

EDST6952

Science Method 2

Term 2, 2022



Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Rana Kaddour	r.kaddour@unsw.edu.au	8:00pm - 8:30pm		

Tutors

Name	Email	Availability	Location	Phone
Zoe Tonge	z.tonge@unsw.edu.au	8:00pm - 8:30pm		

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 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	Provide feedback to students on their learning	3
5.3.1	Make consistent and comparable judgements	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	Report on 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 17-18	1, 2, 3 *
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/Assessment task	40%	02/08/2022 05:00 PM	1, 2, 3, 4, 5
2. Unit of work	60%	23/08/2022 05:00 PM	1, 2, 3, 4, 5

Assessment 1: Scope and sequence/Assessment task

Due date: 02/08/2022 05:00 PM

Part 1: Create a scope and sequence for a class

Part 2: Prepare an assessment task

Written feedback will be provided on the assessment task within 10 working days of submission.

Additional details

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

PART 2: Prepare an assessment task (not an essay) that directly links to the teaching and learning intentions for one of the terms. Your scope and sequence must indicate when the task will occur and how the feedback from the summative task can also be used for formative assessment.

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: 23/08/2022 05:00 PM

Prepare a unit of work

Written feedback will be provided on the assessment task within 10 working days of submission.

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

Structure: The Common Assessment Module will be available to work on from Week 1 of UNSW Term 2.

Weight: N/A (this a hurdle requirement that must be completed to pass the course).

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 it 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., 18th July to 26th August 2022).

Note: Further information about this module will be available in Moodle.

Common Assessment Module (in-class task)

In the final Method tutorials, you will complete a task that relates to the Common Assessment Module.

This task consists of three components:

1. Collect five or six authentic student responses to preferably two assessment tasks.
2. Provide written feedback for the students which indicates strengths and areas for improvement in relation to this work sample and overall expectations/standards.
3. 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/Assessment task

Specific Criteria	(-)—————>(+)				
<p>Understanding of the question or issue and the key concepts involved</p> <ul style="list-style-type: none"> • 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 • 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 					
<p>Depth of analysis and critique in response to the task</p> <ul style="list-style-type: none"> • Demonstrates understanding of the NSW Quality Teaching framework, the School Excellence Framework and NESA Assessment Guidelines • Includes key syllabus content to allow demonstration of appropriate selection of outcomes for Stage 5 					

Specific Criteria	(-)—————>(+)				
<ul style="list-style-type: none"> • Demonstrates understanding of the NSW Quality Teaching framework, the School Excellence Framework and NESA Assessment Guidelines • Includes key syllabus content to allow demonstration of appropriate selection of outcomes for Stage 5 					
<p>Familiarity with and relevance of professional and/or research literature used to support response</p> <ul style="list-style-type: none"> • Demonstrates understanding of the need to differentiate lessons to cater for diverse learners including Aboriginal and Torres Strait Islander and EAL/D students • 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 • Understands effective assessment practices 					
<p>Structure and organisation of response</p> <ul style="list-style-type: none"> • Organises and structures scope and sequence according to NESA guidelines and requirements • Follows NESA assessment guidelines • Organises and structures scope and sequence according to NESA guidelines and requirements • Follows NESA assessment guidelines 					
<p>Presentation of response according to appropriate academic and linguistic conventions</p> <ul style="list-style-type: none"> • Shows excellent command of English grammar conventions including spelling, syntax, and punctuation • Shows excellent command of English grammar conventions including spelling, syntax, and punctuation 					

Specific Criteria	(-)—————>(+)
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	(-)—————>(+)				
<p>Understanding of the question or issue and the key concepts involved</p> <ul style="list-style-type: none"> • Demonstrates knowledge of selected Stage 6 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 • Demonstrates knowledge of selected Stage 6 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 					
<p>Depth of analysis and critique in response to the task</p> <ul style="list-style-type: none"> • 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 • 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 					

