



School of Education

EDST6922
Science Method 1

Term 1, 2019

1. LOCATION

Faculty of Arts and Social Sciences
School of Education
EDST6922 Science Method 1 (6 units of credit)
Term 1 2019

2. STAFF CONTACT DETAILS

Course Coordinator: Rana Kaddour
Email: r.kaddour@unsw.edu.au
Availability: Please email for appointment

Tutor: Oriana Miano
Email: o.miano@unsw.edu.au
Availability: Please email for appointment

Tutor: Jennifer Ming
Email: j.ming@unsw.edu.au
Availability: Please email for appointment

Tutor: Matthew Couani
Email: z3060870@unsw.edu.au
Availability: Please email for appointment

3. COURSE DETAILS

Course Name	Science Method 1
Credit Points	6 units of credit (uoc)
Workload	Includes 150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc.
Schedule	http://classutil.unsw.edu.au/EDST_T1.html

SUMMARY OF COURSE

This initial teacher education course is designed to develop appropriate pedagogies for teaching Science, as well as offering an insight into the principles and practices for learning Science. Teacher education students will develop skills in planning and teaching lessons, contextualising science within the broader school curriculum, managing practical work in science classrooms and integrating ICT resources into lessons. Important issues such as student prior learning (including stage 3 outcomes), assessment, student differences and safety are also considered. Teacher education students will critically evaluate models of pedagogy and the features of effective classroom practice.

3.4.1 Demonstrate knowledge of a range of resources including ICT that engage students in their learning.

3.5.1 Demonstrate a range of verbal and non-verbal communication strategies to support student engagement.

3.6.13

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH

Lectures, tutorials and assignments will cover a variety of approaches to teaching and learning in the Science classroom. Emphasis will be placed on the relationship between the nature and practice of Science, the role and value of science in society and science pedagogy. A particular focus will be on strategies that can promote student engagement and achievement in Science.

	<p>including promoting inclusion and supporting students with disabilities Using data loggers</p>	<p>participation and engagement</p> <p>Microteaching</p>
<p>7 1 Apr</p>	<p>Planning Units of Work Using the Stage 4/5 Syllabus to sequence subject content across lessons within a unit of work Planning Units of Work: embedding Aboriginal and Torres Strait Islander histories and cultures in Science</p>	<p>Content selection and scope of content for effective lesson sequences for one stage</p> <p>Microteaching</p>
<p>8 8 Apr</p>	<p>Teaching strategies to respond to individual needs and backgrounds Importance of matching teaching strategies to individual needs Appropriate selection of ICT resources to support learning</p>	<p>How to use ICT to engage students with subject content</p> <p>Microteaching</p>
Teaching Break		
<p>9 29 Apr</p>	<p>Planning for mixed ability classes Planning for differentiation: What is it and how is it implemented in the classroom to meet student needs? The pedagogy and organisational needs for group work</p>	<p>Strategies for differentiating subject content Self and peer assessment as formative assessment strategies</p>
<p>10 6 May</p>	<p>Preparing for Professional Experience Becoming a reflective teacher through the feedback cycle Organisational strategies</p>	<p>Completing myExperience feedback</p>
Professional Experience 1		

7. RESOURCES

Textbook details

Each student is required to obtain from the NESA website the following documents: Stage 4/5 Science Syllabus and the Stage 4/5 Support Documents.

It is not necessary to purchase Science textbooks for 9.6 if you use the textbooks with the following ISBNs during tutorials.

Optional Junior Textbook

Jenny Zhang, Diane Alford, David McGowan, Craig Tilley (2013) Oxford Insight Science 9 &10 (eBook version)

Additional readings

Anstey, M. & Bull, G. (2006) *Teaching and learning multiliteracies: Changing times, changing literacies*. Curriculum Press, Melbourne.

Attwood, B. (2005), *Telling the truth about Aboriginal history*. All and Unwin, Crows Nest.

