



EDTE4330

Science in the Secondary School I

Session 1, Weekday attendance, North Ryde 2020

Macquarie School of Education

Contents

<u>General Information</u>	2
<u>Learning Outcomes</u>	2
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	3
<u>Delivery and Resources</u>	6
<u>Unit Schedule</u>	7
<u>Policies and Procedures</u>	8
<u>Changes from Previous Offering</u>	9
<u>Changes since First Published</u>	10

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General Information

Unit convenor and teaching staff

Senior Lecturer

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29 WW, Room 237

Every Friday afternoon - online consultaion (Skype/Zoom)

Credit points

10

Prerequisites

TEP388 or EDTE3880

Corequisites

TEP401 or EDTE4010

Co-badged status

Unit description

This unit introduces students to modern approaches for the teaching and learning of Science in secondary schools. Curricula, resources and instructional strategies appropriate to teaching Science are examined, with particular attention to years 7-10 Science.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Demonstrate knowledge of the content of Stages 4 and 5 science of the current NSW 7-10 syllabus and impending NSW syllabus for the Australian Curriculum.

ULO3: Implement teaching strategies for using ICT that engage students in their learning.

ULO4: Demonstrate knowledge and understanding of research into how students learn science concepts.

ULO5: Demonstrate knowledge and understanding of strategies for differentiating

teaching to meet specific learning needs of students across a range of backgrounds and abilities.

ULO2: Demonstrate understanding of a range of teaching strategies related to the content of Stages 4 and 5 of the science syllabuses.

ULO6: Plan and implement effective science lessons that provide achievable challenges for students of varying backgrounds and abilities.

ULO7: Explore educational ideas through action research.

ULO8: Develop communication skills.

Assessment Tasks

Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult [iLearn](#) for revised unit information.

[Find out more about the Coronavirus \(COVID-19\) and potential impacts on staff and students](#)

General Assessment Information

1. Plagiarism detection software is used for all text-based electronically submitted summative assessment

2. Assessment Presentation and Submission Guidelines Please follow these guidelines when you submit each assignment:

- Allow a left and right-hand margin of at least 2cm in all assignments.
- Please type all assignments using 12-point font and 1.5 spacing.
- All assessments must be submitted through Turnitin in .doc or .pdf format.
- It is the responsibility of the student to ensure that all assessments are successfully submitted through Turnitin.
- Faculty assignment cover sheets are NOT required.

3. Draft Submissions & Turnitin Originality Reports

- Students may use Turnitin's Original Report as a learning tool to improve their academic writing if this option is made available in the unit.
- Students are strongly encouraged to upload a draft copy of each assessment to Turnitin at least one week prior to the due date to obtain an Originality Report.
- The Original Report provides students with a similarity index that may indicate if plagiarism has occurred. Students will be able to make amendments to their drafts prior

to their final submission on the due date.

- Generally, one Originality Report is generated every 24 hours up to the due date.

Please note:

- Students should regularly save a copy of all assignments before submission,
- Students are responsible for checking that their submission has been successful and has been submitted by the due date and time.

4. Assignment extensions and late penalties

- In general, there should be no need for extensions except through illness or misadventure that would be categorised as serious and unavoidable disruption according to the University definition of same, see: <https://students.mq.edu.au/study/my-study-program/special-consideration>
- Applications for extensions must be made via AskMQ according to the Special Consideration policy. Extensions can only be granted if they meet the Special Considerations policy and are submitted via <https://ask.mq.edu.au/>. This will ensure consistency in the consideration of such requests is maintained.
- Late submissions without extension will receive a penalty of 5% reduction of the total possible mark for each day late (including weekends and public holidays). You are reminded that submitting even 1 day late could be the difference between passing and failing a unit. Late penalties are applied by unit convenors or their delegates after tasks are assessed.
- No assessable work will be accepted after the return/release of marked work on the same topic. If a student is still permitted to submit on the basis of unavoidable disruption, an alternative topic may be set.
- Students should keep an electronic file of all assessments. Claims regarding "lost" assessments cannot be made if the file cannot be produced. It is also advisable to keep an electronic file of all drafts and the final submission on a USB untouched/unopened after submission. This can be used to demonstrate easily that the assessment has not been amended after the submission date.

5. Requesting a re-assessment of an assignment

If you have evidence that your task has been incorrectly assessed against the grade descriptors you can request a re-mark. To request a re-mark you need to contact the unit convenor within 7 days of the date of return of the assignment and provide a detailed assessment of your script against the task criteria. Evidence from your assignment must be provided to support your judgements.

Note: Failed assessments cannot be re-marked as they are all double-marked as a part of the

moderation process.

Please note: The outcome of a re-mark may be a higher/lower or unchanged grade. Grades are standards referenced and effort is NOT a criterion.

6. University policy on grading

1) Criteria for awarding grades for assessment tasks Assignments will be awarded grades ranging from HD to F according to guidelines set out in the University's Grading Policy. The following descriptive criteria are included for your information.

2) Descriptive Criteria for awarding grades in the unit In order to meet the unit outcomes and successfully pass this unit, students must make a genuine attempt at all assessment tasks. Where this requirement is not met you will be awarded an FA grade with a maximum mark of 45.

