EDST8218

Teaching Computing Technologies in the Secondary School 1

Session 2, In person-scheduled-infrequent, North Ryde 2024

Macquarie School of Education

Contents

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General Information

Unit convenor and teaching staff
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Course Convener
Bronwyn Tregenza
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Credit points
10

Prerequisites

Corequisites
EDST8237

Co-badged status

Unit description
This unit is designed to prepare pre-service teachers to be highly effective computing technologies teachers for Year 7-10 students. Pre-service teachers will develop an in-depth, broad and coherent knowledge and skills of how to effectively teach computational thinking, systems thinking, computing technologies, programming languages, networks, databases, and other content and topics relevant to computing technologies curricula in Years 7-10. Teaching school students using collaborative and project-based approaches is a particular focus, through a range of innovative topics such as games development, web applications, and mechatronics. Pre-service teachers will undertake critically reflexive, design-based, collaborative, and research-based activities throughout the unit, to provide experience with the pedagogies they can employ in their future classes. Strategies for managing teaching issues that arise during professional experience are also addressed.

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 in-depth, broad and coherent knowledge of the content for the Stages 4 and 5 NSW Technologies Year 7-10 syllabus for the Australian Curriculum

ULO2: Critically analyse and engage reflexively with a range of teaching strategies related to the content of Year 7-10 computing technologies syllabus

ULO3: Critically and creatively design effective lessons and modules that support diverse Year 7-10 learners to successfully learn computing

ULO4: Integrate research and scholarship to enhance the design of computing tasks and curriculum for Year 7-10 students

ULO5: Effectively communicate Year 7-10 computing concepts and processes to diverse audiences

ULO6: Effectively engage with peers to enhance individual and collective learning outcomes

General Assessment Information

Students should be aware of and apply the University policy on academic honesty (see: https://p olicies.mq.edu.au/document/view.php?id=3)

Unless a Special Consideration (see: https://students.mq.edu.au/study/assessment-exams/speci al-consideration) request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a mark of, 0 (zero) will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11:55pm. A 1-hour grace period is provided to students who experience a technical issue. This late penalty will apply to non-timed sensitive assessment (incl essays, reports, posters, portfolios, journals, recordings etc)

Late submission of time sensitive tasks (such as tests/exams, performance assessments/ presentations, scheduled practical assessments/labs etc) will only be addressed by the unit convenor in a Special consideration application. Special Consideration outcome may result in a new question or topic.

All assessments are submitted electronically. Turnitin plagiarism detection software is used to check all written assessments.

Students can use Turnitin's Originality Report as a learning tool to improve their academic writing if this option is made available in the unit.

Students should carefully check that they submit the correct file for an assessment as no re-submissions will be accepted after the due date and time, including instances where students upload an incorrect file in error.

Word limits are strictly applied. Work above the word limit will not be marked.

All assessments are marked using a clear marking scheme or a rubric.

Marking of all assessments is moderated by the Unit Convenor.

Applications for extensions must be made via AskMQ (https://ask.mq.edu.au/).

It is not the responsibility of unit staff to contact students who have failed to submit assessments. If you have any missing items of assessment, it is your responsibility to make contact with the unit convenor.

University policy on grading

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. For Professional Experience (PEx) units the PE Report is marked as satisfactory or unsatisfactory and the Teaching Performance Assessment (in final PE units) is marked as not meets, meets or exceeds.

Descriptive Criteria for awarding grades in the unit To meet the unit outcomes and successfully pass this unit, students should attempt all assessment tasks.

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.

Withdrawing from this 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 your course progression.

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 https://ask.mq.edu.au

Assessments

In accordance with the Academic Integrity Policy a student must take responsibility, be proactive, take ownership and hold oneself responsible for ensuring all information and content, including citations and references in their assessment, have been generated and communicated in an ethical, honest and responsible manner. Failure to show responsibility by checking the accuracy and integrity of your own content, citations and references, or the submission of falsified content, is a breach of the Academic Integrity Policy.

Assessment Tasks

Name	Weighting	Hurdle	Due
Lesson design and justification	30%	No	2024-08-18
Contribution to class activities	10%	No	2024-10-09
Collaborative module design and justification	60%	No	2024-10-03

Lesson design and justification

Assessment Type [1]: Design Task
Indicative Time on Task [2]: 24 hours
Due: **2024-08-18**
Weighting: **30%**

For this task pre-service teachers individually design a lesson that addresses one or more Year 7-10 computing technology syllabus outcomes and content areas, in order to promote successful learning by their prospective students. Students are also expected to provide a justification of their lesson design, based on scholarship and other learning garnered throughout the unit.

