



COURSE OUTLINE

EDU212 Teaching Science in the Early Years

Course Coordinator: Beverly Dann (blowe@usc.edu.au) **School:** School of Education and Tertiary Access

2021 Semester 1

USC Sunshine Coast
USC Moreton Bay
USC Fraser Coast

ON CAMPUS

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

Please go to the USC website 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 schooling (F-6). You will investigate contemporary curriculum, pedagogies, ways of thinking and working scientifically and develop inquiry-based perspectives which engage children in explorations of the biological environment, 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
ON CAMPUS			
Lecture – A blended learning approach is used to deliver the lecture for this course, including a mix of synchronous and asynchronous materials and activities accessed through Blackboard. This course will be supported by technology-enabled learning and teaching including recorded videos and Zoom.	2hrs	Week 1	10 times
Tutorial/Workshop – 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

1.3. Course Topics

- Australian Curriculum Science in the early and primary years (Biology focus)
- Understanding research on science teaching and learning
- Educator roles and developing scientific literacy and knowledge
- Designing science learning experiences and assessment strategies
- Teaching strategies; including play, real-life situations, inquiry-based and constructivist perspectives
- Critical reflection
- Using ICTs for quality teaching and learning
- Aboriginal and Torres Strait Islander influence in science and the environment

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	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Australian Institute for Teaching and School Leadership
<p>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.</p>	Creative and critical thinker	<p>1 - Know students and how they learn</p> <p>1.1 - Physical, social and intellectual development and characteristics of students</p> <p>1.2 - Understand how students learn</p> <p>2 - Know the content and how to teach it</p> <p>2.1 - Content and teaching strategies of the teaching area</p> <p>2.2 - Content selection and organisation</p> <p>2.4 - Understand and respect Aboriginal and Torres Strait Islander people to promote reconciliation between Indigenous and non-Indigenous Australians</p> <p>2.6 - Information and Communication Technology (ICT)</p> <p>3 - Plan for and implement effective teaching and learning</p> <p>3.4 - Select and use resources</p>
<p>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</p>	Empowered	<p>2 - Know the content and how to teach it</p> <p>2.1 - Content and teaching strategies of the teaching area</p> <p>3.1 - Establish challenging learning goals</p> <p>4.1 - Support student participation</p>
<p>3 Understand and make connections with research on science teaching and learning to the Early Years and Primary school context.</p>	Sustainability-focussed	<p>1.2 - Understand how students learn</p> <p>6 - Engage in professional learning</p> <p>6.2 - Engage in professional learning and improve practice</p>

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<p>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.</p>	Creative and critical thinker	1.1 - Physical, social and intellectual development and characteristics of students 1.2 - Understand how students learn 6 - Engage in professional learning 6.2 - Engage in professional learning and improve practice 6.3 - Engage with colleagues and improve practice 6.4 - Apply professional learning and improve student learning
<p>5 Exercise informed professional judgment and decision making regarding science teaching, learning experiences and assessment strategies.</p>	Creative and critical thinker	1.1 - Physical, social and intellectual development and characteristics of students 2 - Know the content and how to teach it 2.1 - Content and teaching strategies of the teaching area 2.2 - Content selection and organisation 2.3 - Curriculum, assessment and reporting 4 - Create and maintain supportive and safe learning environments 5.1 - Assess student learning 6 - Engage in professional learning

5. Am I eligible to enrol in this course?

Refer to the [USC 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 opportunity for early feedback on assessments through tutorials and mini video discussions about the assessment. This information will be found in the assessment section of Blackboard.

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	Quiz/zes	Individual	30%	3 x 30 minutes	Throughout teaching period (refer to Format)	In Class
All	2	Plan	Individual	30%	2 lesson plans	Week 7	Online Assignment Submission with plagiarism check
All	3	Journal	Individual	40%	Weekly journal entries	Week 11	Online Assignment Submission

All - Assessment Task 1: Quiz

GOAL:	The goal of this task is to demonstrate knowledge of the curriculum science content, teaching strategies, lesson planning and science teaching research.													
PRODUCT:	Quiz/zes													
FORMAT:	<p>Weeks 3, 5, 9.</p> <p>You will answer questions related to the Australian Curriculum, science content, science teaching strategies, assessment and lesson planning for early years and primary science teaching. Questions from the textbook and one science teaching article will be included as part of the exam questions. The articles will be provided and discussed in lecture videos.</p> <p>Questions will be a combination of multiple choice, T/F, short answer and essay. It is a closed book exam that will be completed during tutorial time. Information for the exam will be covered during tutorials and through Blackboard lecture resources.</p>													
CRITERIA:	<table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Knowledge of science curriculum intent and content</td> <td>2</td> </tr> <tr> <td>2</td> <td>Knowledge of appropriate science pedagogy, inquiry and assessment for the age group</td> <td>2 3 5</td> </tr> <tr> <td>3</td> <td>Knowledge of research on science teaching and learning</td> <td>3</td> </tr> </tbody> </table>	No.		Learning Outcome assessed	1	Knowledge of science curriculum intent and content	2	2	Knowledge of appropriate science pedagogy, inquiry and assessment for the age group	2 3 5	3	Knowledge of research on science teaching and learning	3	
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1	Knowledge of science curriculum intent and content	2												
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3	Knowledge of research on science teaching and learning	3												

