COURSE OUTLINE

EDU761 Teaching Senior Secondary Science 2

School: School of Education and Tertiary Access

2025 | Semester 2

UniSC Sunshine Coast
UniSC Moreton Bay

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 unisc.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

This course is for students who have two teaching areas in the senior sciences. In this course you will develop specialised knowledge and skills for implementing the Queensland Senior Secondary Science Curriculum in your subject area. This course extends your knowledge of Science teaching using principles of problem-based learning, experiential learning and experimental investigation. You will learn how to design lessons, units and work programs and explore a range of pedagogy, assessment, and reporting strategies that maximise learning outcomes for students.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – You are required to engage with a range of weekly materials delivered through Canvas including course recordings, reading materials and activities	2hrs	Week 1	9 times
Tutorial/Workshop 1 – On campus engagement and application of learning materials	2hrs	Week 1	10 times

1.3. Course Topics

- Queensland Secondary Senior Science curricula
- Curriculum planning and alignment of content, pedagogy and assessment for senior science
- Teaching and learning strategies for engagement of diverse learners in science
- Assessment and reporting practices in senior science
- Facilitating engaging experimental investigations for your students
- Classroom safety and risk assessment
- Integrating resources including information and communication technologies (ICT) into science curriculum
- Literacy and numeracy in senior science
- Embedding Aboriginal and Torres Strait Islander histories, culture and knowledge in senior science curriculum

2. What level is this course?

700 Level (Specialised)

Demonstrating a specialised body of knowledge and set of skills for professional practice or further learning. Advanced application of knowledge and skills in unfamiliar contexts.

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 Demonstrate mastery of your application of Science content and senior Science curriculum knowledge in developing Science inquiry sequences, teaching and learning activities and assessment.	Creative and critical thinker Engaged	2.1, 2.2, 2.3, 3.1, 3.2, 3.3
2 Apply deep knowledge of teaching and learning strategies that support the diversity of learners engaged in senior Science.	Knowledgeable Engaged	2.4, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 5.1
3 Develop and apply deep understanding of the principles of assessment and reporting that monitor senior students' levels of achievement and progress in senior Science.	Knowledgeable Engaged	5.1, 5.2, 5.3, 5.4, 5.5
4 Apply deep knowledge of planning, resourcing, teaching and managing senior Science.	Knowledgeable Engaged	2.1, 2.2, 2.3, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 4.5, 5.1
5 Create oral and/or written communication concerning curriculum teaching, learning and assessment in senior secondary Science for classroom and professional contexts.	Knowledgeable	3.5

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE FOR TEACHING AND SCHOOL LEADERSHIP	
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.
2.5	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.

CODE	COMPETENCY
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.
3.5	Use effective classroom communication: Demonstrate a range of verbal and non-verbal communication strategies to support student engagement
4.1	Support student participation: Identify strategies to support inclusive student participation and engagement in classroom activities.
4.2	Manage classroom activities: Demonstrate the capacity to organise classroom activities and provide clear directions
4.3	Manage challenging behaviour: Demonstrate knowledge of practical approaches to manage challenging behaviour.
4.4	Maintain student safety: Describe strategies that support students' wellbeing and safety working within school and/or system, curriculum and legislative requirements.
4.5	Use ICT safely, responsibly and ethically: Demonstrate an understanding of the relevant issues and the strategies available to support the safe, responsible and ethical use of ICT in learning and teaching.
5.1	Assess student learning: Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning.
5.2	Provide feedback to students on their learning: Demonstrate an understanding of the purpose of providing timely and appropriate feedback to students about their learning
5.3	Make consistent and comparable judgements: Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning.
5.4	Interpret student data: Demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice.
5.5	Report on student achievement: Demonstrate understanding of a range of strategies for reporting to students and parents/ carers and the purpose of keeping accurate and reliable records of student achievement

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 ED706 and two from Biology, Chemistry, Physics, or Marine Science teaching areas

5.2. Co-requisites

EDU760

5.3. Anti-requisites

Not applicable

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

Not applicable

5.5. Microcredential Information

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

In Week 2 you will lead a (formative) group conversation similar to Task 1 for practice and feedback.

