USC

Course Outline

Code: EDU354
Title: Teaching Junior Secondary Science 2

School: Education
Teaching Session: Semester 1
Year: 2019
Course Coordinator: Tim Strohfeldt   Email: tstrohfe@usc.edu.au
Course Moderator: Dr Kenneth Young   Email: kyoung@usc.edu.au

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
This course is only for students who have two teaching areas in the sciences. In this course you will deepen your knowledge of the Australian Curriculum: Science exploring links between curriculum strands, science 'Big Ideas' and science classroom activities for middle-phase learners. You will design, plan and participate in hands-on activities and investigations using Big Ideas and inquiry based learning and linked with the Australian Curriculum Science.

1.2   Course topics
- Australian Curriculum: Science (ACS) – Science Understanding, Science Inquiry Skills and Science as a Human Endeavour.
- Linking the ACS with 'Big Ideas' and teaching and learning activities
- Exploring Scientific Investigations
- Science pedagogy, teaching strategies and managing a Science classroom for student engagement, inquiry learning and active learning for a diversity of middle phase students
- Linking learning theory and practice through planning instruction and assessment to support and extend a diversity of learner's
- Integrating ICT, literacy and numeracy in classroom activities
- Professional practice and risk management in Science classrooms
- Reflective practice; responding to students' needs

2.   What level is this course?
300 level Graduate - Independent application of graduate knowledge and skills. Meets AQF and professional requirements. May require pre-requisites and developing level knowledge/skills. Normally taken in the 3rd or 4th 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?

Specific Learning Outcomes On successful completion of this course you should be able to:	Assessment Tasks You will be assessed on the learning outcome in task/s:	Graduate Qualities or Professional Standards mapping Completing these tasks successfully will contribute to you becoming:
Apply knowledge of the Australian Curriculum, Science 'big ideas' and pedagogies for learning, inclusion and engagement to develop a sequence of lesson plans in Science.	1. Lesson Sequence Folio 2. Science Program Evaluation	Knowledgeable. Empowered.
Apply knowledge of inquiry-based pedagogies, classroom management and laboratory safety to design classroom activities in Science.	1. Lesson Sequence Folio 2. Science Program Evaluation	Knowledgeable. Empowered.
Professionally reflect and act on principles of curriculum design, implementation and assessment in relation to teaching Science.	1. Lesson Sequence Folio 2. Science Program Evaluation	Knowledgeable. Empowered.
Employ effective language, structure and text to communicate curriculum strategies and ideas.	1. Lesson Sequence Folio 2. Science Program Evaluation	Knowledgeable. Empowered.

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   Enrolment restrictions

Students may only enrol in this course if they have two Science teaching areas. Enrolled in Program SE303 and a Biological Science AND Chemical Science major or minor or enrolled in Program UU301 or XU301.

5.2   Pre-requisites

Nil

5.3   Co-requisites

EDU352

5.4   Anti-requisites

Nil

5.5   Specific assumed prior knowledge and skills (where applicable)

Nil

6.   How am I going to be assessed?

6.1   Grading scale

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

6.2   Details of early feedback on progress

During this course you will design and deliver junior secondary science lessons in partnership with your tutor and peers from Week 3 onwards. Your tutor and peers will give you immediate verbal feedback and weekly written feedback throughout.

6.3 Assessment tasks

Task No.	Assessment Tasks	Individual or Group	Weighting	What is the duration / length?	When should I submit?	Where should I submit it?
1	Lesson Sequence Folio	Individual	50%	3000 words	Progressive submissions due 4pm Wed in Weeks 3 - 9.	Blackboard, Safe Assign
2	Science Program Evaluation	Individual	50%	1500 words	Tuesday Week 10	Blackboard, Safe Assign
			100%			

Assessment Task 1: Lesson Sequence Folio

Goal:	The goal of this task is to apply your science pedagogical content knowledge and reflective teaching practice to progressively plan and deliver a sequence of science lessons)
Product:	A sequence of lesson plans and planning notes
Format:	You will progressively compile a sequence of lesson plans that include learning goals, activity planning, and risk management. With each lesson plan you will action experiential learning; reflecting and inferring from peer feedback, self-appraisal and formative assessments for subsequent lesson planning. You will also write two communications for your students' parents.
Criteria:	• Applying knowledge of the Australian Curriculum, Science 'big ideas' and pedagogies for learning, inclusion and engagement to develop a sequence of lesson plans in Science • Applying knowledge of classroom management, laboratory safety, ICT, literacy and numeracy to design classroom activities in Science. • Professionally reflecting and acting on principles of curriculum design, implementation and assessment in relation to teaching Science • Use of language, structure and text to communicate curriculum strategies and ideas.

