



## SYLLABUS TEMPLATE

<b>Course Number Course Name</b>	ECE 475 Teaching and Learning Math and Science
<b>Credit Value (Breakdown of theory and lab credits)</b>	4 theory
<b>Catalog Course Description</b>	<p>The focus of this advanced curriculum is on the standards, principles and practices in teaching mathematics and science to young children in preschool through grade 3. An emphasis is placed on developing a content-rich integrated math and science curriculum that focuses on children’s development and interests including appropriate content, process, environment, and materials with special consideration given to problem-solving as the major method of constructing basic concepts. Field Experience Required. Pre-requisites: Early Childhood Education Core, Passing the Essential Academic Skills Assessment, Admission to the B.A. in Early Childhood Education Program. Pre-requisites: Early Childhood Education Core, Passing the Essential Academic Skills Assessment, Admission to the B.A. in Early Childhood Education Program. (4, 4T+0L)</p>
<b>Student Learning Outcomes of the Course</b>	<p>This course is part of the articulated Universal Catalogue of Courses for Early Childhood Education in the State of New Mexico. The following objectives are taken from the New Mexico State Department of Education's Common Core Competencies for early childhood professionals (see Common Core- Content manual). Upon completion of this course, students will be able to demonstrate the following competencies at the established level of proficiency:</p> <p>Demonstrate understanding and apply the following mathematical concepts:</p> <ol style="list-style-type: none"> <li>1. H.2.a.i – The arithmetic of real numbers and their subsets of rational numbers, integers, and whole numbers including a large repertoire of interpretations of the four basic operations and ways they can be applied, and an understanding of place value and its implications of ordering numbers and estimation.</li> <li>2. H.2.ii – Three dimensional geometry based on the concept of distance, and two dimensional geometry as a method of drawing plans and representing three (3) dimensional objects.</li> <li>3. H.2.iii – Measurement of length, perimeter, area, time, weights, and temperature.</li> <li>4. H.2.a.iv – Handling money problems such as cost and unit price.</li> <li>5. H.2.b– Demonstrate understanding of and skill in the constructions of solids, measurements of volumes and surface areas, drawing projections, and making plans for construction; define relevant variables and write formulas describing the relationships in problem-solving activities, use measurement tools and appropriate techniques for recording data and displaying results.</li> <li>6. H.2.c – Facilitate curriculum with open activities that promote children’s expansion of the material learned, and in which children learn to use a variety of mathematical skills and concepts, including problem solving, reasoning, and logic.</li> <li>7. H.2.d – Provide opportunities for children to learn how to use tools, technology, and manipulatives in problem solving.</li> </ol>



	<ol style="list-style-type: none"> <li>8. H.2.e – Establish a classroom environment of respect for cultural diversity and gender equity in which all children develop skills in communicating, discussing, and displaying mathematical ideas.</li> <li>9. H.3.a – Demonstrate understanding and apply the fundamental concepts in the subject matter of science including physical, life, and earth and space sciences as well as concepts in science and technology, science in personal and social perspectives, the history and nature of science, the unifying concepts of science, and inquiry process scientists use in discovery of new knowledge to build a base for scientific inquiry.</li> <li>10. H.3.b – Apply the scientific method to develop children’s abilities of identify and communicate a problem, and to design, implement and evaluate a solution.</li> <li>11. H.3.c – Demonstrate the ability to integrate a variety of technologies into planned science activities.</li> <li>12. H.3.d – Establish a classroom environment of respect for cultural diversity and gender equity where all children participate fully in science learning.</li> <li>13. I.6 – Support play in young children’s learning and development from PreK-grade 3.</li> <li>14. I.7 – Demonstrate sound knowledge and skills in using technology as a teaching and learning tool.</li> <li>15. I.9 – Demonstrate the ability to analyze and critique early childhood curriculum experiences in terms of the relationship of the experiences to the research base and professional standards.</li> <li>16. I.12 – Facilitate involvement to ensure that families are engaged with curriculum planning, assessing of children’s learning, and planning for children’s transitions to new programs.</li> <li>17. I.13 – Demonstrate conceptual knowledge of the principles and standards derived from professional content organizations (zero to three, NAEYC, DEC) for curriculum decision making.</li> <li>18. I.14 – Demonstrate the use of reflective practice.</li> </ol>
<p><b>College-Wide Student Learning Outcomes</b></p>	<p>ECE 475 learning objectives align with the following NNMCC College Wide Goals:</p> <p><b>Communication</b>                      NNMCC 1.a – Express ideas coherently and persuasively through oral and written communication.                      NNMCC 1.b – Speak coherently and appropriately for various audiences and situations.                      NNMCC 1.c – Present ideas and information effectively for specific purposes through written statements.</p> <p><b>Critical Thought</b>                      NNMCC 2.a – Analyze and synthesize information.                      NNMCC 2.d – Function as independent thinkers and as members of collaborative groups.</p> <p><b>Cultural Competence</b>                      NNMCC 3.a – Understand and appreciate cultural diversity.</p> <p><b>Information Literacy</b>                      NNMCC 4.b – Locate relevant information in printed and electronic form and credit it properly.</p>

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	<p>NNMC 4.e – Utilize and operating system effectively and produce documents using generic office programs such as word processing, spreadsheet and presentation software.</p> <p>NNMC 4.f – Use the internet to communicate effectively through e-mail and other communication tools.</p>
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