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	Oral	Individual	25%	10 min presentation	Refer to Format	In Class
All	2	Examination - not Centrally Scheduled	Individual	30%	60 minutes	Week 9	In Class
All	3	Portfolio	Individual	45%	2200 words	Week 10	Online Assignment Submission with plagiarism check

All - Assessment Task 1: Leading a science demonstration and class discussion

GOAL:	The goal of this task is to demonstrate your capacity to engage students with Science through demonstrations and discussion. For students who do two Science teaching areas this task is for teaching area 2. For example, if you do a Biology major and a Chemistry minor, then this will be a chemistry task.
PRODUCT:	Oral
AUTHORSHIP STATEMENT:	
FORMAT:	Submit: Week 4 or 5 as arranged with your tutor. You are taking the role of a teacher of senior students who is presenting a demonstration stimulus (real, modelled or virtual) and associated discussion linked to a key idea or key concept of your senior syllabus.The demonstrations and class discussions must be based on 2019 QCAA senior syllabus subject matter. The purpose of this is to develop your ability to facilitate a class discussion using Socratic questioning, to engage every student in the discussion, and to guide the discussion towards desired outcomes linked to your curriculum.
CRITERIA:	

No.		Learning Outcome assessed
1	Application of knowledge of science content and senior Science curriculum elements to plan, resource and teach and manage an inquiry learning activity.	1
2	Application of deep knowledge of teaching and learning strategies that support the diversity of learners engaged in senior Science.	2
3	Employs effective verbal and non-verbal communication skills	5

GENERIC SKILLS:	

All - Assessment Task 2: Exam

GOAL:	The goal of this task is to demonstrate your subject-specific curriculum and pedagogical content, knowledge and skills.
PRODUCT:	Examination - not Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	You will participate in a short answer quiz to demonstrate your knowledge and understanding with course topics including: • Science pedagogical and content knowledge for senior secondary classroom practice • Science inquiry learning, curriculum, planning and teaching strategies that engage senior science students and their application in the senior Science syllabuses • Ethical and responsible selection and use of resources including ICT • Purpose of formative assessment and feedback to students (including feedback, moderation and reporting) • Personal reflection on practice This task may include a laboratory skills assessment You will be required to undertake the exam during class time
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Demonstrated knowledge and skills for senior secondary science curriculum, teaching and assessment. — 1
GENERIC SKILLS:	Communication, Organisation

All - Assessment Task 3: Inquiry Science Portfolio

GOAL:	The goal of this task is to demonstrate your understanding of science inquiry learning and how to integrate inquiry in student experiments using a 21st Century approach and skills.
PRODUCT:	Portfolio
AUTHORSHIP STATEMENT:	
FORMAT:	This task is for teaching area 2. For example, if you do a Biological Sciences major and a Chemical Sciences minor then this will be a chemistry task Prepare a portfolio that identifies, describes and justifies inquiry learning in school science that includes: • an overview of inquiry learning for Queensland science students • a range of inquiry approaches to suggested and mandatory practicals from your QCAA senior syllabus that include 21st Century Skills • a brief analysis of what knowledge and skills students require for the QCAA senior science Student experiment or Research investigation. Note: This must be different from what you choose in Teaching Senior Secondary Science 1. • an original, engaging three lesson sequence that demonstrates appropriate application of an inquiry approach to a QCAA senior science student experiment or research investigation assessment • A justification of your choice of resources, teaching strategies, and how you will challenge all students • A description of diagnostic or formative assessment as appropriate, including an explanation and justification of the feedback process you will use with students throughout the lesson sequence.
CRITERIA:	

No.		**Learning Outcome assessed**
1	Application of science curriculum knowledge and resources to develop science inquiry sequences that engage and include all students.	1
2	Application of teaching and learning strategies that support a diversity of learners to engage with senior science including the literacy, numeracy, ICT and 21st-century skills as appropriate.	2
3	Demonstrated understanding of planning, resourcing, managing and assessing learning experiences for students of Senior Secondary Science.	3 4
4	Written communication and academic literacies including grammar, English expression, APA referencing conventions, and technical accuracy.	5

GENERIC SKILLS:	Communication, Problem solving

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

You need regular access to the resource(s) below. Many texts are available as ebooks through the Library at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Vaille Dawson,Grady Venville,Jennifer Donovan	2019	The Art of Teaching Science	n/a	Routledge

8.2. Specific requirements

You will need a lab coat for tutorials
You will need to successfully complete a laboratory induction quiz in week 1 prior to attending tutorials

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also 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. 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

10.5. 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.

10.6. 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

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