Generic skill assessed	Skill assessment level
Organisation	Introductory

Assessment Task 2: Science Program Evaluation

Goal:	The goal of this task is to evaluate an inquiry-based science program)
Product:	Written Science Program Evaluation
Format:	You will write an evaluation of the science extension program that you planned and experienced via Task 1. Your evaluation will include: • The program objectives and an overview of the program. • A critical review of the science extension program goals and implementation supported by education literature and including accounts of project-based learning and experiential learning in practice. • How you might transfer your experiences to junior secondary science classrooms
Criteria:	• Applying knowledge of the Australian Curriculum, Science 'big ideas' and pedagogies for learning, inclusion and engagement to evaluate a Science lesson sequence • Applying knowledge of inquiry-based pedagogies for classroom activities in Science. • Reflection of curriculum design, teaching and learning in relation to teaching science. • Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions.

Generic skill assessed	Skill assessment level
Organisation	Introductory

7.   What are the course activities?

7.1   Directed study hours

The directed study hours for this course are a portion of the workload for this course. A 12-unit course will have a total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. A blended learning approach is used to deliver this course, including a mix of synchronous and asynchronous materials and activities accessed through Blackboard. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

7.2   Course content

Teaching Week / Module	What key concepts/ content will I learn?	What activities will I engage in to learn the concepts/content?	
		Directed Study Activities	Independent Study Activities
Module 1 Weeks 1-2	Previewing and planning science curriculum	Considering students' needs during the primary to lower secondary school transition Student-centred approaches to Curriculum design Diagnosing student thinking to identify conceptions and misconceptions Science-pedagogy content knowledge	Planning and preparing for delivery of a science extension program
Module 2 Weeks 3-10	Facilitating engagement and learning for middle-phase science students	Designing inquiry-based activities to develop conceptual understanding, scientific literacy and critical and creative thinking skills Exploring middle-phase pedagogies for inclusion, engagement and scientific literacy Evaluating scientific activities for middle-phase classrooms including risk assessments Examining teaching resources including ICT and its use in science teaching and assessment Developing literacy and numeracy in Science Exploring methods to evaluate student data and set learning goals Exploring different types of assessment, feedback, moderation, reporting in science Examining assessment 'of, for and as' learning in science	Designing and preparing science lessons. Reflecting on and evaluating teaching and learning events. Reporting on lesson activities and student progress

Please note that the course activities may be subject to variation.

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

Please note that 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)

Model rocketry kit (organised in class in week 1).

8.2   Specific requirements

Nil

9.   Risk management

This course and its assessments require participation in activities conducted with students in a local school. You must have a current Blue Card to participate in these activities.

There is minimal health and safety risk in this course. It is your responsibility to familiarise yourself with the Health and Safety policies and procedures applicable within campus areas. During visits to local schools you will be required to meet the safety requirements of the school and to familiarise yourself with the Health and Safety policies and procedures of that school.

You will require a current Blue Card to be allowed to participate in school visits.

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

10.3   Assessment: Submission penalties

Late submission of assessment tasks will 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 and supply the required documentation to negotiate an outcome.

10.4   Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to Student Hub.

Contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au

10.5   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

10.6   General Enquiries

In person:
- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **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

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au

10.7 School specific information

The assessment tasks in this course support pre-service teachers to explicitly demonstrate the following Australian Professional Standards for Teachers (Graduate):

Assessment Task	Australian Professional Standards for Teachers (Graduate)
Task 1: Lesson Sequence Folio	1.1 Demonstrate knowledge and understanding of physical, social and intellectual development and characteristics of students and how these may affect learning 2.1 Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area. 2.2 Organise content into an effective learning and teaching sequence. 2.3 Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans. 2.4 Demonstrate broad knowledge of, understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages. 2.5 Know and understand literacy and numeracy teaching strategies and their application in teaching areas. 2.6 Implement teaching strategies for using ICT to expand curriculum learning opportunities for students. 3.1 Set learning goals that provide achievable challenges for students of varying abilities and characteristics. 3.2 Plan lesson sequences using knowledge of student learning, content and effective teaching strategies. 3.3 Include a range of teaching strategies. 3.4 Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning. 3.5 Demonstrate a range of verbal and non-verbal communication strategies to support student engagement 3.6 Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning. 4.1 Identify strategies to support inclusive student participation and engagement in classroom activities. 4.2 Demonstrate the capacity to organise classroom activities and provide clear directions. 4.3 Demonstrate knowledge of practical approaches to manage challenging behaviour. 4.5 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 Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning. 5.2 Demonstrate an understanding of the purpose of providing timely and appropriate feedback to students about their learning. 5.3 Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning. 5.4 Demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice. 5.5 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.

Task 2: Science Program Evaluation	1.1 Demonstrate knowledge and understanding of physical, social and intellectual development and characteristics of students and how these may affect learning
	2.1 Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.
	2.5 Know and understand literacy and numeracy teaching strategies and their application in teaching areas.
	2.6 Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.
	3.1 Set learning goals that provide achievable challenges for students of varying abilities and characteristics.
	3.3 Include a range of teaching strategies.
	3.4 Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.
	3.6 Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning.
	4.1 Identify strategies to support inclusive student participation and engagement in classroom activities.
	4.3 Demonstrate knowledge of practical approaches to manage challenging behavior.
	4.5 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 Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning.
	5.2 Demonstrate an understanding of the purpose of providing timely and appropriate feedback to students about their learning.
	5.3 Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning.
	5.4 Demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice.