School of Education

UNSW Arts, Design and Architecture

EDST6952

Science Method 2

Term 2, 2023

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Rana Kaddour	r.kaddour@unsw.edu.au	Email to arrange an appointment		

Tutors

Name	Email	Availability	Location	Phone
Zoe Tonge	z.tonge@unsw.edu.au	Email to arrange an appointment		

School Contact Information

School of Education
Arts, Design and Architecture
Ground Floor, Morven Brown Building (F20)

T: +61 (2) 9385 1977
E: education@unsw.edu.au
W: https://www.arts.unsw.edu.au/education

Acknowledgement of Country

UNSW Arts, Design and Architecture Kensington and Paddington campuses are built on Aboriginal Lands. We pay our respects to the Bidjigal and Gadigal peoples who are the Custodians of these lands. We acknowledge the Aboriginal and Torres Strait Islander peoples, the First Australians, whose lands, winds and waters we all now share, and pay respect to their unique values, and their continuing and enduring cultures which deepen and enrich the life of our nation and communities.

Image courtesy of the Office of the Pro Vice-Chancellor Indigenous [UNSW's Indigenous strategy]

Course Details

Units of Credit 6

Workload

150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc.

Summary of the Course

This is a hybrid course. It is available to both undergraduate and postgraduate students. The course content, delivery and assessment will be identical for both groups of students.

This course is designed to continue the development of Initial Teacher Education students in appropriate pedagogies for teaching Stage 4 and 5 Science, as well as offering an insight into the nature and practice of science. Initial Teacher Education students will develop skills in planning, teaching, assessing, contextualising science, managing practical work in science classrooms and integrating ICT resources into lessons. Important issues such as student prior learning, student differences and safety are also considered. Students will critically evaluate the features of effective classroom practice. The course focuses on the requirements and philosophy of the Stage 4 and 5 NSW Science syllabuses.

Course Learning Outcomes

1. Identify essential elements of the NESA Science syllabus documents, and strategies to support students as they transition between stages
2. Use strong knowledge of subject content to plan and evaluate coherent, goal-oriented and challenging lessons, lesson sequences and teaching programs which will engage all students
3. Set achievable learning outcomes to match content, teaching strategies, resources and different types of assessment for a unit of work in science
4. Provide clear directions to organise and support prepared activities and use resources
5. Assess and report on student learning in science to all key stakeholders
6. Identify the characteristics of an effective science teacher and the standards of professional practice in teaching, especially the attributes of Graduate teachers

Australian Professional Standards for Teachers

Standard		Assessment/s
1.1.1	Demonstrate knowledge and understanding of physical, social, and intellectual development and characteristics of students and how these may affect learning.	*
1.2.1	Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.	*
1.3.1	Demonstrate knowledge of teaching strategies that are responsive to the learning strengths and needs of students from diverse linguistics, cultural, religious, and socioeconomic backgrounds.	1, 2
1.5.1	Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.	1, 2
2.1.1	Demonstrate knowledge and understanding of the	1, 2

	concepts, substance and structure of the content and teaching strategies of the teaching area.	
2.2.1	Organise content into an effective learning and teaching sequence.	1, 2
2.3.1	Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	1, 2
2.5.1	Know and understand literacy and numeracy teaching strategies and their application in teaching areas.	1, 2
2.6.1	Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.	2
3.1.1	Set learning goals that provide achievable challenges for students of varying abilities and characteristics.	*
3.2.1	Plan lesson sequences using knowledge of student learning, content, and effective teaching strategies.	1, 2
3.3.1	Include a range of teaching strategies.	*
3.4.1	Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.	*
3.6.1	Demonstrate broad knowledge of strategies that can be used to evaluate teaching programs to improve student learning.	*
4.2.1	Demonstrate the capacity to organise classroom activities and provide clear directions.	*
5.1.1	Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative, and summative approaches to assess student learning.	2, 3
5.2.1	Demonstrate an understanding of the purpose of providing timely and appropriate feedback to students about their learning.	3
5.3.1	Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning.	1, 3
5.4.1	Demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice.	2, 3
5.5.1	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.	3
6.3.1	Seek and apply constructive feedback from supervisors and teachers to improve teaching practices.	1
7.1.1	Understand and apply the key principles described in codes of ethics and conduct for the teaching profession.	3

