Course outline

Code: EDU212
Title: Science Teaching in the Early Years

Faculty of: Science, Health, Education and Engineering
Teaching Session: Semester 1
Year: 2017
Course Coordinator: Beverly Lowe    Tel: 5459 4766    Email: blowe@usc.edu.au
Course Moderator: Carol Smith

1. What is this course about?

1.1 Course description
In this course you will explore and develop an understanding of learning and teaching science in the early and primary years of schooling. You will investigate contemporary curriculum, pedagogies and ways of thinking and working scientifically and develop inquiry-based perspectives which engage young children in explorations of science and the environment in their daily life. You will use diverse pedagogies for developing learning experiences, assessment strategies and scientific literacy in the biological sciences.

1.2 Course content
- Australian curriculum Science in the early and primary years
- 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 history and culture as it relates to science and the environment

2. Unit value
12 units
3. **How does this course contribute to my learning?**

<table>
<thead>
<tr>
<th>On successful completion of this course you should be able to:</th>
<th>You will be assessed on the learning outcome in task/s:</th>
<th>Completing these tasks successfully will contribute to you becoming:</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>2: Inquiry Activities 3 Sequential Lesson Plans</td>
<td>Creative and critical thinkers.</td>
</tr>
<tr>
<td>Practice and improve skills and abilities to enable the development of critically reflective practitioners who are responsive to complex learning contexts.</td>
<td>1: Science Position Paper 2: Inquiry Activities</td>
<td>Sustainability-focussed.</td>
</tr>
<tr>
<td>Exercise informed professional judgment and decision making in designing science teaching and learning experiences and assessment strategies.</td>
<td>3: Sequential Lesson Plans</td>
<td>Creative and critical thinkers</td>
</tr>
</tbody>
</table>

4. **Am I eligible to enrol in this course?**

Refer to the *Undergraduate Coursework Programs and Awards - Academic Policy* for definitions of “pre-requisites, co-requisites and anti-requisites”

4.1 **Enrolment restrictions**

Students must be enrolled in ED303 or ED304

4.2 **Pre-requisites**

Nil

4.3 **Co-requisites**

Nil

4.4 **Anti-requisites**

EDU107

4.5 **Specific assumed prior knowledge and skills (optional)**

N/A

5. **How am I going to be assessed?**

5.1 **Grading scale**

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

<table>
<thead>
<tr>
<th>Task No.</th>
<th>Assessment Tasks</th>
<th>Individual or Group</th>
<th>Weighting %</th>
<th>What is the duration / length?</th>
<th>When should I submit?</th>
<th>Where should I submit it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Science Position Paper</td>
<td>Individual</td>
<td>30%</td>
<td>1600-1800 words</td>
<td>Week 5 Monday 9am</td>
<td>Safe Assign</td>
</tr>
<tr>
<td>2</td>
<td>Inquiry Activities</td>
<td>Individual</td>
<td>50%</td>
<td>Weekly journal entries</td>
<td>Week 8 Monday 9am</td>
<td>Safe Assign</td>
</tr>
<tr>
<td>3</td>
<td>Sequential Lesson Plans</td>
<td>Individual</td>
<td>20%</td>
<td>Completed template</td>
<td>Week 11 Monday 9am</td>
<td>Safe Assign</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td></td>
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</tr>
</tbody>
</table>

Assessment Task 1: Science Position Paper

**Goal:** The goal of this task is to identify and discuss the issues around preservice teachers and teachers teaching early years/primary school science.

**Product:** Essay

**Format:** You will read and reflect on a minimum of three of the articles found on Blackboard about teaching early/primary school science.

