



COURSE OUTLINE

EDU400

Teaching Primary School Mathematics

Course Coordinator: Anne Bennison (abenniso@usc.edu.au) **School:** School of Education and Tertiary Access

2022 | Semester 1

USC Sunshine Coast

USC Caboolture

USC Fraser Coast

USC Gympie

**BLENDED
LEARNING**

Most of your course is on campus but you may be able to do some components of this course online.

Please go to the USC website for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

This course will challenge you to engage positively with mathematics as you explore the content and proficiency strands of the Australian Curriculum: Mathematics. You will develop an understanding of the use of pedagogy and assessment for learning and teaching mathematics in primary school classrooms. This course develops your personal identity as a primary school mathematics teacher.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – You are required to engage and interact with asynchronous materials and activities accessed through Canvas modules, course readings and required texts.	2hrs	Week 1	10 times
Tutorial/Workshop 1 – On campus tutorial.	2hrs	Week 1	10 times
Seminar – Online	1hr	Week 1	6 times

1.3. Course Topics

- Understanding how children learn mathematics
- Inquiry based learning experiences
- Content and proficiency strands of the Australian Curriculum: Mathematics
- Mathematics Content Knowledge (MCK) for teaching mathematics in primary schools
- Assessing students' mathematics learning
- Differentiating curriculum to be inclusive of all learners
- Literacy, numeracy and ICT capability as General Capabilities in the Australian Curriculum
- Science, Technology, Engineering and Mathematics (STEM) in primary schools

2. What level is this course?

400 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Australian Institute for Teaching and School Leadership
<p>1 Explain mathematics teaching, learning and assessment in primary schools aligned with educational theories.</p>	Knowledgeable	2.1 - Content and teaching strategies of the teaching area 2.2 - Content selection and organisation 2.3 - Curriculum, assessment and reporting 2.5 - Literacy and numeracy strategies 2.6 - Information and Communication Technology (ICT)
<p>2 Apply mathematical knowledge, including mathematical communication, to demonstrate proficiency necessary to develop students' conceptual knowledge and understanding of mathematics in primary schools.</p>	Empowered	2.1 - Content and teaching strategies of the teaching area 2.2 - Content selection and organisation 2.5 - Literacy and numeracy strategies 2.6 - Information and Communication Technology (ICT)
<p>3 Apply knowledge of mathematics curriculum, pedagogy and assessment to the design of learning experiences and assessment opportunities that are informed by a range of teaching strategies and cater for diverse learner needs.</p>	Empowered	2.1 - Content and teaching strategies of the teaching area 2.2 - Content selection and organisation 2.3 - Curriculum, assessment and reporting 2.5 - Literacy and numeracy strategies 2.6 - Information and Communication Technology (ICT) 3.1 - Establish challenging learning goals 3.2 - Plan, structure and sequence learning programs 3.3 - Use teaching strategies 3.4 - Select and use resources 3.5 - Use effective classroom communication 3.6 - Evaluate and improve teaching programs 5.1 - Assess student learning 5.2 - Provide feedback to students on their learning 5.3 - Make consistent and comparable judgements 5.4 - Interpret student data 5.5 - Report on student achievement

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Australian Institute for Teaching and School Leadership
4 Explain the meaning of numeracy and its place as a general capability across all learning areas in the Australian Curriculum.	Knowledgeable	2.1 - Content and teaching strategies of the teaching area 2.2 - Content selection and organisation 2.3 - Curriculum, assessment and reporting 2.5 - Literacy and numeracy strategies 2.6 - Information and Communication Technology (ICT)
5 Communicate in written and oral texts using academic literacy skills including English expression, grammar, spelling, punctuation, and APA referencing conventions.	Knowledgeable	

5. Am I eligible to enrol in this course?

Refer to the [USC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

This course is only available to students enrolled in Program ED303, ED304, ED306.

