

## CUMBERLAND COUNTY COLLEGE

Course: Ed 201: Math, Science & Technology in Early Childhood Education

Credits: 3

Prerequisites: ED 106: Principles of Early Childhood Education  
PY 115: Child Development & Learning

Description:

An examination of basic math and science concepts with emphasis on problem-solving and logical thinking, designing units of study, and using technology in the classroom.

Learning Outcomes:

Course Outcomes are aligned with NAEYC Standards for Early Childhood Professional Preparation

At the completion of this course, students should be able to:

- Articulate the sequence of beginning math concept learning (NAEYC: 1, 4b, 4d)
- Demonstrate appropriate individual and small group math activities (NAEYC: 1, 4d)
- Demonstrate the scientific method of discovery (NAEYC: 1, 4b, 4c, and 4d).
- Design and implement appropriate science experiments (NAEYC: 1, 4b, 4c, and 4d.)
- Demonstrate knowledge of the Project Approach by designing a learning experience based on children's interests in a child-directed program. (NAEYC: 1, 4b, 4d).
- Select appropriate software for the ECE classroom which will supplement educational goals as stated in NJ ECE Program Expectations (NAEYC: 4c, 4d).
- Develop strategies such as open ended questions, inquiry experiences, problem solving and cooperative learning (NAEYC: 4c, 4d).
- Demonstrate the ability to apply the project approach in scientific investigation (NAEYC: 1, 4d).
- Select appropriate websites to enhance and complement the early childhood math and science curriculum (NAEYC: 4d)
- Exhibit appreciation of the natural environment and confidence in teaching math and science concepts found in everyday experiences. (NAEYC: 1, 4a, 4b, 4d).
- Demonstrate the implementation of various tools of technology to enhance critical and creative thinking skills in problem solving activities (NAEYC: 1, 4b, 4c, 4d).

Topical Outline:

- Constructivist Curriculum Framework for the Integration of Math and Science in Early Childhood
- Assessment
- Creating an Environment for Math and Science Integration

- Patterns
- Transformation
- Movement
- Balance and Symmetry
- Relationships
- Developing Your Own Curriculum: Big Ideas and Planning

Chaille ,Christine M, & McCormick Davis, Sara (2016). *Integrating Math and Science in Early Childhood Classrooms Through Big Ideas: A Constructivist Approach*. Pearson.

Van de Walle, J., Lovin, Lou Ann H., Karp, Karen, Bay-Williams, Jennifer (2014). *Teaching Student Centered Mathematics*, (2nd. ed.). Pearson.

Student Assessment: Technology Learning Activity and Project Approach Unit required. Additional assessment may be accomplished through projects, portfolios, exams, presentations and/or research papers.

Academic Integrity: Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation. Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense. As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Note: If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

### **Before Withdrawing From This Course**

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.