for Teachers in identifying professional learning needs.
6.2	Engage in professional learning and improve practice: Understand the relevant and appropriate sources of professional learning for teachers
6.3	Engage with colleagues and improve practice: Seek and apply constructive feedback from supervisors and teachers to improve teaching practices.
6.4	Apply professional learning and improve student learning: Demonstrate an understanding of the rationale for continued professional learning and the implications for improved student learning.
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.

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1. Pre-requisites

Enrolled in Program ED304, ED303

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

EDU107

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

Students will have multiple opportunities for early feedback, e.g., via examinations, tutorials, and discussions about the assessment. This information will be found in the assessment section of Canvas.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Examination - not Centrally Scheduled	Individual	30%	3 x 30 minutes	Throughout teaching period (refer to Format)	In Class
All	2	Plan	Individual	30%	2 sequenced lesson plans (2000 words, not including references)	Week 7	Online Assignment Submission with plagiarism check
All	3	Journal	Individual	40%	Weekly journal entries (2500 words, not including references)	Week 10	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Science Examination

GOAL:	The goal of this task is to demonstrate knowledge of science within the Australian Curriculum, science pedagogies and teaching strategies, and research on planning for the effective teaching and learning of Early Years science.
PRODUCT:	Examination - not Centrally Scheduled
FORMAT:	Weeks 3, 5, 9. You will answer questions related to science content within the Australian Curriculum, science pedagogies and teaching strategies, assessment and lesson planning for Early Years primary science teaching. Content will be drawn from learning materials and set readings. Questions will be a combination of multiple-choice, True or False, short answers and essays. These are closed book exams, and information for the exam will be covered during tutorials and through lecture resources.
CRITERIA:	**No.** / **Learning Outcome assessed** 1 Knowledge of science curriculum intent and content. — 2 2 Knowledge and justification of appropriate science pedagogy, inquiry and assessment for the age group. — 1 2 3 5 3 Knowledge of research on science teaching and learning. — 2 3 5
GENERIC SKILLS:	Problem solving, Information literacy

All - Assessment Task 2: Plan

GOAL:	The goal of this task is to complete lesson plans for a sequence of two Early Years primary science lessons.
PRODUCT:	Plan
FORMAT:	You will create two sequential lessons for an Early Years primary science classroom using the lesson plan template provided. The aim of the lessons will be based on Australian Curriculum content descriptors, and you will be given a selection of content descriptors to choose from (made available in tutorials and on Canvas). The lessons must apply appropriate and effective science planning pedagogies as demonstrated, discussed, modelled, and practised in tutorials. Your lesson sequence must also demonstrate the application of appropriate resources, the adoption of an inquiry-based learning approach, the use of inclusive teaching strategies and plans for formative assessment of the aim of each lesson, and next steps for learning.
CRITERIA:	

No.		Learning Outcome assessed
1	Identification of curriculum intent through alignment between curriculum content and lesson content.	1 2
2	Application of sequenced, age appropriate content through inclusive pedagogy and inquiry-based learning.	1 2 4 5
3	Knowledge of student misconceptions and appropriate formative assessment.	1 2 5
4	Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions.	3

GENERIC SKILLS:	Communication, Problem solving, Organisation, Information literacy

All - Assessment Task 3: Journal

GOAL:	The goal of this task is to document and reflect on your science knowledge and understanding throughout the duration of this course.
PRODUCT:	Journal
FORMAT:	Over the duration of this course, you will develop a weekly reflective journal to document the growth in your knowledge and understanding of Early Years primary classroom science education. The journal will include your weekly responses to questions and discussions from within tutorials about specific Early Years primary classroom science-related information. Your journal will be in electronic format (electronic device required in tutorials). More information and support mechanisms will be provided in Canvas and tutorials. APST: You will need to align your learning and growth with relevant APST descriptors, and identify broader professional science teaching network connections that will support your ongoing professional learning (APST 7.4) of science education.
CRITERIA:	

No.		Learning Outcome assessed
1	Knowledge of science content and pedagogy.	1 2
2	Reflection on and examination of personal growth about knowledge of science content, pedagogy teaching and learning.	1 2 4
3	Justification of teaching and learning strategies by drawing connections between tutorial activities, course materials and readings.	1 2 3 5
4	Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions.	4

GENERIC SKILLS:	Communication, Problem solving, Organisation, Information literacy

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Peter Loxley,Lyn Dawes,Linda Nicolls	2010	Teaching Primary Science	n/a	Pearson Education
Recommended	Allen, Michael	2014	Misconceptions In Primary Science	n/a	McGraw-Hill Education (UK)

8.2. Specific requirements

Students are required to bring supplies to aid tutorial activities (EG: laptop, camera) when needed. This will be discussed in lectures and tutorials.

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%
The course is graded using the Standard Grading scale
You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:
- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: 07 5430 1168 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call 07 5430 1226 or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au