Course Description: An exploration of principles, methods, and materials for teaching young children math and science concepts and process skills through discovery and play. This course requires 48 hours per semester of supervised fieldwork with young children. This course is only offered in Spring semesters. (Formerly CDP 1424, 1457) (4-3-3)

Prerequisites: CDEC/TECA 1311 and CDEC/TECA 1354 and CDEC 1413 or concurrent enrollment in CDEC 1413 and DEVR 0300 and DEVW 0310 or satisfactory score on appropriate placement test.

Co-requisites: CDEC 1413, and DEVR 0310 or DEVW 0320 or satisfactory score on appropriate placement test.

Required Texts: Current editions of Active Experiences for Active Children: Science, by Seefeldt, Galper & Jones and Active Experiences for Active Children: Mathematics by Seefeldt & Galper

Instructional Methodology: Students will participate in a variety of activities in class including instructor lectures, group discussions and projects. In addition, a regularly scheduled lab will be required.

Course Rationale: The purpose of this course is to demonstrate the integration of math and science into classrooms for young children as well as practice doing so in an applied setting.

<table>
<thead>
<tr>
<th>Child Development Program Level Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD 1: The student will apply an understanding of child development and learning.</td>
</tr>
<tr>
<td>STANDARD 2: The student will explain how to build family and community relationships.</td>
</tr>
<tr>
<td>STANDARD 3: The student will demonstrate how to observe, document and assess in order to support young children and families.</td>
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<tr>
<td>STANDARD 4: The student will demonstrate skills in teaching and analyze young children’s learning.</td>
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<tr>
<td>STANDARD 5: The student will demonstrate skills of a professional.</td>
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</tbody>
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Updated 10/2011
Course Objectives:
1. Relate the sequence of cognitive development to the acquisition of math and science concepts.
   a. Summarize the sequential development of mathematical concepts.
   b. Outline appropriate science concepts for children.
   c. Describe how the development of mathematical concepts promotes children’s thinking skills.
   d. Explain how to promote children’s cognitive development and understanding of their world through active, hands-on exploration of science concepts and processes.
   e. Compare theories of cognitive development as they relate to math and science.
   f. Summarize how brain development affects concept formation.
   g. Compare gender similarities and differences in the acquisition of math and science concepts.

Standard 1
2. Describe the scientific process and its application to the early childhood indoor and outdoor learning environments.
   a. Explain how to encourage all children to view themselves as competent scientific explorers.
   b. Describe ways to promote all children’s ability to think scientifically (e.g., by providing opportunities to observe, describe, classify and order).
   c. Summarize ways to nurture all children’s natural curiosity by encouraging them to explore and make discoveries about their world (e.g., by using their senses to gain information, draw conclusions and report outcomes).

Standards 1 & 4
3. Develop strategies which promote thinking and problem-solving skills in children.
   a. Explain how instructional methods involving the use of various types of thinking (e.g., exploration, discovery learning, problem solving) can enhance children’s mathematical and scientific understanding.
   b. Describe how to integrate curriculum content through a variety of learning experiences so children make connections across disciplines.
   c. Explain techniques for integrating math and science throughout the curriculum.
   d. Plan 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.

NAEYC Standards and Program Level Outcomes:
All coursework in ACC’s Child Development Department include student learning opportunities and outcomes that address the National Association for the Education of Young Children’s Standards for Early Childhood Professional Preparation in Associate Degree Programs. The Standards intentionally cover areas of professional preparation that are required to be sure that all young children will receive the kind of early education they need and deserve. Following are the Standards which are included in your coursework:

STANDARD 1: The student will apply an understanding of child development and learning by:

1a: Knowing and understanding young children’s characteristics and needs
1b: Knowing and understanding the multiple influences on development and learning
1c: Using developmental knowledge to create healthy, respectful, supportive, and challenging learning environments

STANDARD 2: The student will explain how to build family and community relationships by:

2c: Involving families and communities in their children’s development and learning

STANDARD 3: The student will demonstrate how to observe, document and assess in order to support young children and families by:
3b: Knowing about and using observation, documentation, and other appropriate assessment tools.

STANDARD 4: The student will demonstrate skills in teaching and analyze young children’s learning by:
4c: Knowing and understanding the importance, central concepts, inquiry tools, and structures of content areas or academic disciplines
4d: Using own knowledge and other resources to design, implement, and evaluate meaningful, challenging curriculum to promote positive outcomes

Updated 10/2011
e. Brainstorm strategies to encourage girls to feel competent in math and science.

**Standard 4**

4. Utilize observation and assessment as a basis for planning discovery experiences for the individual child.
   a. Review a variety of assessment strategies.
   b. Explain how assessment information is interpreted and used to provide developmentally appropriate learning activities.
   c. Use a variety of assessment strategies to monitor children’s progress in achieving outcomes and planning learning activities.