* Covered during the course

National Priority Area Elaborations

	Priority area		Assessment/s
A	Aboriginal and Torres Strait Islander Education.	5, 8	2
C	Information and Communication Technologies.	4-5, 8, 12	2
D	Literacy and Numeracy.	1, 4-5, 7-16, 19	1, 2, 3

		17-18	*
E	Students with Special Educational Needs.	2, 6-7	1, 2, 3
F	Teaching Students from Non-English-Speaking Backgrounds.	5, 7, 9 2, 6	1, 2 *

* Covered during the course

Teaching Strategies

Rationale for the inclusion of content and teaching approach

Lectures, tutorials and assignments will cover a variety of approaches to teaching, learning and assessing in the 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.

Student-centred activities will form the basis of the course. These activities will draw on the prior discipline knowledge of the students and will allow them to engage in relevant and challenging experiences that mirror those they will be expected to design for the range of secondary students they will later teach.

Teaching strategies

- Explicit teaching, including lectures, to foster an understanding of students' different approaches to learning and the use of a range of teaching strategies to foster interest and support learning.
- Small group cooperative learning to understand the importance of teamwork in an educational context and to demonstrate the use of group structures as appropriate to address teaching and learning goals.
- Structured occasions for reflection on learning to allow students to reflect critically on and improve teaching practice.
- Extensive opportunities for whole group and small group dialogue and discussion, allowing students the opportunity to demonstrate their capacity to communicate and liaise with the diverse members of an education community, and to demonstrate their knowledge and understanding of method content.
- Online learning.
- In tutorials, students will be expected to work in small groups to develop diverse products such as narratives, contexts, sections of units of work, lesson plans, teaching resources, and assessment tasks. Each group will be expected to upload and share their work in progress to Moodle by 6.45pm. This work will be monitored by the tutors, and contribute to the total grade for each student. Students who are absent on the day, but who still wish to submit their tutorial work can email it to their tutor the next day only. A debriefing session will be conducted 15 minutes prior to the end of each tutorial.

These activities will occur in a classroom climate that is supportive and inclusive of all learners.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Scope and sequence	40%	01/08/2023 05:00 PM	1, 2, 3, 4, 5
2. Unit of work	60%	22/08/2023 05:00 PM	1, 2, 3, 4, 5

Assessment 1: Scope and sequence

Due date: 01/08/2023 05:00 PM

Create a scope and sequence, including learning outcomes, for a Stage 5 class. Prepare an assessment task that directly links to the teaching and learning intentions. Indicative length: 2000 words. A feedback sheet will be provided.

Additional details

There are two parts to this task:

Part 1: Create a scope and sequence, including learning outcomes, for a Stage 5 class (4 terms).

Part 2: Prepare an assessment task (not an essay) that directly links to the teaching and learning intentions within ONE of the terms. Your scope and sequence must indicate when the task will occur.

- Design a marking rubric, which also includes space for a holistic comment.
- Provide an exemplar student answer for the assessment task.
- Write a feedback comment for this response outlining its strengths and indicating at least one aspect which could be further improved.

Assessment 2: Unit of work

Due date: 22/08/2023 05:00 PM

Prepare a unit of work for Stage 4 which covers approximately half the term. Indicative length: 3000 words. A feedback sheet will be provided.

Additional details

Prepare a unit of work for Stage 4 which covers approximately half the term. You need to ensure the unit demonstrates you are ready to plan and teach Stage 4 effectively. Make sure you have reflected on the feedback you received for the scope and sequence you prepared for Assessment 1.

The unit of work should indicate a variety of formative assessment strategies which will provide students with feedback about:

a. what they can already do well

b. what they still need to improve

c. how they can effectively close the gap between a. and b.

Include all activities and resources to support student learning. There must be at least one literacy activity/resource and one numeracy/ICT resource.

Task 3: Common Assessment Module

There are two parts to this task:

Part 1: Common Assessment Module (a separate module to be completed in addition to your Method course). It will be available to work on from Week 1 of UNSW Term 2.