All - Assessment Task 2: Plan

GOAL:	The goal of this task is to complete 2 Science lesson plans.
PRODUCT:	Plan
FORMAT:	<p>You will participate in tutorial activities that model and demonstrate effective science teaching for Early Years and Primary students. Science lesson plans follow a unique style that exemplifies a constructivist approach to learning. You will be expected to create this style of lesson plan. Lesson plans will be shown, discussed, modelled and practiced from week 1 so that you can develop effective science lesson plans for the course and while on school placements.</p> <p>Two complete lesson plans will be required to be completed as an individual task. Details about the two lesson plans will be discussed in tutorials. A template will be provided and must not be modified.</p> <p>You will need to consider: • science content • science teaching strategies • appropriate resources • inquiry approach • development of science concepts • inclusive strategies • formative assessment</p>

CRITERIA:	No.	Learning Outcome assessed
	1	Selects appropriate curriculum components and demonstrates effective knowledge of the content. 1 2
	2	Demonstrates appropriate use of inquiry processes 2
	3	Demonstrates effective lesson sequence and a range of resources 4 5
	4	Demonstrates inclusivity 1
	5	Applies appropriate formative assessment 5
	6	Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions 4

All - Assessment Task 3: Journal

GOAL:	The goal of this task is to document and reflect on your science learning journey
PRODUCT:	Journal
FORMAT:	<p>This is an individual task requiring you to participate in, record and discuss (during tutorials) specific early years and primary science related information. Questions provided in tutorial will help to guide your weekly discussions and reflections. Laptops or ipad/tablets will be needed during all 10 tutorials.</p> <p>The purpose of a journal is to record information over time so that changes in knowledge, attitudes, perceptions and actions can be revealed. These changes demonstrate your growth and learning through the course. Therefore, weekly entries are essential. The e-journal auto dates your entries and verifies your weekly contribution.</p> <p>The weekly up-loads to the e-journal will include responses to questions related to the following: • Connections to inquiry/interactive activity from tutorials • Australian Curriculum: Science • Research articles • Textbook readings • Personal growth and understanding/concerns about teaching science • Consideration of the impact of your professional learning on student learning The specifics about creating an e-journal will be provided in tutorials.</p> <p>You will need to register for the following e-journals: Penzu https://penzu.com/ Use the free version. Penzu is student friendly as it has more similarities to a word document and has a version for schools to purchase. It is mandatory that each person attends and participates in the group work and discussion sessions during tutorial (all materials are provided). Your work that is uploaded to Penzu is individual work and therefore is not able to be shared with your classmates.</p> <p>If you are absent, you will need to inform the Course Coordinator to schedule a make-up time. More information on this task will be provided in lectures and tutorials.</p>

CRITERIA:	No.	Learning Outcome assessed
	1	Knowledge of science curriculum 2
	2	Draws connections between tutorial activities and course readings 2 3
	3	Justifies teaching and learning strategies 5
	4	Reflects on and examines personal knowledge of science teaching and learning 4
	5	Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions 4

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. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

7.1. Schedule

PERIOD AND TOPIC	ACTIVITIES
Module 1 Weeks 1-5	Early and Primary science, interacting with the environment Science in Schools e-journal, photos, diagrams – recording learning Curriculum documents Biology Science content and pedagogy Yrs F-4 Science planning Teaching and Learning through Inquiry Teaching and learning in the community Reflecting on learning
Module 2 Weeks 6-10	Science planning Curriculum documents Biology Science Content and pedagogy Yrs 5-7 Indigenous influence in science Ecosystems and the environment Reflecting on learning

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 Blackboard 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	PUBLISHER
Required	Loxley, P.; Dawes, L.; Nicholls, L. & Dore, B.	2016	Teaching Primary Science	Pearson
Recommended	Allen, Michael	2014	Misconceptions in Primary Science 2nd Ed	Open University Press

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 Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

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. 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.

10.5. 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.

10.6. 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.

10.7. 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
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website: <http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.8. General Enquiries

In person:

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

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au