



The University of Southern Queensland

## Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.  
Please consult the web for updates that may occur during the year.

<b>Description: Mathematics Teaching</b>						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ECE	4020	90822	2, 2009	ONC	1.00	Toowoomba

<b>Academic group:</b>	FOEDU
<b>Academic org:</b>	FOE004
<b>Student contribution band:</b>	National Priority Teaching
<b>ASCED code:</b>	070103

### STAFFING

Examiner: Deborah Geoghegan  
Moderator: Nicole Todd

### OTHER REQUISITES

State law in Queensland (Australia) requires that all adults working/undertaking professional experience/researching with children under the age of 18, in the state of Queensland are required to possess a current suitability card (Blue Card). (See "Other Requirements" for further information.)  
Also see: <http://www.childcomm.qld.gov.au/employment/bluecard/informationSheets.html>.

### RATIONALE

Teaching mathematics to young children is a complex endeavour. For prospective teachers of early years school mathematics to feel confident in their roles, they need to experience quality mathematics teaching, to be mathematically competent, to know students as learners of mathematics and to know how to implement appropriate mathematical pedagogy. The development of positive attitudes and a broad knowledge base will assist in positioning teachers as effective mathematics educators when working in the early years of schooling.

### SYNOPSIS

The course aims to consolidate knowledge, skills and understanding of the specialised mathematical concepts, processes and affects of the early years of primary school mathematics curriculum together with a focus on the methodology used in instruction. This will assist the development of competent and confident teachers of mathematics when working within the early years of school.  
NOTE: Minimum enrolment numbers apply to this offering. Should enrolments not reach the minimum number required for on-campus study, students may be transferred to the EXT or WEB offering and advised of this change before semester commences.

### OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course students will be able to:

1. demonstrate knowledge of the concepts and processes associated with numeration, operations, estimation, measurement, problem solving, space, chance and data, graphs and patterns associated with early algebra (Presentation and Term Plan)
2. describe and apply appropriate instructional strategies in relation to the content areas listed in 1 above (Presentation)
3. plan and evaluate lessons across the early years of primary mathematics curriculum (Presentation and Term Plan)
4. justify and describe how to integrate the use of technology in mathematics lessons (Presentation and Term Plan)
5. diagnose and remediate errors in mathematical thinking (Presentation and Term Plan)
6. describe and incorporate current mathematical assessment approaches (Term Plan)
7. use and evaluate, mathematical materials and resources (Presentation and Term Plan)
8. demonstrate an awareness of selected mathematics education issues in the early years of primary school (Presentation and Term Plan)
9. work confidently with current mathematics syllabus documentation (Presentation and Term Plan)
10. demonstrate competence in appropriate use of language and literacy, including spelling, grammar, punctuation and bibliographic referencing (Presentation and Term Plan).

## TOPICS

	Description	Weighting (%)
1.	The mathematics of working with Number and Operations	30.00
2.	Models and theories of mathematics curriculum planning	15.00
3.	Current, innovative curriculum frameworks and reforms	10.00
4.	Planning lessons using problem-centred learning and the use of appropriate resources including Mathematics syllabus documents	10.00
5.	Knowledge of mathematics pedagogy: appropriate teaching strategies and contextualising learning	10.00
6.	Space, Measurement, Chance and Data, Patterns and Algebra	10.00
7.	Technology in the early primary school mathematics classroom	5.00
8.	Equity, diversity and positive attitudinal issues in the mathematics classroom	10.00

## TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

Sperry Smith, Susan 2006, *Early childhood mathematics*, 3rd edn, Allyn & Bacon,

## REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Whether you are on, or off campus, the USQ Library is an excellent source of information <http://www.usq.edu.au/library/> . The gateway to education resources is here...

<http://www.usq.edu.au/library/faculties/education/default.htm>

Bennett, A & Nelson, T 2006, *Mathematics for elementary teachers: a conceptual approach*, 7th edn, McGraw-Hill, Boston.

Booker, G 2004, *Teaching primary mathematics*, 3rd edn, Pearson Longman, Frenchs Forest, NSW.

Carnellor, Y 2004, *Encouraging mathematical success for children with learning difficulties*, Social Science Press, Southbank, Vic.

Clements, DH, Sarama, J & DiBiase, A 2003, *Engaging young children in mathematics: standards for early childhood mathematics education*, Lawrence, Erlbaum, Mahwah, NJ.

Kamii, C 1994, *Young children continue to reinvent arithmetic - 3rd grade: implications of Piaget's theory*, Teachers College Press, New York.

National Council of Teachers of Mathematics 2000, *Principles and standards for school mathematics*, NCTM, Reston, VA.

Wright, RJ, Martland, J & Stafford, AK 2006, *Early numeracy: assessment for teaching and intervention*, 2nd edn, Paul Chapman Publishing, London.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Directed Study	70.00
Independent Study	70.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
PRESENTATION	40.00	40.00	02 Oct 2009 (see note 1)
TERM PLAN	60.00	60.00	30 Oct 2009

### NOTES

1. The Examiner will advise the due date for assessment item.

## IMPORTANT ASSESSMENT INFORMATION

### 1 Attendance requirements:

It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their

- chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks.
  - 3 Penalties for late submission of required work:  
If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
  - 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
  - 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
  - 6 Examination information:  
There is no examination in this course.
  - 7 Examination period when Deferred/Supplementary examinations will be held:  
As there are no examinations in this course, there will be no deferred or supplementary examinations.
  - 8 University Regulations:  
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

## **OTHER REQUIREMENTS**

- 1 **IMPORTANT NOTE:** Working with Children: State law in Queensland requires that all adults (including university students, pre-service educators, trainers, vocational teachers, industry educators) working with children under the age of 18, in the state of Queensland\*, obtain approval before commencing such work. Many education courses include a practical component (professional experience, project work, research, assessment etc.) that may require engagement with children under the age of 18. It is your responsibility to ensure that you possess a current suitability card (Blue Card) before commencing any practical components of this course. **DO NOT PARTICIPATE IN ANY PRACTICAL EXPERIENCE WITH CHILDREN UNDER 18 UNLESS YOU POSSESS A CURRENT 'BLUE CARD'.** For further information:  
<http://www.childcomm.qld.gov.au/employment/bluecard/informationSheets.html>. \*If you are undertaking practical experience outside the state of Queensland, Australia you should check local requirements.
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