PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

MATH AND SCIENCE IN EARLY CHILDHOOD
ECED 2085

Class Hours: 3.0 Credit Hours: 3.0
Laboratory Hours: 0.0 Revised: Spring 04

Note: This course is not designed for transfer credit.

Catalog Course Description:
A course on the standards, principles, and practices in teaching mathematics and science to young children aged birth to nine. An emphasis will be placed on developing and integrated math and science curriculum that includes appropriate content, processes, environment and materials, and child-centered choices. Field experiences required.

Entry Level Standards:
Must be able to read and write at the college level.

Prerequisites:
Department Approval

Textbook(s) and Other Course Materials:

I. Week/Unit/Topic Basis:

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<th>Week</th>
<th>Topic</th>
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<tr>
<td>1</td>
<td>Emergent Mathematics</td>
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<td>2</td>
<td>Creating a Mathematical Environment</td>
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<td>3</td>
<td>Mathematics Principles</td>
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<td>4</td>
<td>Mathematics Principles</td>
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<td>5</td>
<td>Creating a Mathematics Curriculum</td>
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<td>6</td>
<td>Numbers and Operations</td>
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<td>7</td>
<td>Patterns and Measurement</td>
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<td>Principles of Science</td>
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<td>9</td>
<td>Scientific Methods</td>
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II. Course Objectives*:

A. Identify appropriate concepts for early childhood learning in math and science.
B. Understand commonalities between math and science.
C. Understand and identify variations in individual and cultural learning styles and the need for curriculum integration.
D. Understand and implement experiences for children to engage in play that incorporates math and science.
E. Demonstrate understanding of math and science concepts through planning appropriate experiences for children that support the development of math and science skills.
F. Demonstrate appropriate individual child assessment methods in math and science learning.

*Roman numerals after course objectives reference goals of the ECEd program.

III. Instructional Processes*:

Students will:

1. Identify and use appropriate manipulatives for teaching math and science.
2. Use analytical thinking to examine mathematical and scientific processes.
3. Use the assigned texts to support theoretical basis for teaching math and science.
4. Use the internet to communicate with instructors and peers.
5. Research and develop appropriate math and science activities to extend professional knowledge.

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Compile a bibliography of appropriate literature that contains math and science concepts for infants, toddlers and preschool children with strategies to support integration of math and science in a variety of learning centers.

2. Create a listing of culturally relevant a appropriate materials for learning centers that encourage science process skills.
3. Create a documentation board to provide children’s families with information that will increase understanding of how children acquire math and science knowledge skills.

4. Develop teacher-made materials for children’s exploration and play experiences to support development in math and science areas.

5. Complete exams on terms, concepts, and strategies for providing and integrated math and science curriculum.

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

   Students will complete examinations on their knowledge of early childhood education principles throughout the course.

B. Laboratory Expectations:

   Students will keep a journal, reflecting on each class topic. They will share in writing the knowledge they have learned and how they will use this knowledge in the classroom.

C. Field Work:

   N/A

D. Other Evaluation Methods:

   N/A

E. Grading Scale:

VI. Policies:

A. Attendance Policy:

   Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meeting in order to receive credit for the course.

B. Academic Dishonesty:

   Plagiarism, cheating, and other forms of academic dishonesty are prohibited. A student guilty of academic misconduct, either directly or indirectly through participation or assistance, is immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions that may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F for the exercise or the examination or to assign an F in the course.