Students will be awarded grades ranging from HD to F according to guidelines set out in the assessment policy: <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment-in-effect-from-session-2-2016>.

In order to ensure clear distinctions between grades, final marks of 49, 64, 74 and 84 will not be used. The following generic grade descriptors provide university-wide standards for awarding final grades. [HYPERLINK "https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment-in-effect-from-session-2-2016"](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment-in-effect-from-session-2-2016)

Grade	Descriptor
HD (High Distinction)	Provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application as appropriate to the discipline.
D (Distinction)	Provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.
Cr (Credit)	Provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; convincing argumentation with appropriate coherent justification; communication of ideas fluently and clearly in terms of the conventions of the discipline.
P (Pass).	Provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; routine argumentation with acceptable justification; communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes
F (Fail)	Does not provide evidence of attainment of learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; missing, undeveloped, inappropriate or confusing argumentation; incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.

Note: If you fail a unit with a professional experience component the fail grade will be on your transcript irrespective of the timing of the placement.

3) Withdrawing from this UG Unit If you are considering withdrawing from this unit, please seek academic advice via <https://ask.mq.edu.au> before doing so as this unit may be a co-requisite or prerequisite for units in the following sessions and may impact on your progression through the degree.

4) Results Results shown in iLearn, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au.

Delivery and Resources

Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

Delivery

The classes for EDTE433 are workshops and online work.

There will be five workshops, one x 3 hours workshops in Weeks 1, 3, 5, 7, and 12.

There will also be on-line work will need to be done in preparation for the workshops and other work to be completed as follow-up to them. More information will be in your EDTE4330 iLearn page.

The areas of study in EDTE433 include the history and philosophy of science, inquiry-based teaching and learning approaches, the use of scientific language, writing/reading in science, classroom management, ICT for learning about science, group work and discussion, assessment, along with children's ideas about science and how these might differ from those presently held by members of the scientific community. Work will continue on lesson planning and implementation according to the prerequisite units. In each workshop session and online work, detailed strategies for the teaching and learning of each of the prescribed focus areas, contexts and domains of the current NSW Stage 4/5 science syllabus will be presented and discussed in terms of their effectiveness. This will then be linked together with the Stage 6 science syllabus documents and discussion of the National Curriculum for science as appropriate.

Many of the workshop strategies are hands-on so that students are able to gain practical knowledge of activities that can be used in science classrooms at the junior secondary level. The workshops are organised to model a school classroom, where effective learning and teaching takes place including the use of laptops. Each workshop provides a choice of activities usually negotiated by the students in small groups. The lecturer's role is to provide guidance where necessary and highlight important issues in the overall theme of the workshop along with current,

relevant science education research. Students are expected to participate in all workshops as individuals, in small groups and as a whole class.

iLearn

This unit has a full web presence through *iLearn*. Students will need regular access to a computer and the Internet to complete this unit.

Weekly access to iLearn is compulsory for all students. Important assessment information will be posted here, as will other relevant unit notices and materials, including a reading template and guide to lecture note taking to assist your studies.

Various activities and materials for discussion and critical reflection are included and external students especially are encouraged to use this web component. Electronic links and suggested references will be included in the Resources section. Please check the iLearn unit regularly.

Support Resources

Macquarie University has a range of services for students. If you are struggling with any aspect of academic life or career trajectory and skills, we have great supports within the university. Please refer to the comprehensive list of support services [here](#).

Access and technical assistance

Information for students about access to the online component of this unit is available at ilearn.mq.edu.au/login/MQ/. You will need to enter your student username and password. Please do NOT contact the Unit Convenor regarding iLearn technical help. No extensions will be given for any technical issues. Allow enough time for your submissions. Assistance is available from IT Helpdesk ph: 1800 67 4357, or log a request at help.mq.edu.au. OneHelp is the online IT support service for both students and staff.

This unit requires students to use several ICT and software skills:

- Internet access: The iLearn site contains materials for this unit; it is also required for the online submission of all Assessment Tasks, and for the use of Turnitin submission for ALL tasks.
- Word processing, visual representations, and document formatting: You are required to use an appropriate form of software to present your assignments.
- Uploading of assessment tasks to iLearn.

Attendance Requirements

Attendance at all workshops/tutorials is expected. There will be a supporting website for the unit providing additional readings, links and materials.

Unit Schedule

Coronavirus (COVID-19) Update

The unit schedule/topics and any references to on-campus delivery below may no longer be

relevant due to COVID-19. Please consult [iLearn](#) for latest details, and check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

The unit content covers topics related to teaching and learning science in secondary schools. The content is organised into 5 modules.

- The nature of science and its implications in the science curriculum
- Promoting student engagement in science teaching and learning
- Using ICT in Science Teaching and Learning
- Social constructivist view of science teaching and learning
- Assessment in science education

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released

directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

The unit content has been updated and re-organised into five modules.

Changes since First Published

Date	Description
18/03/2020	Assignment 1 submission date was changed from 6 April 2020 to 20 April 2020.
14/02/2020	General assessment information was added.