



School of Education

EDST6726  
Extension Mathematics Method 1

Term 1, 2019







#### **4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH**

This subject aims to develop best practice in teaching based on current research. During the course students will expand their knowledge of The Australian Curriculum for New South Wales documents. Lectures, tutorials and assignments will cover a variety of approaches to teaching and learning in the Mathematics classroom. Emphasis will be given to the relationship between Mathematics, literacy and numeracy, the proficiencies, the general capabilities, and the role and value of Mathematics in the curriculum and the community.

Student-centred activities will form the basis of the course. These activities will draw on the prior 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 secondary students they will later teach.

#### **5. TEACHING STRATEGIES**

Explicit teaching, including lectures, to 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.

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





Price, K (2012), *Aboriginal and Torres Strait Islander Education: An Introduction for the Teaching Profession*. Cambridge University Press

Watson, A., Jones, K., & Pratt, D. (2013). *Key Ideas in Teaching Mathematics: Research-based Guidance for Ages 9-19*. Oxford University Press. Also available as an iBook or on Kindle.

### Recommended Websites

Students can download syllabuses from the NESA website

<http://educationstandards.nsw.edu.au/wps/portal/nesa/home>

<https://education.nsw.gov.au/>

[www.aamt.com.au](http://www.aamt.com.au)

<http://libguides.csu.edu.au/HSC/math>

[www.hsc.csu.edu.au](http://www.hsc.csu.edu.au)

[www.cecsw.catholic.edu.au](http://www.cecsw.catholic.edu.au)

[www.tes.co.uk/teaching-resources](http://www.tes.co.uk/teaching-resources)

[www.curriculum.edu.au](http://www.curriculum.edu.au)

[www.desmos.com](http://www.desmos.com)

[www.curriculumsupport.education.nsw.gov.au](http://www.curriculumsupport.education.nsw.gov.au)

[www.merga.net.au](http://www.merga.net.au)

[www.aboriginaleducation.nsw.edu.au/index.html](http://www.aboriginaleducation.nsw.edu.au/index.html)

[www.geogebra.org](http://www.geogebra.org)

[www.nswteachers.nsw.edu.au](http://www.nswteachers.nsw.edu.au)

[www.scootle.edu.au](http://www.scootle.edu.au)

[www.mansw.nsw.edu.au](http://www.mansw.nsw.edu.au)

[mathslinks.net](http://mathslinks.net)

[www.efofex.com](http://www.efofex.com)

<http://nrich.maths.org/>

## 8. ASSESSMENT

Assessment Task	Length	Weight	Student Learning Outcomes Assessed	AITSL Standards	National Priority Area Elaborations	Due Date
1. Writing Assessment tasks	2 500 words equiv.	40%	1, 2, 4	1.2.1, 1.3.1, 2.1.1, 3.3.1, 3.4.1	A1-9, B1-5, D1-19	29 Mar 5pm

## **Assessment Details**

### **1. Creating a Rich Task for a topic in Mathematics (40%)**

Construct a 20-minute rich assessment task for a topic/s from the Stage 4 NSW Mathematics syllabus using your ICT skills to present it.

The assessment should be a written assessment task (e.g. it can be an end of unit test or an assessable project).

Identify all NSW syllabus *outcomes* in the task and show how they are linked to the questions in the assessment.

You will need a written reflection to explain why you think it is a good assessment and how you would modify this task to meet the needs of your students (differentiation). You must avoid giving your own opinion without any backing from research literature on assessments in Mathematics.

Explain how the proficiencies are being used in the task. (Reasoning, Problem Solving, Fluency, Understanding)

Explain and justify whether your task is Assessment for learning, Assessment of learning or Assessment as learning.

Explain how you could use this task to inform your teaching.

Include solutions and justify your marking criteria for this task.

Include a rubric for the task.

Word counts for such assessments may vary greatly. If you are unsure about this aspect, please email me for further clarification.

**2. The use of technology in teaching mathematical concepts (40%)**

Explain how you would use a computer-based mathematical tool (e.g. Geogebra, Autograph, MSEXcel, Wolfram Alpha,



