

Roane State Community College
Division of Social Science, Business, and Education
ECED 2385
Math and Science in Early Childhood Education

INSTRUCTOR INFORMATION

Name:

Office:

Office Hours:

Phone:

Email:

COURSE INFORMATION

Course Type:

Day and Time:

Credit Hours: 3

Course Description: Math and Science in Early Childhood is a course covering the standards, principles, and practices in teaching mathematics and science to young children birth through eight. The course emphasizes developing an integrated math and science curriculum that includes appropriate content, processes, environment and materials, and child-centered choices. Field experiences required.

Learning Outcomes:

- Outcome 1: Identify learning outcomes for young children in math and science. (5c)
- Outcome 2: Identify standards for math and science instruction and programming in early education settings. (5c, 6d)
- Outcome 3: Demonstrate appropriate individual child assessment methods in math and science learning. (3b)
- Outcome 4: Discuss how technology can be integrated to support development of math and science in the curriculum. (4b)
- Outcome 5: Design, implement, and evaluate science inquiry experiences for children in an integrated, research-based curriculum. (4b, 4c, 4d, 5b, 5c)
- Outcome 6: Design, implement, and evaluate math experiences for children that support the development of learning outcomes. (4b, 4c, 4d, 5b, 5c)
- Outcome 7: Demonstrate effective strategies for involving families in supporting math and science for young children. (2b, 2c)

NAEYC Associate Degree Standards: The following standards are addressed in this course:

Standard 2: Building Family and Community Relationships

2b. Supporting and engaging families and communities through respectful, reciprocal relationships

2c. Involving families and communities in young children's development and learning

Standard 3: Observing, Documenting, and Assessing to Support Young Children and Families

3b. Knowing about and using observation, documentation, and other appropriate assessment tools and approaches, including the use of technology in documentation, assessment and data collection.

Standard 4: Using Developmentally Effective Approaches

4b. Knowing and understanding effective strategies and tools for early education, including appropriate uses of technology.

4c. Using a broad repertoire of developmentally appropriate teaching/learning approaches.

4d. Reflecting on own practice to promote positive outcomes for each child.

Standard 5: Using Content Knowledge to Build Meaningful Curriculum

5b. Knowing and using the central concepts, inquiry tools, and structures of content areas or academic disciplines

5c. Using own knowledge, appropriate early learning standards, and other resources to design, implement, and evaluate meaningful and challenging curriculum for each child

Standard 6: Becoming a Professional

6d. Integrating knowledgeable, reflective, and critical perspectives on early education

Supportive Skills

SS 3: Written and Verbal Communication Skills

Prerequisites for the course: none

Course Topics:

- Learning outcomes in math and science
- Assessment methods in math and science
- Science curriculum
 - Science inquiry
 - Life, physical, and earth science
 - Science tray and discovery center
 - Developing an in-depth science study
- Math curriculum
 - Number operations
 - Patterns and symmetry

- Measurement
- Geometry and spatial sense
- Displaying and analyzing data

Specific Course Requirements: Field experience is required for this course. Students will be engaged in a minimum of 4 hours field experience in this course. Students may be required to keep a time card for documentation of hours completed

TEXTBOOKS AND SUPPLEMENTARY MATERIALS

Textbook: Charlesworth, R. & Lind, K. (2013). Math and Science for Young Children. Delmar Learning. ISBN: 978-1-111-83339-8

Supplementary Materials: **Will be provided by instructor in Momentum, excerpts from: Moomaw, S. & Hieronymus, B. (2011). *More Than Counting: Preschool and Kindergarten*, Standards Edition, St. Paul, MN: Redleaf Press ISBN: 978-1-60554-029-0

NOTE: Science readings are mostly journal articles provided in Momentum by instructor.

****Textbooks can currently be LOANED from the TECTA office to qualifying students.**

Ask your instructor for details.**

GRADING AND EVALUATION

Grading procedure: Each assignment has a point value assigned to it. The instructor will determine total points awarded for each assignment.

Grading scale:

Assignments and Evaluations: (may include, but not limited to)

PLAGIARISM AND ACADEMIC INTEGRITY

Academic Misconduct includes, but is not limited to, **Plagiarism, Cheating, Fabrication and Facilitation**. Academic misconduct is prohibited. Upon identification of misconduct, an instructor has the authority to assign an “F” or a zero for the exercise, the examination, or the entire course. Students guilty of academic misconduct that would typically result in the grade of “F” for the course will not be permitted to drop the class in which the academic misconduct occurred. The instructor will contact the appropriate Division Dean who will then contact Records and request that an administrative hold be placed on the course in question. The instructor will notify the student of the appropriate due process/appeal procedure. The administrative hold will remain in place until the academic misconduct matter is concluded.