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Understanding of primary school mathematics to year 7. Understanding of mathematical language in a primary school context.
Understanding of teachers' roles in supporting confident mathematics learners

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

A draft copy of your conference poster (Task 1) will be peer reviewed in your tutorial in Week 3.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Oral and Written Piece	Group	30%	1000 words (on poster) and 10-minute presentation	Week 4	Online Assignment Submission with plagiarism check and in class
All	2	Written Piece	Individual	40%	1500 words (inclusive of essay and peer feedback) and assessment task, rubric and mathematical response to the task.	Week 7	Online Assignment Submission with plagiarism check
All	3	Quiz/zes	Individual	30%	1.5 hours	Week 10	In Class

All - Assessment Task 1: Conference Poster and Presentation

GOAL:	The goal of this task is to collaborate with colleagues and engage in the process of real-world mathematical problem solving (numeracy) and apply this to learning mathematics in primary school classrooms.
PRODUCT:	Oral and Written Piece
FORMAT:	<p>This task gives you the opportunity to work in a group of four to create and present a conference poster of a real-world problem solving task that your group has investigated. The stimulus for the problem can be any real-world situation of interest to you that you might like to explore (e.g., How much water is wasted by a dripping tap? Is red wine good for your health? What is the best mobile phone plan?). You are to investigate your problem, create a digital poster (e.g., using PowerPoint or Canva) to display your findings and reflections on how the investigation could be adapted for learning mathematics in primary schools, and present your findings during the tutorial in Week 4.</p> <p>Part A: Digital Poster (1000 words; online submission)</p> <ul style="list-style-type: none"> • Problem or question investigated. • Numeracy and its place as a General Capability in the Australian Curriculum. • Findings of the investigation (including the mathematics behind solving the problem). • Mathematical concepts and processes engaged with during the investigation. • Theoretical perspectives that support and value this approach to teaching and learning mathematics in primary classrooms. • How the task could be adapted for primary students (including links to the Australian Curriculum: Mathematics). • An analysis of the investigation using the 21st Century Numeracy Model. • References <p>Part B: In-class Poster presentation (10 minutes)</p> <ul style="list-style-type: none"> • Summary of the key points displayed on the poster.

CRITERIA:	No.	Learning Outcome assessed
	1	Application of mathematical knowledge, including mathematical communication, to demonstrate proficiency necessary to develop students' conceptual knowledge and understanding of mathematics in primary schools. 2
	2	Explanation of the meaning of numeracy its place as a general capability across all learning areas in the Australian Curriculum. 4
	3	Explanation of mathematics teaching and learning in primary schools aligned with educational theories. 1
	4	Application of knowledge of mathematics curriculum and pedagogy to the design of learning experiences that are informed by a range of teaching strategies and cater for diverse learner needs. 3
	5	Communication in written and oral texts using academic literacy skills including English expression, grammar, spelling, punctuation, and APA referencing conventions. 5

All - Assessment Task 2: Mathematics Assessment Task, Rubric and Task Response, Peer Feedback, and Reflective Essay

GOAL:	The goal of this task is to apply assessment principles to the design of assessment tasks and rubrics that could be used to assess mathematics learning in primary school classrooms.
PRODUCT:	Written Piece
FORMAT:	<p>Part A: Assessment Task, Rubric and Task Response (to be included as Appendix A in your submission.)</p> <ul style="list-style-type: none"> Apply current theories, assessment principles and research to design (or source) a mathematics task that can be used to assess students' mathematical learning. Create a rubric that is aligned to the assessment task and provides criteria and standards of achievement for Year 4, 5 or 6 in the Australian Curriculum: Mathematics. Provide a mathematical response to your assessment task. By the end of Week 5, email the assessment task and rubric to a peer nominated by your tutor for feedback. <p>Part B: Peer feedback (200-300 words; to be included as Appendix B in your submission)</p> <ul style="list-style-type: none"> Provide feedback on your peer's task and rubric that is consistent with current theories, assessment principles and research. Justify your feedback with reference to appropriate literature. Email your feedback to your peer by the end of Week 6. <p>Part C: Reflective essay (1000-1200 words)</p> <ul style="list-style-type: none"> Explain mathematics assessment principles. Critically evaluate and appraise the value of your task and rubric for assessing mathematical learning with reference to mathematics assessment principles. <p>Submission</p> <ul style="list-style-type: none"> Cover sheet: Name, Student ID, Course, Name of task, Word count for reflective essay Reflective Essay (followed by references on a new page) Appendix A: Your assessment task, rubric and mathematical response to the task. Appendix B: Your peer feedback (200-300 words) followed by your peer's assessment task and rubric. <p>Note: Use 12 point Times New Roman and double line spacing.</p>

