**Course Description**
This course covers contemporary teaching/learning strategies for mathematics and science instruction in early childhood and elementary classrooms. Instructional techniques integrate hands-on learning, manipulatives, the student’s environment, functional uses of mathematics and science, and assessment strategies appropriate for all students. The focus will be on the nature of children’s science and mathematics learning, the teacher as a facilitator of meaningful learning, and New York State and National Learning Standards for science, mathematics, and technology. Constructivism, the idea that individuals must build knowledge from their own experiences and thought, provides an underpinning for insights into the nature of children’s learning in the life and physical sciences and in mathematics. Includes field trip component. Prerequisites: Either Educ. 214 or SpEd. 234, and Math. 140. Pre- or co-requisite: Math. 141. (4-4-0).

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<th>STANDARDS/OUTCOMES</th>
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<th>ASSESSMENT</th>
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Selected Bibliography


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**Conceptual Framework Strands and Outcomes**

**A. Teacher as Scholar**

A Rigorous Liberal Arts and Sciences Education
1. Candidates demonstrate, appreciate, and advocate the value of a broad range of knowledge and skills in the liberal arts and sciences and are able to use oral and written communication skills effectively to analyze and convey information.
2. Candidates use appropriate technologies to enhance instruction and to promote active learning.

**B. Teacher as Constructivist Educator**

The Ability to Meet the Educational Needs of All Students
1. Based on their knowledge of student development within the context of family, school, and community, candidates understand how to create a classroom environment to help all students become successful learners.
2. Candidates use teaching and learning strategies consistent with an understanding of multiple perspectives, cultural and linguistic diversity, and different learning styles, and act in ways that welcome and encourage diversity.

**C. Teacher as Reflective Practitioner**

A Professional Commitment to Inquiry and Reflective Practice
1. Candidates understand the role of educational research in the classroom and apply that research in their teaching.
2. Candidates demonstrate ongoing professional growth as they implement new strategies, reflect on their teaching and its impact on their students, and adjust and revise their practices based on student needs and changing circumstances, and base curricular decisions on evidence of student learning.

**Dispositions**

All candidates will demonstrate a positive attitude toward teaching and learning by:

Developing a Professional Stance
1. Meeting professional and ethical standards
2. Communicating appropriately and working collaboratively
3. Demonstrating a commitment to child advocacy

Demonstrating Active Engagement in Teaching
1. Promoting active learning for all students
2. Demonstrating a commitment to reflective inquiry and practice
3. Seeking and responding to opportunities for change and growth

Welcoming Diversity
1. Treating all people with respect
2. Seeking out curriculum materials that respect and support diversity