Class Hours: 3.0  Credit Hours: 3.0
Laboratory Hours: 0.0  Revised: Fall 2014

Note: This course is not designed for transfer credit.

Catalog Course Description:
A study of the standards, principles, and practices for teaching mathematics and science to children from birth through age 8. The course emphasizes developing an integrated math and science curriculum that includes appropriate content, processes, environment, and materials based on child-centered choices. Field experience is required.

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

Prerequisites:
ECEd 2315 or Department Approval

Textbook(s) and Other Course Materials:

Required:

Websites as assigned

Other Helpful Materials:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Math and Science in ECED</td>
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<td>2</td>
<td>Concept Development and Acquisition</td>
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<td>3</td>
<td>Basics of Science</td>
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<tr>
<td>4</td>
<td>One-to-One Correspondence/Number Sense and Counting</td>
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<tr>
<td>5</td>
<td>Logic and Classifying/Comparing/Shape/Spatial Sense</td>
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<tr>
<td>6</td>
<td>Parts and Wholes/Language and Concept Formation</td>
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<tr>
<td>7</td>
<td>Fundamental Concepts in Science</td>
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</table>
II. Course Goals*:

A. Identification of learning outcomes for young children in math and science. (5a)

B. Identification of standards for math and science instruction and programming in early education settings. (5a)

C. Planning math and science experiences for children throughout an integrated, play-based curriculum. (4b, 4c)

D. Planning and implementing appropriate experiences for children that support the development of child outcomes in five area 1) Number and Operations, 2) Geometry and Spatial Sense 3) Patterns and Measurement, 4) Scientific Skills and Methods, and 5) Scientific Knowledge (5a, 5b, 5c)

E. Demonstration of appropriate individual child assessment methods in math and science learning. (3b)

F. Discussion and demonstration of how technology can be philosophically and physically integrated to support development of math and science in the curriculum. (4b)

*Numerals after Course Goals reference NAEYC Associate Degree Standards

NAEYC Associate Degree Standards:
The following standards are addressed in this course:

Standard 3: Observing, Documenting, and Assessing to Support Young Children and Families
   3b. Know about and use observation, documentation, and other appropriate assessment tools and approaches, including the use of technology in documentation, assessment, and data collection

Standard 4: Using Developmentally Effective Approaches
   4b. Know and understand effective strategies and tools for early education, including appropriate uses of technology
   4c. Use a broad repertoire of developmentally appropriate teaching/learning approaches
   4d. Reflect on own practice to promote positive outcomes for each child

Standard 5: Using Content Knowledge to Build Meaningful Curriculum
   5a. Understand content knowledge and resources in academic disciplines
   5b. Know and use the central concepts, inquiry tools, and structures of content areas or academic disciplines
   5c. Use own knowledge, appropriate early learning standards, and other resources to design, implement, and evaluate developmentally meaningful and challenging curriculum for each child
III. Student Learning Outcomes:
Upon successful completion of the course the student will be able to:
1. Identify learning outcomes for young children in math and science. (5a)
2. Identify standards for math and science instruction and programming in early education settings. (5a)
3. Plan math and science experiences for children throughout an integrated, play-based curriculum. (4b, 4c)
4. Plan and implement appropriate experiences for children that support the development of child outcomes in five areas: 1) Number and Operations, 2) Geometry and Spatial Sense 3) Patterns and Measurement, 4) Scientific Skills and Methods, and 5) Scientific Knowledge (5a, 5b, 5c)
5. Demonstrate appropriate individual child assessment methods in math and science learning. (3b)
6. Discuss and demonstrate how technology can be philosophically and physically integrated to support development of math and science in the curriculum. (4b)

*Numerals after Student Learning Outcomes reference NAEYC Associate Degree Standards

IV. Evaluation:

A. Assessment Procedures:
   Students will complete regular assessments (projects, exams, papers, journals, research, presentations) to test their knowledge of early childhood practices and theories.

B. Field Work:
   Students will plan and implement developmentally appropriate math and science experiences for young children.

C. Other Evaluation Methods:
   As determined by the instructor

V. Policies

A. Attendance

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.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for disabilities:

Students that 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 Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.