You will discuss about the issues around teachers teaching science in primary and early years then consider where you are in relation to teaching science. Possible discussion points should include:

- Science background
- Experiences with and attitudes towards science
- Knowledge of science content/processes
- Confidence and ability to teach the content/processes
- Thoughts about the type of teacher you would like to be
- Your Personal goals for science teaching

There is a specific writing style for university essays you are meant to follow and this essay structure will be discussed during lectures with examples to view. In order to enhance your understanding, it would be beneficial to have read at least one article prior to each lecture. In this way you will be able to participate in discussions and receive some formative feedback prior to submission. This will not be a tutorial discussion point as tutorials will focus on tasks 2 and 3. Please reference with APA style referencing.

**Criteria**

- Identification of pertinent data from early/primary science teaching articles.
- Discussion of pertinent data from early/primary science teaching articles.
- Written reflection of experiences and goals in relation to teaching science.
- Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions.

**Generic skill assessed**

<table>
<thead>
<tr>
<th>Communication</th>
<th>Developing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Literacy</td>
<td>Developing</td>
</tr>
</tbody>
</table>
Assessment Task 2: Inquiry Activities

**Goal:** Document and reflect on your learning journey

**Product:** An e-journal with documented weekly learning and reflections

**Format:** This is a **individual task** requiring you to record your personal growth and abilities in relation to specific early years and primary science content developed through inquiry activities as well as create and keep an e-journal with Penzu that responds to questions based on science content and processes provided in lecture and tutorials. Laptops or ipad/tablets will be needed.

**The weekly upload to the e-journal will include:**
- Weekly inquiry activity from tutorial
- Name of curriculum content and year level
- Explanations about the science concepts
- Drawings, charts, tables from tutorial activities
- Assessment in science
- Photographs of activities
- Consideration of risks
- Reflections – weekly: 50-75 words

The specifics about creating an e-journal will be provided in tutorials. You will need to register for: e-journal: [https://penzu.com/](https://penzu.com/) Use the free version.

It is mandatory that each person attends and participates in the group work and discussion sessions. Your work that is uploaded to Penzu is individual work and therefore is unable to be shared with your classmates. 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.

**Criteria**
- Collection and recording through ICT of accurate and detailed information about science content/pedagogy
- Reflection on personal knowledge of science teaching and learning with reference to course activities and readings.
- Written communication skills and academic literacies including English expression grammar, spelling, punctuation, APA referencing conventions

<table>
<thead>
<tr>
<th>Generic skill assessed</th>
<th>Skill assessment level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation</td>
<td>Developing</td>
</tr>
<tr>
<td>Communication</td>
<td>Developing</td>
</tr>
</tbody>
</table>

**Assessment Task 3: Sequential Lesson Plans**

**Goal:** The goal of this task is to create sequential lesson plans in biological science

**Product:** 2 lesson plans

**Format:** You will create 2 sequential and development lesson plans based upon the course learnings. These lesson plans will be created on the modified lesson planning template provided.

You will be expected to:
- Choose the biological content and year level
- Demonstrate curriculum alignment
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- Demonstrate knowledge of science content and pedagogy
- Demonstrate correct sequence and development of content
- Include resources
- Situate the lessons within the Engage and Explore phases
- Complete the Assessing students section.

Each lesson needs to fit within the required time-frame for the year level chosen. The lessons will introduce the concept and need to be the first two lessons of the 5E’s and follow the intentions of the 5E’s inquiry approach.

<table>
<thead>
<tr>
<th>Criteria</th>
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</tbody>
</table>

- Identification and alignment of curriculum with lesson content
- Demonstration of appropriate pedagogy and inquiry learning and assessing for the age group
- Demonstration of appropriate sequencing and development of content
- Written communication skills and academic literacies including English expression, grammar, spelling, punctuation, APA referencing conventions.

<table>
<thead>
<tr>
<th>Generic skill assessed</th>
<th>Skill assessment level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Developing</td>
</tr>
<tr>
<td>Organisation</td>
<td>Developing</td>
</tr>
</tbody>
</table>

5.3 Additional assessment requirements

Blackboard
As a student enrolled in this course you will have access to course information on the Blackboard site. You are strongly recommended to log onto the course site on a regular basis. All course announcements, course changes, posting of course materials and grades (via My Interim Results) will be accessed through Blackboard. It is your responsibility to ensure you have adequate internet access (either off campus or on-campus) in order to access Blackboard regularly and to complete required assessment tasks.