STUDENTS WITH DISABILITIES

Qualified students with disabilities will be provided reasonable and necessary academic accommodations if determined eligible by the appropriate disability services office staff. Prior to granting disability accommodations in the course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services office staff. It is the student's responsibility to initiate contact with the disability services staff and to follow the established procedures for having the accommodation notice sent to the instructor. Students requiring modifications due to documented disability must notify faculty within the first two weeks of classes.

TECHNICAL SUPPORT AND ADDITIONAL STUDENT RESOURCES

CTAT/HELP DESK: If you are having problems logging into your course on Momentum, timing out of your course, using your course web site tools please call **CTAT** at 865-882-4556, M-F, 9-5 EST. For all other technical problems call **Help Desk** at: 865-3543000 Ext 4357.

SYLLABUS CHANGES

The instructor reserves the right to make changes to the syllabus as long as the students are notified.

OPTIONAL ITEMS

Honors Program: This course may be taken for Honors credit. If you are interested in the Honors Program, or in receiving Honors Credit for this class, please talk to the instructor. See the following Honors Program webpage for more information:

<http://www.roanestate.edu/?5873-Honors-Program>.

Library Services: Roane State Libraries are here to help all Roane State students in every discipline. The librarians can help find the books, articles, videos, databases and websites needed for academic success. They can also help the student in learning how to effectively research.

Roane State has libraries at the Harriman, Oak Ridge, and Scott campuses. Support staff can send books from these three locations to any other Roane State teaching location. The libraries also offer eBooks, eJournals, online videos and other online resources to support students wherever they need to learn. Using the library can make life a lot easier:

- Visit the library website: <http://www.roanestate.edu/library/>
- Ask the library for help: <http://www.roanestate.edu/library/ask.htm>
- Explore your library with research guides: <http://libguides.roanestate.edu/>
- Discover new books at your libraries: <http://libguides.roanestate.edu/newbooks>

Learning Center: Roane State's Learning Centers are a resource for extra help understanding assignments and course content. The Learning Centers offer tutoring in many

subjects. For more information, visit the learning center website:
<http://www.roanestate.edu/?6143-Learning-Center>

Early Childhood Course Policies

Email Communication Policy: It is the student's responsibility to check RaiderNet for RSCC email regularly (weekly). This is the official communication channel between the college and the student. Students are responsible for information communicated through those channels. Courses offered online and hybrid also have a Momentum email associated with the course. This is course specific communication and should also be checked regularly if enrolled in a course.

Experiences with Children: Each ECED course requires some level of fieldwork. It is essential to your learning that you interact and engage with young children throughout the coursework in the early childhood program. While you are not required to be employed, you are required to have access to an early childhood program that is approved by your instructor. Many assignments (including all Practica assignments) require that you are interacting in an early childhood setting (family childcare, HeadStart, childcare center, or Pre-K). Some assignments can be completed in a more informal setting such as family or relatives homes, or church nurseries. However, it is always preferable that your fieldwork be completed in an approved early childhood program. If you need help completing fieldwork, or have any questions about the qualifications, please ask your instructor.

Photos and Videos: Some assignments require you to photo or video your work. If you photo or video a child, you will need written permission from parent/guardian for each child in the photo/video. You are NOT required to photo/video children. Documentation needs to be of the work you are doing, not of the children themselves.

Grading Criteria:

1. Attendance/Participation in class: Class participation includes talking, listening, reading, and any variety of activities which are assigned by the instructor. If the course is an online or hybrid course, participation is achieved through logging in regularly (at least weekly) and completing all assignments as required by the instructor. Late arrival, leaving early, or absence from class must be arranged with the instructor. Failure to do so may affect the student's grade. It is not acceptable to walk in and out of class, unless there is an emergency.
2. Readings: Students are expected to read each assigned reading (journal, textbook, or other assigned material) and be prepared to discuss in class.
3. Assignments: Assignments are outlined at the beginning of the semester. The instructor may change assignments, but will notify students of any changes.
 - a. Students are expected to follow all instructions carefully on assignments. Become familiar with grading criteria and/or rubrics associated with assignments.
 - b. Ask questions if you are unsure or do not understand an assignment's directions or grading criteria.

- c. All assignments are to be typed (unless instructor gives specific directions otherwise). Students should use a 10, 11, or 12 point font in a typical text style (Times New Roman, Arial).
 - d. Spelling, punctuation, and grammar are taken into consideration in all assignments -- this includes discussion posts.
- 4. Exams: The instructor will inform students of any exams for the course. Many early childhood courses rely heavily on projects rather than exams; however, some courses do require exams. If an exam is given in class, it is the student's responsibility to be in attendance for the exam. The instructor reserves the right not to allow make-up exams.
- 5. Submitting assignments: Instructors will notify students if assignments are to be turned in via Momentum or handed in in person.