TEAC 7018 COMPUTATIONAL THINKING ACROSS THE STEM CURRICULUM

Credit Points 10

Legacy Code 102509

Coordinator Nathan Berger (https://directory.westernsydney.edu.au/search/name/Nathan Berger/)

Description This subject will enable students to develop knowledge of computational thinking as it can be applied across the STEM curriculum in schools. Students will learn about the nature of computational thinking as a problem solving approach which can be applied to produce digital solutions. The subject will allow students to undertake a critical examination of innovative, interdisciplinary approaches to the development of computational thinking and relevant pedagogical strategies to maximise student learning and engagement with STEM disciplines.

School Education

Discipline Teacher Education, Not Elsewhere Classified.

Student Contribution Band HECS Band 1 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

An understanding of at least one STEM (science, technology, engineering or mathematics) school syllabus.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Demonstrate a critical understanding of computational and algorithmic thinking
2. Apply knowledge of the K-10 Australian curriculum: Digital Technologies in developing STEM units.
3. Create and evaluate interdisciplinary STEM units which integrate computational thinking in meaningful ways across traditional subject boundaries.
4. Apply an understanding of data management, organisation and representation for analytical problem solving.

Subject Content

1. The nature of computational thinking
2. The Australian Curriculum: Digital Technologies
3. Algorithmic thinking
4. Working with data across the curriculum
5. Computational thinking across the curriculum

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Professional Task	2000 words	50	N	Individual
Professional Task	2000 words	50	N	Individual

Teaching Periods

Spring (2023)
Online
Online
Subject Contact Nathan Berger (https://directory.westernsydney.edu.au/search/name/Nathan Berger/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7018_23-SPR_ON_2#subjects)