COURSE OUTLINE

EDU374 Teaching Science: The Sky is the Limit

School: School of Education and Tertiary Access

2025 | Semester 2

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 apply your well-developed science knowledge, teaching strategies and technical communications skills to explain abstract phenomena to primary science students. You will participate in adapting earth and space sciences content and electrical circuit expertise into engaging and rich learning activities. This course encourages you to demonstrate your well-developed knowledge and judgement of science, pedagogy and learning theory to creatively bring the science curriculum alive - the sky is the limit.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Tutorial/Workshop 1 – A blended learning approach is used to deliver this course. There will be a scheduled weekly tutorial of 2 hours. Weekly learning materials will be available to accompany all tutorials to support learning.	2hrs	Week 1	9 times
Learning materials – A blended learning approach is used to deliver the lecture for this course. This course will be supported by a range of materials and activities, technology-enabled learning and teaching including recorded videos.	2hrs	Week 1	10 times

1.3. Course Topics

- Australian Curriculum: Science in the primary years (Physical Sciences and Earth & Environmental Sciences focus)
- Scientific content relating to:
    - Sound and light
    - Systems and cycles including Earth's rotation, planets and orbits
    - Predictive phenomena on Earth, including seasons, eclipses, tides and the water cycle
    - Magnets and Electrical circuits
    - Changes in the earth's surface and sudden geological events
- Teaching Strategies; use of models, inquiry, demonstration, investigations, observation
- Professional practice; creating lessons, teaching lessons, collaboration
- Pedagogical Content Knowledge (PCK)

2. What level is this course?

300 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

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
1 Advanced demonstration of Science curriculum knowledge and pedagogy, including linking science with literacy, numeracy and ICTs.	Knowledgeable Empowered	2, 2.1, 2.5, 2.6
2 Plan and deliver teaching lessons that demonstrate advanced science content knowledge.	Knowledgeable Engaged	2, 2.1, 2.2, 2.3, 3, 3.2
3 Use Community of Practice to plan for teaching and support each other's development of knowledge and skills.	Empowered	6, 6.1, 6.2, 6.3, 7
4 Plan and deliver and reflect on teaching lessons that demonstrate effective and advanced science pedagogy; communication skills and teaching strategies.	Creative and critical thinker Engaged	2, 2.1, 2.2, 3, 3.2, 3.3, 3.4, 3.5, 3.6, 4
5 Effectively communicate advanced science content knowledge for a primary audience.	Knowledgeable	2, 2.1, 2.3, 3, 3.1, 3.5

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE FOR TEACHING AND SCHOOL LEADERSHIP	
2	PROFESSIONAL KNOWLEDGE: 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
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.
2.5	Literacy and numeracy strategies: Know and understand literacy and numeracy teaching strategies and their application in teaching areas.
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.

CODE	COMPETENCY
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.
3.5	Use effective classroom communication: Demonstrate a range of verbal and non-verbal communication strategies to support student engagement
3.6	Evaluate and improve teaching programs: Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning.
4	PROFESSIONAL PRACTICE: Create and maintain supportive and safe learning environments
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.
7	PROFESSIONAL ENGAGEMENT: Engage professionally with colleagues, parents/carers and the community

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

EDU212 or EDU107 and enrolled in Program ED304

5.2. Co-requisites

EDU309

5.3. Anti-requisites

Not applicable

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

As a culminating course for your specialisation in Science, it is expected that you have passed all previous Science courses in the Program and have a solid understanding of the curriculum content, pedagogy and teaching strategies.

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

Feedback is provided through participation in the tutorials and from quiz results.

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%	20 min each	Refer to Format	In Class
All	2	Plan	Individual	20%	completed template	Week 7	Online Assignment Submission with plagiarism check
All	3	Oral and Written Piece	Individual and Group	50%	Part A: Practice and feedback Part B: Teach 10- minutes & record on video Part C: Annotate video with personal reflections that link to Task 2 and relevant research.	Week 11	Online Submission

All - Assessment Task 1: Science Content Quiz

GOAL:	The goal of this task is to demonstrate advanced knowledge of science content required of primary school teachers.
PRODUCT:	Quiz/zes
FORMAT:	Closed book quizzes during tutorial weeks 3 and 6. The quizzes will cover science content, inquiry skills, and teaching strategies included in the weekly tutorials, learning materials and readings. Further information will be provided on Canvas.
CRITERIA:	

