## Department Master Syllabus

## Camden County College

## Blackwood, New Jersey

**Course Title:** Math/Science for the Preschool Child

**Course Number**: EED-210

**Department/Program Affiliation:** Early Childhood Education

**Date of Review:** May 2013

(This Department Master Syllabus has been examined by the program/department faculty members and it is decided that no revision is necessary at this time.)

**Date of Last Revision**: N/A

(This Department Master Syllabus has been examined by the program/department faculty members and it is decided a change requiring a revision is necessary at this time.)

**N.B.** A change to the course materials alone (textbooks and/or supplementary materials) may not constitute a revision. Any other change to the items listed below on this form is considered a revision and requires approval by the program faculty at a Program/Department Meeting and by the division at a Chairs and Coordinator Meeting.

**Credits**: 3

# Contact Hours: Lecture 3 Lab 0 Other 0

**Prerequisites:** None

**Co-requisites:** None

**Course Description:**

This course offers the student an opportunity to explore principles, methods and materials for teaching young children math and science concepts through discovery and experimentation. Emphasis is on the planning, implementation, and evaluation of developmentally-appropriate activities utilizing a variety of methods and materials.

**Course Student Learning Outcomes: (**Cognitive, Psychomotor, Affective Domains)

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

1. Relate the sequence of cognitive development to the acquisition of math and science concepts.
2. Describe the scientific process and its application to the early childhood environments.
3. Utilize observation and assessment as a basis for planning discovery experiences for the individual child.
4. Create, evaluate, and select developmentally appropriate materials, and methods to support the attainment of math and science concepts and skills.

**General Education Student Learning Outcomes (if applicable):** N/A

**Course Outline:**

1. Concept Development in Mathematics and Science
   1. How concepts develop
   2. How concepts are acquired
   3. Promoting young children’s concept development through problem solving
   4. Assessing the child’s developmental level
   5. The basics of science
   6. How young scientists use concepts
   7. Planning for science
2. Fundamental concepts and skills
   1. One-to-one correspondence
   2. Number sense and counting
   3. Logic and classifying
   4. Comparing
   5. Early Geometry: shape
   6. Early Geometry: spatial sense
   7. Parts and wholes
   8. Language and concept formation
   9. Fundamental concepts in science
3. Applying fundamental concepts, attitudes and skills
   1. Ordering, seriation and patterning
   2. Measurement: volume, weight, length and temperature
   3. Measurement: time
   4. Interpreting date using graphs
   5. Applications of fundamental concepts in Preprimary Science
   6. Integrating the Curriculum through thematic units
4. Symbols and higher-level activities
   1. Symbols
   2. Groups and symbols
   3. Higher-levels activities and concepts: units and activities
5. Mathematics concepts and operations for Primary grades
   1. Operations with whole numbers
   2. Patterns
   3. Fractions
   4. Numbers above 10 and place value
   5. Geometry, data collections and algebraic thinking
   6. Measurement with standard units
6. Using skills, concepts and attitudes for scientific investigations in the primary grades
   1. Overview of primary science
   2. Life Science
   3. Physical Science
   4. Earth and Space Science
   5. Environmental Awareness
   6. Health and Nutrition

**Course Activities:** (A brief sentence or two about the format of the course, certain requirements, etc.)

* Lectures using multimedia supplemental presentations
* Classroom discussions and debates
* ‘Hands-on’ classroom demonstrations
* Small group projects
* Reading assignments and journal writing activities

**Assessment of Student Learning Outcomes:** The student will be evaluated on the degree to which student learning outcomes are achieved. A variety of methods may be used such as tests, class participation, projects, homework assignments, etc. (There must be some evidence that the learning outcomes have been achieved.)

* Participation and attendance
* Math classroom observation and paper
* Science classroom observation and paper
* Small group project and ‘peer lesson’
* Lesson in on-campus childcare center
* Math lesson plans/activity file
* Science lesson plans/activity file
* Midterm and final exam

**Course Materials:**

**Textbook(s):** *Math and Science for Young Children*, Rosalind Charlesworth and karen K. Lind. Delmar; Clifton Park, NY, 2009.

**Supplemental Materials:** There is an online companion for students to access publisher materials. The log-in information comes with the text.