CRITERIA:	No.	Learning Outcome assessed
	1	Application of knowledge of mathematics curriculum, pedagogy and assessment to the design of learning experiences and assessment opportunities that are informed by a range of teaching strategies and cater for diverse learner needs. 3
	2	Explanation of mathematics assessment in primary schools aligned with educational theories. 1
	3	Application of mathematical knowledge, including mathematical communication, necessary for developing students' conceptual knowledge and understanding in primary schools 2
	4	Communication in written texts using academic literacy skills including English expression, referencing conventions, grammar, technical accuracy. 5

All - Assessment Task 3: In-class Quiz

GOAL:	The goal of this task is to synthesise knowledge of curriculum, pedagogy and assessment.	
PRODUCT:	Quiz/zes	
FORMAT:	Short answer quiz questions based on content from Learning Materials and tutorial activities. The quiz questions require application of knowledge of mathematics, curriculum, pedagogy and assessment.	
CRITERIA:	No.	Learning Outcome assessed
	1	Application of mathematical knowledge, including mathematical communication, necessary to develop students' conceptual knowledge and understanding of mathematics in primary schools. 2
	2	Application of knowledge of mathematics curriculum, pedagogy and assessment to the design of learning experiences and assessment opportunities that are informed by a range of teaching strategies and cater for diverse learner needs. 3

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

7.1. Schedule

PERIOD AND TOPIC	ACTIVITIES
Week 1: Engaging with mathematics and the Australian Curriculum: Mathematics	Learning materials, course readings & tutorial activities. Text: Chapter 1 and Chapter 8
Week 2: Working mathematically	Learning materials, course readings & tutorial activities. Text: Chapter 7
Week 3: Number and Algebra	Learning materials, course readings & tutorial activities. Text: Chapter 12
Week 4: Assessing mathematics learning	Learning materials, course readings & tutorial activities. Text: Chapter 6 Tutorial: Poster presentations (Task 1)
Week 5: Rational number and financial literacy	Learning materials, course readings & tutorial activities. Text: Chapter 11 Tutorial: Assessing mathematics learning (preparation for Task 2)
Week 6: Measurement	Learning materials, course readings & tutorial activities. Text: Chapter 13
Week 7: Geometry	Learning materials, course readings & tutorial activities. Text: Chapter 15 Assessment due: Task 2
Week 8: Probability	Learning materials, course readings & tutorial activities. Text: Chapter 14 (pp. 340-350)
Week 9: Statistical literacy	Learning materials, course readings & tutorial activities. Text: Chapter 14 (pp. 351-372)
Week 10: Numeracy across the curriculum & STEM Education in primary schools	Learning materials, course readings & tutorial activities. Course reading: Goos, M., Geiger, V., Dole, S. Forgasz, H. & Bennison, A. (2020). Numeracy across the curriculum. Routledge. Chapter 5 Numeracy opportunities (pp. 103-127) Tutorial: In class quiz (Task 3)

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Required	Robyn Jorgensen, Shelley Dole, Kevin Larkin	0	Teaching Mathematics in Primary Schools	n/a	Routledge
Recommended	John Van de Walle, Karen Karp, Jennifer Bay-Williams, Amy Brass, Brendan Bentley, Sue Ferguson, Wendy Goff, Sharyn Livy, Margaret Marshman, David Martin, Cath Pearn, Theodosia Prodromou, Duncan Symons, Karina Wilkie	2019	Primary and Middle Years Mathematics: Teaching Developmentally	n/a	Pearson

8.2. Specific requirements

Nil

9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the [online induction training for students](#), and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%

The course is graded using the Standard Grading scale

You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.

- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.

- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUSC

USC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUSC by phone: [07 5430 1168](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUSC team by phone [07 5456 3864](tel:0754563864) or email safe@usc.edu.au.

The SafeUSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call [07 5430 1226](tel:0754301226) or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the [Learning Advisers](#) web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to [Student Hub](#), email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, [AccessAbility Services](#) can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to [Student Hub](#), email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website: <https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.9. Student Charter

USC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The [Student Charter](#) sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.10. General Enquiries

In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **USC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **USC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au