



Educate

For Digital Technologies Teachers

Educate supports teachers leading the teaching of Computer Science and Digital Technologies in schools. It is aimed at teachers of the Digital Technologies | Hangarau Matihiko (DTIHM) curriculum in primary and secondary schools.

The programme consists of two University of Canterbury courses, designed to suit busy teachers. Interaction with industry ensures your teaching is grounded in an understanding of the context faced by students who ultimately find work in the ICT sector.

The two courses are taught by award-winning experienced educators who are very familiar with the needs of schools and Digital Technology teachers. With Educate, you will build on your experience as a teacher and develop practices in your own context with leading expertise and resources including CS Unplugged csunplugged.org and the Computer Science Field Guide www.csfieldguide.org.nz.

The on-site block of each course during the school holidays are complemented with online study with a cohort of teachers spread across New Zealand. The two courses in the Postgraduate Certificate of Education may be transferred to a Postgraduate Diploma in Education or a University of Canterbury Master of Education.

How does it work?

Taking two years to complete, each course is spread over one year (March-October) to enable candidates to work around peak times in the school calendar.

The on-site block of each course is in the holidays at the end of Term 1. Off-site study includes an online environment which offers support and collaboration opportunities and will include material from your own teaching practice, plus ongoing support from the course staff, readings, and reflection on your own teaching experiences.

Many teachers take advantage of the **Canterbury CS4HS** or **CS4PS** workshops to get an overview of the topics (see UC CS Education <https://www.cs4teachers.org.nz>).

The two courses are offered in alternating years: **EDEM665** in 2018 and **EDEM626** in 2019. Scholarships are available to ensure equity and build capacity in this important field.

Helping you in your professional practice

Assessment involves teaching Digital Technologies with your own class or club; we support you to do this and the assessment provides feedback on your reflective report of your teaching. At the on-site block you can bring your own laptop, and we will help to install relevant software.



Location

The on-site block is held at the SIGNAL site in Christchurch's Innovation Precinct and the University of Canterbury College of Engineering; it includes workshops, talks, tutoring and industry visits.

Delivery

These courses are led by **Professor Tim Bell** (international expert on CS education) and **Niki Davis, Distinguished Professor of e-Learning**. In addition you will have access to additional tutors for ongoing help and support.

Entry Requirements

Postgraduate study in education requires a relevant bachelor's degree. If you gained your qualifications overseas, these will be assessed to ensure they are of an equivalent standard. There are also TOEFL requirements.

Credits: 60 (PGCertEd)

Level: 8

Start: February 2018/2019
(On-site block in April)

Fees* Domestic

\$1,811 for each of the two courses, plus student services fee

International

\$6,900 for each of the two courses.

*Fees are approximate, subject to change and exchange rates.

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Course names and credits

EDEM626 (Curriculum Implementation in Computer Science) **30 credits**

EDEM665 (Teaching Computer Programming) **30 credits**

Programme Total 60 credits

International students

You will be individually assessed to ensure you meet the entry requirements, including support to find a context as a teacher if necessary.

If English is not your first language, an English language skills equivalent to an IELTS overall band score (academic) of 6.5, with no band score less than 6.0.

Educate Contact

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See also

UC CS Education

<http://www.cosc.canterbury.ac.nz/research/RG/CSE/index.shtml>

UC e-Learning programme

<http://www.tinyurl.com/yacpav3k>

SIGNAL Contact

For more information about SIGNAL –
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2019–EDEM626 Curriculum Implementation in Computer Science (level 8)

Participants will be better prepared to teach the Computational Thinking and Computer Science topics in Digital Technologies | Hangarau Matihiko curriculum to students in primary and secondary schools. This includes the new curriculum content for DT | HM within in the New Zealand Curriculum and Te Marautanga o Aotearoa (from 2018) as well as New Zealand's ground-breaking NCEA standards for Digital Technologies.

Each of the main topics will be critically examined in terms of pedagogical and subject knowledge while at the same time developing teachers' current and future understanding of theoretical perspectives. Participants will develop a deeper understanding through investigating theories and practices in Computational Thinking and Computer Science in education and what is important to industry. A key component is an individual research project to develop, implement and critically evaluate resources to support teaching two selected topics. This project provides practical experience informed by current research from both education and Computer Science disciplines. The course does not cover computer programming, nor does it provide an initial teacher education qualification. (EDEM665 covers teaching computer programming)

2018–EDEM665 Special Topic: Teaching Computer Programming (Level 8)

This course aims to equip participants to teach the programming in Digital Technologies | Hangarau Matihiko to students in primary and secondary schools. This includes the new curriculum content for DT | HM within in the New Zealand Curriculum and Te Marautanga o Aotearoa from 2018, as well as New Zealand's ground-breaking NCEA standards for Digital Technologies. Students will explore what computer programming is, and various approaches to teaching it. Participants will develop research skills and investigate theories and practices in programming education. A key component is an individual research project to develop, implement and critically evaluate approaches that support teaching programming. This project provides practical experience informed by current research from both education and computer science disciplines. Note: While the course does not require substantial programming experience, a course leader can provide recommended programming preparation prior to starting the course. See <http://cosc.canterbury.ac.nz/tim.bell/edem/edem665-pre-quiz.txt>

New Zealand NCEA Achievement Standards

- < The courses directly cover the following NCEA Achievement Standards:
- < Demonstrate understanding of basic concepts from computer science AS91074
- < Construct a plan for a basic computer program for a specified task AS91075
- < Construct a basic computer program for a specified task AS91076
- < Demonstrate understanding of advanced concepts from computer science AS91371
- < Construct a plan for an advanced computer program for a specified task AS91372
- < Construct an advanced computer program for a specified task AS91373
- < Demonstrate understanding of areas of computer science AS91636
- < Develop a complex computer program for a specified task AS91637

Digital Technologies | Hangarau Matihiko

- < Computational Thinking and Computer Science topics

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