Claudius Clemmer College of Education
Department of Curriculum and Instruction
SCED 4321
Residency I: Science
3 hours
8 hours of lab science and MATH 1530 or Math 1840 or Math 1910 and MATH 1410 and MATH 1420
Pre-requisites: CUAI 4310 CUAI 4210 READ 4026 CUAI 4570
Addresses methodology and theories for teaching and learning elementary science (K-6). Course requires 50 clock hours of residency in the public school.

Purpose and Goals

To prepare teacher candidates to teach science to students in grades K-6.

Goals:

· Develop an understanding of learning how to teach science.

· Review basic principles of learning science (particularly those advocated by Vygotsky and Piaget) including the importance of concrete materials and experiential learning.

· Explore the role and effective uses of technology for research, computing, as an aid in problem solving, and as a tool for exploring environmental science issues on a global as well as local scale.

· Review relevant research related to teaching and learning science, particularly information related to working with students of all academic levels and with unique learning characteristics.

· Explore professional journals (e.g., Teaching Children Science) and publications and professional conferences offered by professional organizations such as the National Association of Science Teachers.

· Examine the characteristics of a positive scientific and engineering community that supports the learning of all students including special education students and English language learners.

· Observe, analyze, teach, and reflect on the complexities of teaching science in elementary schools, particularly the interdisciplinary field of environmental science.

· Reference standards (e.g., Common Core State Standards, NSES Standards, and Next Generation Science Standards) in work throughout the course.

Major Course Topics

Course topics include the pedagogical topics of student learning; instructional strategies; assessment; and reflective teaching practices; as well as the content topics of environmental science as a multidisciplinary academic field that integrates physical and biological sciences (including but not limited to ecology, biology, soil science, geology, atmospheric science and geography) to the study of the environment, and the solution of environmental problems.

Learning Outcomes

At the completion of this course, the teacher candidate is expected to:

- illustrate a variety of research supported methods for developing instruction for a conceptual understanding of physical, life, earth, and environmental science concepts relevant to introductory science curricula.
- adapt and develop differentiated lessons that include appropriate instructional strategies and materials according to the characteristics of individuals in the classroom, taking into account learning theory and addressing diversity (learning styles, intelligences, and micro and macro cultures).
- perform authentic scientific research and demonstrate command of conceptual understanding of the content knowledge through a multimedia presentation of the research findings and researching assigned environmental issue statements.
- reference National, state, and local curriculum standards such as Common Core State Standards Initiative (http://www.corestandards.org/) and the Next Generation Science Standards (http://www.nextgenscience.org/next-generation-science-standards)

Major Assignments

A. Lab Participation (35%)

B. Summative Assessments: Mid-term (5%) and Final (10%)

1. The mid-term will be an online exam covering an overview of all topics covered in the first half of the course.

2. The final exam will be an overview of all topics covered over the entire term.

C. Independent Research and Web Postings (15%)

1. Oral Presentation of the Problem-based Learning Project:

2. **Readings/Discussions** requiring D2L participation:

3. Team Research Questions: Teams of 3 – 5 students will participate in researching assigned questions.

D. Teaching Assignment (35%)

Field Experiences

Activities will include observing lessons, preparing lessons, working with small groups of students, co-teaching, assessing students, and working with teachers and administrators. Passing requires residency attendance and a strong evaluation from the cooperating teacher. In the unlikely event that you cannot attend a scheduled visit, you must notify your cooperating teacher and field instructor.

50 hours of Residency placement in the public school is part of this course.

1. This assignment requires you to research, plan, and present an environmental science lesson to your field placement classroom. It also requires you to reflect on the lesson and write a response to the lesson. This assignment requires you to submit two components: (1) lesson plan and (2) written reflection. The submission of both components is due two weeks after the observation. (*See rubric*.) If you are unable to teach a lesson in your placement, an alternative assignment will be required. Lessons must be part of the cooperating teachers' curriculum and should not extend beyond one lesson.