On successful completion you will be able to:

- Demonstrate in-depth, broad and coherent knowledge of the content for the Stages 4 and 5 NSW Technologies Year 7-10 syllabus for the Australian Curriculum
- Critically analyse and engage reflexively with a range of teaching strategies related to the content of Year 7-10 computing technologies syllabus
- Critically and creatively design effective lessons and modules that support diverse Year 7-10 learners to successfully learn computing
- Integrate research and scholarship to enhance the design of computing tasks and curriculum for Year 7-10 students
- Effectively communicate Year 7-10 computing concepts and processes to diverse audiences

Contribution to class activities

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 8 hours
Due: **2024-10-09**
Weighting: **10%**

For this task pre-service teachers engage in class tasks, often collaboratively, in a way that enhances individual and collective learning outcomes

On successful completion you will be able to:
- Demonstrate in-depth, broad and coherent knowledge of the content for the Stages 4 and 5 NSW Technologies Year 7-10 syllabus for the Australian Curriculum
- Critically analyse and engage reflexively with a range of teaching strategies related to the content of Year 7-10 computing technologies syllabus
- Effectively communicate Year 7-10 computing concepts and processes to diverse audiences
- Effectively engage with peers to enhance individual and collective learning outcomes

Collaborative module design and justification

Assessment Type [1]: Design Task
Indicative Time on Task [2]: 48 hours
Due: **2024-10-03**
Weighting: **60%**

For this task pre-service teachers collaboratively design a complete and cohesive module of work for Year 7-10 students, in teams allocated by the convenor. Students are required to submit an individually composed justification explaining the rationale for their design decisions, and also collaboratively present the module to the class.

On successful completion you will be able to:
- Demonstrate in-depth, broad and coherent knowledge of the content for the Stages 4 and 5 NSW Technologies Year 7-10 syllabus for the Australian Curriculum
- Critically analyse and engage reflexively with a range of teaching strategies related to the content of Year 7-10 computing technologies syllabus

- Critically and creatively design effective lessons and modules that support diverse Year 7-10 learners to successfully learn computing
- Integrate research and scholarship to enhance the design of computing tasks and curriculum for Year 7-10 students
- Effectively communicate Year 7-10 computing concepts and processes to diverse audiences
- Effectively engage with peers to enhance individual and collective learning outcomes

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[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Information about the unit iLearn site

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 students enrolled in INFQ or online mode are especially encouraged to use this web component. Electronic links and suggested references will be included in the Resources section. Please check the iLearn unit regularly.

Online lectures are available through the iLearn platform. You must listen to all lectures and it is recommended that you attend all lectures. PowerPoint slides are available in iLearn in advance of the weekly lecture and/or are available in the Active Learning Tool.

Access and technical assistance

Information for students about access to the online component of this unit is available at https://ilearn.mq.edu.au/login/index.php. You will need to enter your student username and password. Please do NOT contact the Unit Convenor regarding iLearn technical help. Assistance is available from IT Helpdesk

Ph: 9850 4357 or 1800 67 4357

Log a request: help.mq.edu.au.

On Campus: Ground floor at 18 Wally's Walk

Structure

The Unit structure includes a series of online workshops and two face-to-face workshops. These will include a combination of content, practical activities and discussions including resources that can be used in your own lesson plans.

Unit Schedule

Session	Date	Title	Format
1	25/07/24	Module 1 – Introduction to Technology Mandatory Years 7-8 Syllabus	Online
2	3/08/24	Module 2 – Hands-on with microprocessors and data	Onsite: Face to face
3	15/08/24	Module 3 – Computational pedagogies and implementation of Technology Mandatory (7-8)	Online
4	22/08/24	Module 4 – Introduction to Computing Technology and IST (Stage 4/5)	Online
5	31/08/24	Module 5 – Hands-on with Stage 5	Onsite: Face to Face
6	12/08/24	Module 6 – Pedagogies, planning and implementation for Stages 4 and 5	Online
	End of Course		

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). 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
- Assessment Procedure
- Complaints Resolution Procedure for Students and Members of the Public
- Special Consideration Policy

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

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/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 connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

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

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the 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

Macquarie University offers a range of Student Support Services including:

- IT Support

- Accessibility and disability support with study

- Mental health support

- Safety support to respond to bullying, harassment, sexual harassment and sexual assault

- Social support including information about finances, tenancy and legal issues

- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the Service Connect Portal, or contact Service Connect.

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.

5Rs Framework

The 5Rs Framework, developed by the School of Education at Macquarie University, is embedded throughout your teacher education course. Your use of the 5Rs Framework will help you develop the capabilities that will make your teaching career sustainable and fulfilling. In this unit, you will learn using the 5Rs framework in the following important ways:

Resilient - Students engage in online group discussions and receive peer comments and feedback to shape their learning.

Reflective - Students reflect on weekly reading and activities in forum posts and read and engage with each others' writing.

Responsive - AT1 and AT2 should show growth from peer and convener feedback on class discussions.

Ready to learn - Students encouraged to join the ICTENSW professional association (or state equivalent) and students encouraged to engage in professional reading.

Research engaged - AT1 and AT2 should both be research informed designs for student learning and AT3 requires that students engage in weekly readings and post reflections on the reading and activities.

Unit information based on version 2024.01R of the Handbook