El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Child Development**
COURSE RUBRIC AND NUMBER	**CDEC 2307**
COURSE TITLE	**Math and Science for Early Childhood**
COURSE CREDIT HOURS	**3 2 : 2** **Credits Lec Lab**

I. Catalog Description

Explores the principles, methods, and materials for teaching children math and science concepts and process skills through discovery and play. **(2:2).**

II. Course Objectives

A. Unit I. Sequence of Cognitive Development of Math and Science Concepts

1. Summarize the sequential development of mathematical concepts.
2. Outline appropriate science concepts for children.
3. Describe how the development of mathematical concepts promotes young children's thinking skills.
4. Explain how to promote children's cognitive development and understanding of their world though active, hands-on exploration of science concepts and processes.
5. Compare Piaget and Vygotsky's theories of mental development as they relate to math and science.
6. Summarize how brain development affects concept formation.

B. Unit II. Scientific Process to the Early Childhood Classroom

1. Explain how to encourage all children to view themselves as competent scientific explorers.
2. Describe ways to promote children's ability to think scientifically by providing opportunities to observe, describe, classify, and order.
3. Summarize ways to nurture children's natural curiosity by encouraging them to explore and make discoveries about their world.

C. Unit III. Promote Thinking and Problem-Solving Skills

1. Explain how instructional methods involving the use of various types of thinking can enhance children's mathematical understanding.
2. Integrate curriculum content through themes, projects, play and other learning experiences so children make connections across disciplines.
3. Explain the use of webbing as a technique for integrating math and science throughout the classroom.
4. Use developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning, and inquiry experiences to

help children develop intellectual curiosity, solve problems, make decisions, and become critical thinkers.

D. Unit IV. Planning Discovery Experiences

1. Describe how to use a variety of assessment strategies to monitor children's progress in achieving outcomes and planning learning activities.
2. Outline a variety of assessment strategies such as anecdotal records, teacher observations, portfolio assessment, child self-assessment, and parental observation.
3. Explain how assessment information is interpreted and used to provide developmentally appropriate learning activities.

E. Unit V. Supporting the Attainment of Math and Science

1. Evaluate children's books, CD-ROMs, manipulatives, music, blocks, and other materials which enhance math and science concepts for developmental appropriateness.
2. Describe how to create a classroom environment that encourages emergent numeric by offering children varied, meaningful, and concrete learning experiences.
3. Discuss how technology can be physically and philosophically integrated to support development of math and science concepts in the classroom curriculum.
4. Explore community resources, including cultural, available for enhancing math and science concepts.
5. Make developmentally appropriate, culturally diverse, and nonsexist activities and materials to support development of specific math and science concepts.

III. THECB Learning Outcomes (WECM)

1. Relate the sequence of cognitive development to the acquisition of math and science concepts and describe the scientific process and its application to early care and education environments.
2. Develop strategies which promote critical thinking and problem-solving skills in children.
3. Utilize observation and assessment as a basis for planning discovery experiences for the individual child.
4. Create, evaluate, and/or select developmentally appropriate materials, equipment, and environments to support the attainment of math and science concepts and skills.

IV. Evaluation

1. The instructor will maintain a continuous record of each student's progress on an institutionally approved grade sheet or computerized substitute. All instructors must keep records in such a way that information would be clear to a second party having to check grade computation in special cases. An explanatory legend should be provided on the grade sheet.
2. The evaluation of the assignments should be based on the student's mastery of the assigned objectives. In addition assignments, the instructor may require quizzes and exercises on course content. The instructor may also require a journal or free writing assignments.
3. The course projects will be devised at the instructor's discretion.

Grading scale:

A = 90 – 100
B = 80 – 89*
C = 70 - 79*
D = 60 - 69*
F = below 60*
* Remediation

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.