- *Researching and Planning the Lesson*

Teaching the Lesson - Plan to teach the lesson while your placement teacher observes.

- *Reflecting on the Lesson*

Grade Assignment

Points/Percentages	Assignments
350 (35%)	In Class Labs (on-going)
50 (5%)	Midterm
100 (10%)	Final
50 (5%)	5 Discussions on D2L @ 10 Pts each
100 (10%)	Independent Research Problem-based Learning Project
350 (35%)	Teaching Assignment (50 hours)
1000	**Total Points**

Grading Scale

Grade	Points	Percentage
A	**1000 - 940**	**100 - 94**
A-	**939 - 920**	**93 – 92**
B+	**919 - 900**	**91 – 92**
B	**899 - 830**	**89 – 83**
B-	**829 - 810**	**82 – 81**
C+	**809 - 790**	**80 – 79**
C	**789 - 720**	**78 – 72**
C-	**719 - 700**	**71 – 70**
D+	**699 - 680**	**69 – 68**
D	**679 - 610**	**67 – 61**
F	**<619**	**61 or below**

Attendance Policy

Absences are discouraged. Any student who misses 20% of the classes will receive a failing grade.

Other Information

University Policies:

ETSU Honor Code

All students are expected to uphold the ETSU Honor Code. If you are not familiar with this statement and with the policy regarding plagiarism, we suggest you review both these documents online or in a current catalog.

As teacher candidates, students should be above reproach in matters of academic honesty. Candidates are expected to uphold ETSU's policies on plagiarism and similar offenses:

Academic misconduct will be subject to disciplinary action. Any act of dishonesty in academic work constitutes academic misconduct. This includes plagiarism, the changing or falsifying of any academic documents or materials, cheating, and the giving or receiving of unauthorized aid in tests, examinations, or other assigned school work. Penalties for academic misconduct will vary with the seriousness of the offense and may include, but are not limited to: a grade of F on the work in question, a grade of F for the course, reprimand, probation, suspension, and expulsion. For a second academic offense the penalty is permanent expulsion. Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions

which may be imposed through the regular institutional procedures as a result of academic misconduct, the instructor has the authority to assign an "F" or a zero for the exercise or examination, or to assign an "F" in the course.

Diversity Statement

ETSU commits itself to creating and perpetuating an environment in which diversity of people and thought is respected. Our aspiration is to create a university that fully appreciates the culture and the history of its surrounding region while it seeks to understand and accept the practices, beliefs, and customs of the greater global community.

Writing Center

ETSU maintains the Writing and Communication Center to provide individual assistance to students. The center is located in the library and has extensive hours. It is suggested that you make an appointment to ensure someone is available to help you without waiting.

Mental Health

Students often have questions about mental health resources, whether for themselves or a friend or family member. There are many resources available on the ETSU Campus, including: ETSU Counseling Center (423) 439-4841; ETSU Behavioral Health & Wellness Clinic (423) 439-7777; ETSU Community Counseling Clinic: (423) 439-4187. If you or a friend is in immediate crisis, call 911. Available 24 hours per day is the National Suicide Prevention Lifeline: 1-800-273-TALK (8255).

Accommodations:

It is the policy of ETSU to accommodate students with disabilities, pursuant to federal law, state law and the University's commitment to equal educational opportunities. Any student with a disability who needs accommodation, for example arrangement for examinations or seating placement, should inform the instructor at the beginning of the course. Faculty accommodation forms are provided to eligible students by Disability Services. Disability Services is located in the D.P. Culp Center, Room 326, telephone 439-8346. http://www.etsu.edu/disable/

Standards:

NCATE, INTASC, Tennessee Professional Education Standards, Tennessee Elementary Education Standards, College of Education Conceptual Framework Dimensions, ISTE Technology Standards

Required Textbook(s)

N/A

Required Reading(s)

N/A

Bibliography, Recommended Readings, and/or Supplemental Materials

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