Description: Mathematics Education 1

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
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<td>ONC</td>
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Academic group: FOEDU
Academic org: FOE002
Student contribution band: 1
ASCED code: 070103

STAFFING
Examiner: Leo Crameri
Moderator: John Green

RATIONALE
Teaching mathematics is a complex endeavour. For prospective preschool and primary teachers to cope, they need to experience quality mathematics teaching, to be mathematically competent, to know students as learners of mathematics and to know and apply mathematical pedagogy as well as develop dispositions to teach mathematics. This course is the first in a suite of two core courses in mathematics education.

SYNOPSIS
The content strands of measurement, problem solving, space, chance, data analysis and graphs are explored in depth and relevant processes, affects and instructional approaches discussed. Other aspects to be covered include lesson planning in mathematics and integrating the use of technology (especially calculators) in the mathematics program. Relevant commercial and teacher-made mathematical resources are explored and evaluated. Thus, the course aims to consolidate and extend knowledge and understanding of the mathematical concepts, processes and affects of the above content strands of the primary-school mathematics program with a focus on the method used in the instruction of those concepts, processes and affects. This will assist preservice teachers in becoming competent and confident teachers of mathematics.

OBJECTIVES
On completion of this course students will be able to:

1. describe currently researched and recommended strategies for teaching the "Number", "Patterns and Algebra", "Measurement", "Chance and Data" and "Space" strands in the new p-10 mathematics syllabus
2. demonstrate an understanding of the mathematical concepts that make up these strands
3. identify challenges faced by the typical teacher of mathematics
4. construct appropriate strategies and responses for addressing these situations
5. modify such strategies to suit particular needs and situations
6. demonstrate an ability to test such responses that have been, in the context of group meetings, exposed to adaptation and refinement
7. demonstrate frameworks for thinking about and articulating their own approaches to teaching mathematics.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Numbers</td>
<td>20.00</td>
</tr>
<tr>
<td>2. Patterns and algebra</td>
<td>20.00</td>
</tr>
<tr>
<td>3. Measurement</td>
<td>20.00</td>
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<tr>
<td>4. Chance and data</td>
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</tr>
<tr>
<td>5. Space</td>
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**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).

Workbook: *EDU1421 Mathematics Education 1*, University of Southern Queensland, Toowoomba.

**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.

**STUDENT WORKLOAD REQUIREMENTS:**

<table>
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<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Assessment</td>
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<tr>
<td>Directed Study</td>
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<td>Group Work</td>
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<td>Private Study</td>
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<td>Workshops</td>
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**ASSESSMENT DETAILS**

<table>
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<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg(%)</th>
<th>Due date</th>
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<tbody>
<tr>
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<tr>
<td></td>
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<td>(see note 1)</td>
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<td>1.5 HOUR EXAMINATION</td>
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<td>70.00</td>
<td>END S2</td>
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<td></td>
<td></td>
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<td>(see note 2)</td>
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</table>

**NOTES:**

1. The course examiner will advise the due dates for all nominated assessment items. Letter grades will be used in this course and displayed in the Notes Section.
2. Students will be advised of the examination date for this course when the official examination timetable for S2 2004 has been finalised.

**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 complete the practical component satisfactorily, students must submit all nominated assessment items and obtain at least 50% of the marks available (or at least a grade of C-) for each report submitted.

3. **Penalties for late submission of required work:**
   If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.
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 available weighted marks for the summative assessment items.

5 **Method used to combine assessment results to attain final grade:**
   The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.

6 **Examination information:**
   In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.

7 **Examination period when Deferred/Supplementary examinations will be held:**
   There will be no Deferred or Supplementary examinations in this course.

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.

**ASSESSMENT NOTES**

1 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.

2 Students must retain a copy of each item submitted for assessment. This must be produced within twenty-four (24) hours of receipt of request being made by the Examiner. The student must retain this copy until the grade for this course has been finalised.

3 The Examiner may grant an extension of the due date of an assignment in extenuating circumstances.

4 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next working day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.

5 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.

6 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination); IDM (Incomplete - Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).
7 When there is more than one marker for a single item of assessment, the distributed patterns and means for the different markers will be compared and marks adjusted if necessary.

8 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media. The Faculty will NOT accept submission of assignments by facsimile. Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the Examiner of the course to negotiate such special arrangements.

9 Marking criteria are provided in course material as mark sheets/guides or as part of assignment specifications.

10 All nominated assessment items must be submitted with a pass overall gained.


**OTHER REQUIREMENTS**

1 Students will require access to e-mail and Internet access to USQConnect for this course.

2 Students are to use a recognised referencing system a specified by the course examiner.