- You will gather evidence from a variety of sources about learning outcomes; and use that information to improve learning and teaching.
- You will be sent further information about how to access the Module closer to the start of term. There will be drop-in sessions in Weeks 8-13. This is the same time that Method 2 runs (i.e., 17th July to 25th August 2023).
- Weight: N/A. This is a hurdle requirement that must be completed to pass the course.
- Further information about this module will be available in Moodle.

Part 2: Common Assessment Module (in-class task). In the final Method tutorials, you will complete a class task that relates to the Common Assessment Module. This task consists of three components:

- Collect three or four authentic student responses to preferably two assessment tasks (these might be provided by your Method lecturer).
- Provide written feedback for the student responses, indicating strengths and areas for improvement in relation to the work sample and overall expectations/standards.
- Write a few lines that could be included in a mid-year report comment to parents.

RUBRIC/FEEDBACK SHEET
EDST6952 SCIENCE METHOD 2
UNSW SCHOOL OF EDUCATION

Assessment Task 1: Scope and sequence

Specific Criteria	(-)——————————>(+)				
Understanding of the question or issue and the key concepts involved • Understands the task and its relationship to relevant areas of theory, research and practice • Uses syllabus documents and terminology clearly and accurately • Sequences tasks and activities to suit logical learning progression • Integrates assessment task logically with learning intentions and learning sequence • Provides effective formative feedback for student sample					
Depth of analysis and critique in response to the task • Includes key syllabus content to allow demonstration of appropriate selection of outcomes for Stage 5 • Demonstrates understanding of the NSW Quality Teaching framework, the School Excellence Framework and NESA Assessment Guidelines					
Familiarity with and relevance of professional and/or research literature used to support response • Understands effective assessment practices • Demonstrates understanding of the need to differentiate lessons to cater for diverse learners including Aboriginal and Torres Strait Islander and EAL/D students					
Structure and organisation of response					

Specific Criteria	(-)——————————>(+)				
• Organises and structures scope and sequence according to NESA guidelines and requirements • Follows NESA assessment guidelines					
Presentation of response according to appropriate academic and linguistic conventions • Shows excellent command of English grammar conventions including spelling, syntax, and punctuation					
General comments/recommendations for next time:					

Recommended: **/20 (FL PS CR DN HD)** **Weighting:** **40%**

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualise and/or amend these specific criteria. The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.

RUBRIC/FEEDBACK SHEET
EDST6952 SCIENCE METHOD 2
UNSW SCHOOL OF EDUCATION

Assessment Task 2: Unit of work

Specific Criteria	(-)——————————>(+)				
Understanding of the question or issue and the key concepts involved • Demonstrates knowledge of selected Stage 4 course and syllabus outcomes • Sequences tasks and activities to suit logical learning progression and meet selected outcomes for Stage 4 • Integrates formative assessment strategies throughout the unit of work					
Depth of analysis and critique in response to the task • Demonstrates understanding of academic and cultural diversity • Includes a variety of pedagogical strategies to suit content of the Stage 4 course • Designs appropriate activities and outlines lessons in sufficient detail without providing full plans • Provides effective feedback opportunities to inform students of their progress					
Familiarity with and relevance of professional and/or research literature used to support response • Demonstrates understanding of the need to differentiate lessons to cater for diverse learners • Understanding of a range of effective assessment practices					
Structure and organisation of response • Demonstrates ability to plan using backward mapping to meet selected outcomes					

Specific Criteria	(-)——————————>(+)				
• Presentation of effective and engaging learning sequence					
Presentation of response according to appropriate academic and linguistic conventions • Writes using correct Standard Australian English • Has proofread and edited work to avoid typos and incorrect usage					
General comments/recommendations for next time:					

Recommended: **/20 (FL PS CR DN HD)** **Weighting:** **60%**

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualise and/or amend these specific criteria. The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.

Attendance Requirements

School of Education Attendance Requirement

The School of Education (SED) requires students meet a minimum attendance requirement of 80% of all scheduled classes (i.1. lectures, tutorials, workshops, seminars) for all courses. Attendance in person is required for tutorials, seminars, and workshops when course are delivered in face-to-face mode. It is the responsibility of students to ensure that their attendance is recorded for the face to face either by electronic means or via an attendance register. Attendance in online or blended mode will be assessed through digital. Further information can be found here.