Safe Assign
In order to minimise incidents of plagiarism and collusion, this course may require that some of its assessment tasks are submitted electronically via Safe Assign. This software allows for text comparisons to be made between your submitted assessment item and all other work that Safe Assign has access to. If required, details of how to submit via Safe Assign will be provided on the Blackboard site of the course.

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

5.4 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.
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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.

6. How is the course offered?
6.1 Directed study hours
2 hour lecture and 2 hour tutorial per week for 10 weeks

6.2 Teaching semester/session(s) offered
Semester 1 each year

6.3 Course activities

<table>
<thead>
<tr>
<th>Teaching Week / Module</th>
<th>What key concepts/content will I learn?</th>
<th>What activities will I engage in to learn the concepts/content?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1 Weeks 1-7</td>
<td>Early and Primary science, interacting with the environment Science in Schools Curriculum documents Science content and pedagogy Yrs F-6 Teaching and Learning through Inquiry (5 E's) Reflecting on learning</td>
<td>Interactive activities related to science curriculum, content and pedagogy; inquiry activities connected to task 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laptops will be required.</td>
</tr>
<tr>
<td>Module 2 Weeks 8-10</td>
<td>Science lesson planning Curriculum documents Indigenous lifestyle and science Teaching and learning in the community Reflecting on learning</td>
<td>Interactive and group activities; Sample lesson plans; Curriculum/assignment activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Readings and viewings found on Blackboard. Create sequential lesson plans.</td>
</tr>
</tbody>
</table>

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

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

7.1 Prescribed text(s)
Please note that you need to have regular access to the resource(s) listed below:

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Title</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loxley, P.; Dawes, L.; Nicholls, L. &amp; Dore, B.</td>
<td>2010</td>
<td>Teaching Primary Science</td>
<td>Pearson</td>
</tr>
</tbody>
</table>

7.2 Required and recommended readings
Lists of required and recommended readings may be found for this course on its Blackboard site. These materials/readings will assist you in preparing for tutorials and assignments, and will provide further information regarding particular aspects of your course.
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7.3 Specific requirements
Students are required to bring supplies to aid tutorial activities (EG: laptop, camera) when needed. This will be discussed in lecture and tutorials.

7.4 Risk management
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.

8. How can I obtain help with my studies?
In the first instance you should contact your tutor, then the Course Coordinator. Additional assistance to all students through Peer Advisors and Academic Skills Advisors. You can drop in or book an appointment. To book: Tel: +61 7 5430 2890 or Email: studentcentral@usc.edu.au

9. Links to relevant University policies 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


10. Faculty specific information
The assessment tasks in this course support pre-service teachers to explicitly demonstrate the following Australian Professional Standards for Teachers (Graduate) and QCT Professional Standards for Queensland Teachers (Graduate Level).

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Australian Professional Standards for Teachers (Graduate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1: Science Position Paper</td>
<td>1.2, 6.4</td>
</tr>
<tr>
<td>Task 2: Inquiry Study</td>
<td>2.1,3.2, 3.3, 4.1, 4.4, 4.5, 6.4, 7.4</td>
</tr>
<tr>
<td>Task 3: Sequential Lesson Plans</td>
<td>2.1, 2.2, 2.3, 3.2, 3.4</td>
</tr>
</tbody>
</table>

General enquiries and student support
In person:
- **Sippy Downs** - Student Central, Ground Floor, Building C
- **USC SouthBank** - Student Central, Building B, Ground floor (level 1)
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast** - Student Central, Building A

Tel: +61 7 5430 2890
Email: studentcentral@usc.edu.au