Description: The Emergent Numeracy of Young Children

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
</tr>
</thead>
</table>
| ECE     | 2016    | 18177 | 3, 2002 | EXT | 1.00  | TWMB  

Academic Group: FOEDU  
Academic Org: FOE004  
HECS Band: 1  
ASCED Code: 070101

STAFFING
Examiner: Noel Geoghegan
Moderator: Deborah Geoghegan

RATIONALE
From infancy, children are actively engaged in developing concepts which allow the organisation and categorisation of information. Through interaction with the environment during everyday experiences, children construct and test their concepts which include mathematical thinking. It is important that adults (including parents and caregivers) who are influential in the early years of a child's life have an understanding of how young children develop mathematical knowledge so that appropriate experiences may be provided. Additionally, an awareness of the development of mathematical language, fundamental mathematical concepts and skills, and the sequence of the discipline knowledge of mathematics is necessary for teachers to plan effective learning opportunities for children.

SYNOPSIS
This course examines the development of mathematical concepts and skills in children from birth to eight years. Emphasis is given to the types of learning experiences which encourage the young child's exploration and development of the fundamental concepts, attitudes, and skills involved in emerging numeracy.

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

- Demonstrate an understanding of the teaching and learning theories associated with mathematical development in young children
- Apply such theories to the development of appropriate learning and assessment activities
- Explain the role of language in the teaching and learning mathematics
- Utilise appropriate mathematical language for teaching and learning mathematics
- Describe a range of learning environments and materials for young children which enhance mathematical learning
- Explain the importance of play in mathematical learning
- Describe mathematical learning opportunities which may be provided through structured and unstructured activities
- Critically evaluate various materials to assess their usefulness and relevance in mathematical experiences
- Identify the fundamental mathematical concepts, skills and attitudes which young children usually develop from birth to eight years
- Explain higher-level mathematical concepts which children may develop in early childhood
- Describe problem solving applications for young children which foster their mathematical learning
- Identify number skills developed by young children
- Employ ways to encourage parents in developing mathematical thinking in young children.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The development of math concepts</td>
<td>15.00</td>
</tr>
<tr>
<td>2. The role of language in teaching and learning</td>
<td>15.00</td>
</tr>
<tr>
<td>3. The role of materials in developing mathematics thinking</td>
<td>10.00</td>
</tr>
<tr>
<td>4. Fundamental mathematical concepts, attitudes, and skills</td>
<td>10.00</td>
</tr>
<tr>
<td>5. Applications of fundamental concepts and skills</td>
<td>10.00</td>
</tr>
<tr>
<td>6. Mathematical learning through play</td>
<td>10.00</td>
</tr>
<tr>
<td>7. Sets and number symbol skills</td>
<td>5.00</td>
</tr>
<tr>
<td>8. Higher-level activities and concepts</td>
<td>10.00</td>
</tr>
<tr>
<td>9. Young children and problem solving</td>
<td>10.00</td>
</tr>
<tr>
<td>10. Parents and maths in the home</td>
<td>5.00</td>
</tr>
</tbody>
</table>

**TEXT and MATERIALS required to be PURCHASED or ACCESSED:**

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.

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.


Hawthorne, W 1992, *Young Children and Mathematics*, Australian Early Childhood Association Inc,


### STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>45</td>
</tr>
<tr>
<td>Directed Study</td>
<td>80</td>
</tr>
<tr>
<td>Private Study</td>
<td>40</td>
</tr>
</tbody>
</table>

### ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVALUATE MATH EQUIPMENT</td>
<td>40.00</td>
<td>40.00</td>
<td>Y</td>
<td>10 Jan 2003</td>
</tr>
<tr>
<td>DESIGN NUMERACY PROGRAM</td>
<td>60.00</td>
<td>60.00</td>
<td>Y</td>
<td>21 Feb 2003</td>
</tr>
</tbody>
</table>

### OTHER REQUIREMENTS

1. When there is more than one marker for a single item of assessment, the distribution patterns and means for the different markers will be compared and marks adjusted if necessary.

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

3. Summative assessment items will be given a numerical score.

4. Course Grades will be calculated by aggregating the weighted result or numerical score for each summative assessment item.

5. All assessment items must be submitted. Assessment items must be passed overall.

6. If assignments are submitted after the due date without an approved extension of time, University penalties will apply.