### Course Syllabus

**Course Title:** Science & Math for Children  
**Department:** Social Sciences  
**Curriculum:** Early Childhood Education  
**Date submitted:** May 2019  
**Course Code:** ECE*109  
**Prerequisites:**  
- C- or better in Integrated Reading and Writing I (ENG*065) or placement into Integrated Reading and Writing II (ENG*075) OR Introduction to College Reading & Writing (ENG*093) OR Introduction to College English (ENG*096) OR Reading & Writing VI (ESL*162) or Composition (ENG*101)  
- AND C- or better in Prealgebra & Elementary Algebra (MAT*085) or Introductory Algebra (MAT*094) or Elementary Algebra Foundations (MAT*095) OR placement into any credit-level mathematics course.  

**Course Type:** 
- Lecture (L)  
- A: Clinical  
- B: Lab  
- D: Distance Learning  
- I: Individual/Independent  
- L: Lecture  
- M: Seminar Internship  
- P: Practicum  
- U: Studio  
- X: Combined Lecture/Lab  
- Y: Combined Lecture/Studio

**Elective Type:**  
- G: General  
- E: English  
- FA: Fine Arts  
- HI: History  
- FL: Foreign Language  
- G: General  
- HU: Humanities  
- LAS: Liberal Arts & Sciences  
- M: Math  
- S: Science  
- SS: Social Science

**Credit Hours:** 3  
**Developmental:** No  
**Contact Hours:**  
- Lecture: 3  
- Clinical: 0  
- Lab: 0  
- Studio: 0  
- Other: 0  
- TOTAL: 3  
**Class Maximum:** 35  
**Semesters Offered:** F/S

**Course Descriptors:** Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

**Catalog Course Description:**  
The focus is on mathematics and science for young children. Students will acquire knowledge of materials and methods for integrating math and science concept development into the curriculum. Emphasis will be on understanding these areas from a child development perspective. Active participation working with children will be required.

**Topical Outline:**  
1. Concept development in mathematics and science  
   a. How concepts develop  
   b. How concepts are acquired
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c. Promoting young children’s concept development through problem solving
d. Assessing the child’s developmental level
e. The basics of science
f. How young scientists use concepts

2. Fundamental concepts and skills
   a. One-to-one correspondence
   b. Number sense and counting
   c. Logic and classifying
d. Comparing
e. Shape
f. Spatial sense
g. Parts and wholes
h. Language and concept formation
i. Fundamental concepts in science

3. Integrating the curriculum through dramatic play and thematic units and projects

4. The math and science environment
   a. Materials and resources for math and science
   b. Math and science in action
c. Math and science in the home

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

COURSE:
1. demonstrate an understanding of the background and curricular areas of math and science as they relate to Early Childhood Education;
2. describe commonalities between mathematics and science;
3. understand the importance of the Professional standards for mathematics and science
4. use the CT Preschool Curriculum Framework (Logical Content Standards—Mathematical/Scientific Thinking) as a guide to create experiences and activities, which provide children with opportunities to:
   a. express wonder, ask questions and seek answers about the natural world; b. recognize and solve problems through active exploration, including trial and error and interacting with peers and adults; c. organize and express their understanding of common properties and attributes of things;
5. explore and gain familiarity with materials and methods appropriate to different developmental stages in mathematics and science;
6. develop the ability to effectively plan, implement, and evaluate mathematics and science activities for young children;
7. explain the importance of language in communicating, reasoning and making connections in regard to math and science;
8. implement strategies to encourage family involvement in developing math and science concepts;
9. recognize the importance of the home as an educational setting for math and science; and
10. relate math and science activities to a child’s everyday life.

PROGRAM:  (Numbering reflects Program Outcomes as they appear in the college catalog)
1. use knowledge of how children develop and learn in order to provide opportunities that support the physical, emotional, social, language, cognitive, and aesthetic development of all young children from birth through age 8
2. use knowledge of how young children differ in their development and approaches to learning to support the development and learning of individual children
3. c and modify environments and experiences to meet the individual needs of all children, including children with disabilities, developmental delays, and special abilities
17. actively seek out opportunities to grow professionally by locating and using appropriate professional literature, organizations, resources, and experiences to inform and improve practice
### GENERAL EDUCATION:
(Numbering reflects General Education Outcomes as they appear in the college catalog)

5. **Information Literacy/Continuing Learning** - Students will be able to use traditional and digital technology to access, evaluate, and apply information to the needs or questions confronting them throughout their academic, professional, and personal lives.

- **Demonstrates**: Collects and synthesizes relevant and authoritative information resources appropriate to need and audience and utilizes current technologies to solve problems, complete projects, and make informed decisions.
- **Does Not Demonstrate**: Does not collect and synthesize relevant and authoritative information resources appropriate to need and audience nor satisfactorily utilize current technologies to solve problems, complete projects, and make informed decisions.

### Evaluation:
List how the above outcomes will be assessed.

Assessment will be based on the following criteria:

### Instructional Resources:
List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.

- **Required**: None
- **Desired**: None

### Textbook(s)
Refer to current academic year printout.