No.		Learning Outcome assessed
1	Knowledge of the Australian Curriculum: Science Earth and Space curriculum; including science concepts, Science Understanding, Science as Human Endeavour and Science Inquiry Skills	1
2	Knowledge and understanding of curriculum, assessment and teaching strategies related to Physical Science concepts such as sound, light, magnets and electricity.	1

GENERIC SKILLS:	

All - Assessment Task 2: Self critique

GOAL:	The goal of this task is to identify personal strengths and areas needing improvement against the science curriculum content, science skills, teaching strategies and The Australian Teaching Standards.
PRODUCT:	Plan
FORMAT:	This course is a culminating course for your Science Subject focus which provides you with extra courses to obtain more science content knowledge and understanding of how to teach science with modern inquiry techniques. (This does not make you a science specialist, but rather a primary teacher with more practice with science teaching.) As such you need to demonstrate a high standard of content knowledge and pedagogy including teaching strategies and use of inquiry skills. Therefore, you will use the provided template to demonstrate your perceived abilities during weeks 1 and 6 of the course. You will describe a plan of action to improve any areas of concern. This information may also be applied to your portfolio of evidence being collected for the BEd program that must be submitted during your final placement course. The self critique will include: • Knowledge and communication of science content • Knowledge and application of inquiry skills • Knowledge and application of science teaching strategies • Knowledge and application of assessment strategies • Australian Teaching Standards
CRITERIA:	

No.		**Learning Outcome assessed**
1	Demonstration of Science curriculum knowledge	1
2	Appropriate teaching strategies that follow the intentions of the 5E Inquiry model	2 4
3	Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions.	5
4	Application of effective diagnostic, formative and summative assessment	1

GENERIC SKILLS:	Communication, Problem solving, Organisation

All - Assessment Task 3: Teaching Segment

GOAL:	The goal of this task is to co-plan and co-teach a sequence of developmental science lessons then video yourself teaching a segment of a science lesson demonstrating advanced knowledge of science concepts and science pedagogy.
PRODUCT:	Oral and Written Piece
FORMAT:	Group component. With the unit provided, you are expected to work like teachers (with a group of peers) who are planning the unit of work for their classes. You will: - Discuss all components of the unit and raise any concerns. - Identify any changes required. - Make changes to lessons to suit our conditions and resources. - Assign lessons to teach. Individual component: The teaching segment has three parts. Part A (practice run): Following the unit sequence, a few students will teach one of the lessons in front of their group. You must bring teaching supplies or inform the tutor of your needs that may be borrowed from the resource HUB. We can have a couple of groups going at a time. You will receive feedback on your teaching presentation from peers and your tutor. This feedback is only provided to you to help you improve your next teaching performance which will be assessed by the tutor. IF there are too many students in the tutorial and not enough time to allow everyone to have a practice run, we will have as many as possible practice with group and tutor feedback so all can learn from others' performances. This will be completed in week 7 or 8 (flexible). Part B (assessment): We will repeat the teaching of each unit but with groups spread out in the room and hall so all may operate at the same time. The teaching segments will be taught individually by different members of your group during the tutorial and will be video recorded on your personal device. You will be assessed on your knowledge of the science concepts, the use of resources, pedagogy, and communication skills. This will be completed in week 9 or 10 (flexible). The link to your annotated video will be submitted in Canvas. Part C (reflective annotations): In your video, identify approximately 10 reflection points that correspond to your reflections in Task 2 and from the information discussed in the practice videos viewed in the course. Using the template provided, critically reflect on your teaching performance by providing consideration of strengths and weaknesses that are further supported by research for effective practice. Your reflections should demonstrate your deepening mastery of science content and pedagogy and your knowledge of teaching primary-aged students.
CRITERIA:	

No.		Learning Outcome assessed
1	Planning and development of cohesive science lessons aligned with the science curriculum requirements	2 3 4
2	Advanced knowledge of science concepts	1
3	Demonstration of highly effective teaching strategies and use of resources appropriate to science teaching and learning	4
4	Critical reflection on teaching performance	4
5	Written and verbal communication skills and academic literacies including English expression, grammar, spelling, punctuation, APA referencing conventions.	5

GENERIC SKILLS:	Communication, Collaboration, Problem solving, Organisation, Applying technologies, 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 Nicholls,Babs Dore	2017	Teaching Primary Science, 3rd Edition	n/a	Routledge

8.2. Specific requirements

Students are required to provide materials and resources related to assignments.

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