Bryson, B. (2004) A Short History of Nearly Everything, Black Swan, London

Finger, G., Russell, G., Jamieson-Proctor, R. & Russell, N. (2006) *Transforming Learning with ICT Making IT Happen*. Pearson Australia

Gibbons, P (2002) *Scaffolding language, scaffolding learning: Teaching second language learners in the mainstream classroom*. Portsmouth, Heinemann

Hazzard, J. (2004) *The Art of Teaching Science: Inquiry and Innovation in Middle School and High School*

Henderson, R. (2012). *Teaching Literacies. Pedagogies and Diversity in the Middle Years*, Oxford University Press, Australia

Hyde, M., Carpenter, L. & Conway, R. (2010). *Diversity and Inclusion in Australian Schools*. Oxford University Press, Australia

Martin, K. (2008). The intersection of Aboriginal knowledges, Aboriginal literacies and new learning pedagogy Abtsi-6(ng)4(t)5()-10(l-5(.)nq0.000008871 0 595.3 409.27 Tm0 g0 G[l]5(ea)4(r)-3(n)-9(i)5(n)-9(g)

8. ASSESSMENT

Assessment Details

Assessment Task 1 LESSON PLAN FOR STAGE 4 SCIENCE

Plan and design one 60-minute lesson for a mixed-ability Stage 4 class. The lesson plan must follow a standard SED format and be presented using the template provided.

Plan your lesson for a class in a comprehensive high school which would typically include EAL/D students, Indigenous students and students with various religious and cultural backgrounds. Some students may have low levels of literacy. Differentiation to cater for some students is therefore required. Appropriate differentiation strategies are scaffolding, group work and/or an alternative task or mode of presentation.

1. Write a rationale for your lesson plan. Your rationale should address the questions: What do I want the students to learn? Why is it important? What strategies will I use? What assessment for learning strategies will I use to monitor progress?
2. Prepare the lesson plan to demonstrate how you will use appropriate structure, activities, strategies and formative assessment in order for your students to develop understanding of the material.

Make sure you

- choose an appropriate topic for the year group
- support your rationale using references indicating your professional reading
- choose appropriate outcomes and lesson content
- choose an appropriate context
- demonstrate knowledge of effective teaching and learning strategies
- use appropriate format and provide sufficient detail for an effective lesson plan
- include an aspect of literacy/numeracy which integrates with the lesson focus
- provide in full one activity (which may be ICT-based)
- express yourself in clear, standard Australian English.

Assessment Task 2 - UNIT OF WORK FOR STAGE 5 SCIENCE

Prepare an outline for a unit of work for a Stage 5 class. The unit of work should cover the first five lessons, which are 80 minutes each; however, you are not preparing full lesson plans.

You must write a rationale for the unit (600-800 words) in which you

- provide a brief outline of the school and class context
- state precisely what you want the students to learn and why it is important
- describe and justify your choice of context to suit the needs and abilities of this class
- justify your teaching strategies by referring to readings, research and material presented in and the Quality Teaching framework
- demonstrate how differentiation will support a diverse range of learners
- describe the prior knowledge students have to begin this unit and discuss how you would assess and build on this prior knowledge.

The unit outline should be in a standard format that will be explained and investigated during lectures and tutorials. You will receive a **template** for the unit outline which you must use.

Your unit of work must have an embedded context and employ a logically sequenced series of lesson outlines, utilising a **variety of teaching strategies**. There should be potential for student engagement with the material taught.

- syllabus content statements for each lesson
- a description of the activities in each lesson
- one full activity for formative assessment (not an essay)
- one ICT-based activity (not watching a video or PowerPoint presentation)
- one group-work task with a focus on literacy/numeracy (not a mind-map)
- one incursion/excursion/performance/product activity
- outlines only for the other teaching materials required

The assessment task is to be converted to a PDF with the student name in the title of the file and submitted via Moodle.

NB. ALL OUTCOMES AND CONTENT STATEMENTS MUST BE WRITTEN AS FULL STATEMENTS, ACCOMPANIED BY THEIR IDENTIFYING NUMBER.

Any Website URLs included in your tasks must be hyperlinked.

HURDLE REQUIREMENT

ASSESSMENT TASK 3 - MICROTEACHING

Microteaching is the planning, presentation and evaluation of a lesson over a shortened period of time (a


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Student Name:

Student No:

Assessment Task 1 – Lesson Plan, Stage 4/5

SPECIFIC CRITERIA

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