Course Schedule

View class timetable

Timetable

Date/Module	Type	Content
1	Lecture	• Writing Stage 4/5 assessment tasks and marking rubrics • Student Research Project (SRP)
	Tutorial	• Writing assessment tasks/SRP and marking rubrics
2	Lecture	• Writing Stage 4/5 examinations
	Tutorial	• Evaluating samples of examination questions and marking guidelines • Writing sample examination questions and marking guidelines
3	Lecture	• Planning a Stage 4/5 Life Skills unit of work • Differentiation • Selecting appropriate content
	Tutorial	• Differentiating teaching to meet specific learning needs in Stage 4/5 Life Skills • Modifying lessons to cater for specific learning needs
4	Lecture	• Interpreting Stage 4/5 assessment data • Providing feedback to Stage 4/5 students • Reporting
	Tutorial	• Reporting scenarios • Parent interview scenarios • Writing appropriate report comments
5	Lecture	• Managing classroom behaviour

	Tutorial	• Strategies to manage classroom behaviour • Evaluating scenarios • Role play
6	Lecture	• Revisiting the National Professional Standards for Teachers; Professional Conduct and Ethics • What sort of teacher do you want to be? • Where to next? Job readiness, accreditation, school expectations • Professional associations
	Tutorial	**Hurdle requirements as class activity** • Assessment and learning • Self and peer assessment • Moderation • Feedback • Reporting to parents and other key stakeholders **Completing myExperience course evaluation** **Goals for PE2**

Resources

Prescribed Resources

Required readings

Each student is required to obtain from the NESA website the following documents:

- Stage 4/5 Science Syllabus
- Stage 4/5 Support Materials

It is not necessary to purchase high school Science textbooks for this course. Textbooks will not usually be used during tutorials.

Other readings

- Bryson, B. (2004) *A Short History of Nearly Everything*. Black Swan, London.
- Harrison, N (2008), *Teaching and learning in Indigenous education.* Oxford, Sydney.
- Hazzard, J. (2004) *The Art of Teaching Science: Inquiry and Innovation in Middle School and High School*.

Recommended websites

- NESA http://syllabus.nesa.nsw.edu.au/science/
- Science Teachers Association of NSW http://www.stansw.asn.au
- Moodle – Getting Started for Teachers http://docs.moodle.org/en/Getting_started_for_teachers
- Moodle – Teacher Documentation http://docs.moodle.org/en/Teacher_documentation

Course Evaluation and Development

- Lectures and tutorials will occur through face-to-face teaching, which will enable the facilitation of class discussions.

Submission of Assessment Tasks

It is mandatory for all students to use the American Psychological Association (APA) formatting and citation styles in all written assignments/assessments unless otherwise stated. The style guide and related resources are available at http://www.apastyle.org/. Students commencing in coursework and research programs are encouraged to acquire a copy of the current APA Publication Manual.

See the UNSW Learning Centre website for support with academic writing, http://www.lc.unsw.edu.au/olib.html

All assessments must be submitted electronically usuing Turnitin. Assessments are due by 5:00pm sharp on the due date. Submissions after 5:00pm are considered late. Students are advised to submit well before the due time to avoid unanticipated technical delays or failures. Always retain a copy of work submitted. Students are required to keep all drafts, original data and other evidence of the authenticity of the work for at least one year after assessment. If an assessment is mislaid the student is responsible for providing a further copy.

Every assessment in the School of Education is considered a hurdle requirement, meaning that students must pass all assessments in the course to pass the course.

Academic Honesty and Plagiarism

At UNSW, plagiarism is considered a form of academic misconduct and is viewed very seriously. Plagiarism at UNSW is define as using the words or ideas of others and passing them off as your own. Refer to the following for further information - Academic Integrity and Plagiarism https://student.unsw.edu.au/plagiarism

UNSW is committed to helping students understand the conventions which govern academic communication to assist them to avoid action which may result in academic mosconduct. Further information on the Student Misconduct Rules is available at: https://student.unsw.edu.au/conduct.

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