Specific Criteria	(-)—————>(+)				
<p>detail without providing full plans</p> <ul style="list-style-type: none"> • Provides effective feedback opportunities to inform students of their progress 					
<p>Familiarity with and relevance of professional and/or research literature used to support response</p> <ul style="list-style-type: none"> • Demonstrates understanding of the need to differentiate lessons to cater for diverse learners • Understanding of a range of effective assessment practices • Demonstrates understanding of the need to differentiate lessons to cater for diverse learners • Understanding of a range of effective assessment practices 					
<p>Structure and organisation of response</p> <ul style="list-style-type: none"> • Demonstrates ability to plan using backward mapping to meet selected outcomes • Presentation of effective and engaging learning sequence • Demonstrates ability to plan using backward mapping to meet selected outcomes • Presentation of effective and engaging learning sequence 					
<p>Presentation of response according to appropriate academic and linguistic conventions</p> <ul style="list-style-type: none"> • Writes using correct Standard Australian English • Has proofread and edited work to avoid typos and incorrect usage • Writes using correct Standard Australian English • Has proofread and edited work to avoid typos and incorrect usage 					

Specific Criteria	(-)—————>(+)
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.e. lectures, tutorials, workshops, seminars) for all courses. Attendance in person is required for tutorials, seminars, and workshops when courses 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	<ul style="list-style-type: none">• Writing Stage 4/5 assessment tasks and marking rubrics• Student Research Project (SRP)
	Tutorial	<ul style="list-style-type: none">• Writing assessment tasks/SRP and marking rubrics
2	Lecture	<ul style="list-style-type: none">• Writing Stage 4/5 examinations
	Tutorial	<ul style="list-style-type: none">• Evaluating samples of examination questions and marking guidelines• Writing sample examination questions and marking guidelines
3	Lecture	<ul style="list-style-type: none">• Planning a Stage 4/5 Life Skills unit of work• Differentiation• Selecting appropriate content
	Tutorial	<ul style="list-style-type: none">• Differentiating teaching to meet specific learning needs in Stage 4/5 Life Skills• Modifying lessons to cater for specific learning needs
4	Lecture	<ul style="list-style-type: none">• Interpreting Stage 4/5 assessment data• Providing feedback to Stage 4/5 students• Reporting
	Tutorial	<ul style="list-style-type: none">• Reporting scenarios• Parent interview scenarios• Writing appropriate report comments
5	Lecture	<ul style="list-style-type: none">• Managing classroom behaviour

	Tutorial	<ul style="list-style-type: none"> • Strategies to manage classroom behaviour • Evaluating scenarios • Role play
6	Lecture	<ul style="list-style-type: none"> • 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	<p>Hurdle requirements as class activity</p> <ul style="list-style-type: none"> • Assessment and learning • Self and peer assessment • Moderation • Feedback • Reporting to parents and other key stakeholders <p>Completing myExperience course evaluation</p> <p>Goals for PE2</p>

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

- The delivery of this course has changed and will now be delivered through face-to-face lectures and tutorials, not through an online platform. This will enable students to work more collaboratively during tutorials.
- The in-class Hurdle Task will be better organised using authentic student assessment samples collected from PE1. Other student assessment samples will also be provided by tutors.

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au. Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support you will automatically receive a ticket number, but if you telephone you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, it will be stated on your course's Moodle site with alternative submission details.

For information on how to submit assignments online via Moodle: <https://student.unsw.edu.au/how-submit-assignment-moodle>

Academic Honesty and Plagiarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

Copying: Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.

Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.

Collusion: Working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.

Inappropriate citation: Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.

Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

Correct referencing practices

The [UNSW Academic Skills support](#) offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items.

UNSW Library has [the ELISE tool](#) available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW but it can also be a great refresher during your study. Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided.)

For essential student information relating to:

- requests for extension;
- late submissions guidelines;
- review of marks;
- UNSW Health and Safety policies;
- examination procedures;
- special consideration in the event of illness or misadventure;
- student equity and disability;
- and other essential academic information, see

<https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/protocols-guidelines>

Image Credit

Synergies in Sound 2016

CRICOS

CRICOS Provider Code: 00098G