

PELLISSIPPI STATE COMMUNITY COLLEGE  
MASTER SYLLABUS

**MATH & SCIENCE IN EARLY CHILDHOOD  
ECED 2085**

**Class Hours: 3.0**

**Credit Hours: 3.0**

**Laboratory Hours: 0.0**

**Revised: Fall 2012**

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 children age birth to nine. Emphasis is on developing an integrated math and science curriculum that includes appropriate content, processes, environment and materials, and child-centered choices.

**Entry Level Standards:**

Must be able to read and write at the college level.

**Prerequisites:**

ECED 2015, 2020; or department approval

**Textbook(s) and Other Course Materials:**

Required:

Copley, J.V. (2000). *The Young Child and Mathematics*. Washington, D.C.: NAEYC. ISBN: 0-935989-97-8

Moomaw, S & Hieronymus, B. (1995). *More Than Counting.: Whole Math Activities for Preschool and Kindergarten*. St. Paul, MN: Redleaf Press. ISBN: 978-1-884834-03-5.

Supplementary:

Moomaw, S. & Hieronymus, B. (2002). *Much More Than Counting*. St. Paul, MN: Redleaf Press. ISBN:978-1884834660.

Charlesworth, R. & Lind, K.K. (2003). *Math and Science for Young Children*, 4th Edition. Clifton Park, NY: Delmar Learning. ISBN: 0-7668-3227-9.

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1	Emergent Mathematics
2	Creating a Mathematical Environment
3	Mathematics Principles
4	Creating a Mathematics Curriculum
5	Numbers and Operations

6	Patterns and Measurement
7	Principles of Science
8	Scientific Methods
9	Scientific Processes
10	Scientific Processes
11	Science Curriculum
12	Science Curriculum
13	Creating a Scientific Environment
14	Assessing the areas of math and science
15	Final Exam Period

## **II. Course Goals\*:**

The course will:

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

\*Roman numerals after course goals reference goals of the ECED program.

## **III. Expected Student Learning Outcomes\*:**

The student will 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. A,B,C,D,E,F
2. Create a listing of culturally relevant appropriate materials for learning centers that encourage science process skills. A,B,C,D,E,F
3. Create a documentation board to provide children's families with information that will increase understand of how children acquire math and science knowledge skills. A,B,C,D,E,F

4. Develop teacher-made materials for children's exploration and play experiences to support development in math and science areas. A,B,C,D,E,F
5. Complete exams on terms, concepts, and strategies for providing and integrated math and science curriculum. A,B,C,D,E,F

\* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

#### **IV. 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.

#### **V. Policies:**

##### A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

##### B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

##### C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated

should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at <http://www.pstcc.edu/sswd/>.