**Standard 3**

5. Create, evaluate and/or select developmentally appropriate materials, equipment and environments to support the attainment of math and science concepts.
   a. Evaluate children’s books, software, manipulatives, music, blocks and other materials which enhance math and science concepts for developmental appropriateness.
   b. Describe how to create indoor and outdoor environments that encourage emergent numeracy and scientific literacy by offering children varied, meaningful and concrete learning experiences.
   c. Discuss how technology can be philosophically and physically integrated to support development of math and science concepts in the curriculum.
   d. Explore community resources, including cultural, available for enhancing math and science concepts.
   e. Make and use developmentally appropriate, culturally diverse and nonsexist activities and materials to support development of specific math and science concepts.
   f. Adapt math and science activities, materials, equipment and environments for children with special needs.

**Standards 1, 2 & 4**

**SCANS Competencies:** Identifying, organizing, planning, and allocates resources (Resources); acquiring and using information (Information); working with others (Interpersonal); reading, writing, performs arithmetic and mathematical operations, listening and speaking (Basic Skills); thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons (Thinking Skills); displays responsibility, self-esteem, sociability, self-management, integrity, and honesty (Personal Qualities).

**Course and Lab Policies and Requirements:**

**Lab Policy:** This course has 48 required hours of working in a classroom (field experiences) for young children at the ACC Lab School or the student’s place of employment, if appropriate. Students are encouraged to complete at least one-third of their lab hours at the ACC Children’s Lab School. To be eligible to participate in field experiences, you must meet the eligibility criteria of the Child Development’s Eligibility for Field Experiences Policy. The Child Development Department’s policy reflects the standards established by both:

- the Texas Department of Family and Protective Services, which is explained in the catalog and on the “Austin Community College Children’s Lab School Criminal Conviction Statement for Child Development Lab Students”,
- and criteria set by the Austin Independent School District for volunteer eligibility which prohibits anyone with a felony within the last five years for offenses involving moral turpitude (acts that are generally considered morally or ethically wrong, including crimes that involve dishonesty, fraud, deceit, theft, misrepresentation.)

**You must complete all required hours to receive credit for this course.**

**Course Grading Lab Pass Statement:** To successfully pass this course you must pass lab. If you do not receive a passing evaluation from your Lab School supervising teacher or from me, you may not pass the course. You may be asked to withdraw, receive an “F” or be asked to continue working on lab competencies for this course. All of this is explained in more detail on your handouts: “Procedure for Assisting Child Development Students to Improve Their Lab Practice” and the “Child Development

Updated 10/2011
To successfully complete the lab portion of this course, you are expected to:

- demonstrate the behaviors required in *Minimum Standards for Licensed Child Care Centers* and noted on the "Child Development Department Lab and Field Work Agreement"
- demonstrate the competencies discussed in your "Lab Expectations Handout"
- follow the policies of your lab placement site

**Reading and Writing Requirements:** This course requires that students have successfully completed Reading Fundamentals (DEVR 0300) and Writing Fundamentals (DEVW 0310) or obtained a satisfactory score on an appropriate placement test. To remain in this course, you must be concurrently enrolled in Reading Skills Improvement (DEVR 0310) and Writing Skills I (DEVW 0320) or satisfactory score on an appropriate placement test.

**Legible Assignments:** All assignments are expected to be written in complete sentences and to contain understandable paragraphs. Work that does not reflect these expectations will be returned to you for correction. The ACC Labs are wonderful resources and the Lab tutors will help you be sure that your assignments meet these expectations.

**Professional Ethics:** You are expected to maintain professional ethics while in this course. Careful adherence to NAEYC’s Professional Code of Ethics when dealing with families, children, colleagues and supervising teachers is mandatory. Information about the Code of Ethics is available on NAEYC’s website at [www.naeyc.org](http://www.naeyc.org). In addition, classroom discussions and all written work must reflect our commitment to maintaining issues of confidentiality for all children and families who allow our observations.

**College Policies**

**Attendance/Class Participation:**
Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. Each instructor will establish an attendance policy. Students must adhere to the attendance policy as stated in the individual course syllabus.

**Withdrawal Policy**
It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.

State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

**Incompletes**
An instructor may award a grade of “I” (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Updated 10/2011
**Statement on Scholastic Dishonesty**
A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at [http://www.austincc.edu/current/needtoknow](http://www.austincc.edu/current/needtoknow)

**Student Rights and Responsibilities**
Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

**Statement on Students with Disabilities**
Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from OSD for this course must provide the instructor with the 'Notice of Approved Accommodations' from OSD before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the 'Notice of Approved Accommodations' from the student.

Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about the Office for Students with Disabilities is available at [http://www.austincc.edu/support/osd/](http://www.austincc.edu/support/osd/)

**Safety Statement**
Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at [http://www.austincc.edu/ehs](http://www.austincc.edu/ehs). Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at [http://www.austincc.edu/emergency/](http://www.austincc.edu/emergency/).

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

You are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.

Updated 10/2011
Use of ACC email
All College e-mail communication to students will be sent solely to the student’s ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at http://www.austincc.edu/accmail/index.php.

Testing Center Policy
Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

- ACC Photo ID
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g., 1301)
- Course Synonym (e.g., 10123)
- Course Section (e.g., 005)
- Instructor's Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at http://www.austincc.edu/testctr/

Student And Instructional Services
ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: http://www.austincc.edu/s4/

Links to many student services and other information can be found at: http://www.austincc.edu/current/

ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: http://www.austincc.edu/tutor/students/tutoring.php

For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.