



ELE 3290: Science in the Elementary School

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Theme: Educators As Creators of Effective Educational Environments

Course Description: Science in the Elementary School (3-0-3) Exploration of the nature, processes, and products of science and their relationships to society, the world, and the school curriculum. Field-based experiences will be in conjunction with Elementary Education 4000. Prerequisites: Concurrent enrollment in Elementary Education 3340 and Elementary Education 4880, or permission of the department chair.

Prerequisites: Six hours of science; Block I courses; and concurrent enrollment in Block II

Purpose of the Course: To involve students in the process of learning about the nature of science; a sample of its content and the methods used to acquire the content. With knowledge of such processes, and an understanding of student abilities, pre-service teachers will be able to design lessons compatible with various grade levels.

Outcomes for all ELE Classes:

- Demonstrate knowledge of facts and an understanding of fundamental principles, ideas and relationships among the various knowledge domains.
- Manage the classroom to optimize academically engaged time.
- Perform successfully within the social and political contexts of schools and community.
- Design instruction to promote a healthy self-concept in students.
- Demonstrate alternative methods of achieving similar learning outcomes.
- Decide what will be learned and ways to achieve it.

Outcomes specific to this course:

This course aims to have you experience/demonstrate success in developing:

- A positive attitude toward providing meaningful experience in science for your students.
- An understanding of the nature of science, the learner and the learning environment.
- A working knowledge of appropriate science learning and hands-on experiences for children.
- The ability to effectively utilize various types of materials, resources and media to engage children in meaningful science experiences.
- Knowledge of evaluation procedures for science.
- Skills in relating and applying science lessons to daily events and other subject areas.
- A comfortability with science teaching and learning.
- A familiarity with a scientific view of the world.

Learning Models: Ecological, Information-Processing and Development

Topics: The following themes will be addressed:

1. NATURE OF SCIENCE – 1 week
(What is science? Am I Scientifically literate?)
Characteristics of science and Attitudes/Ethics of science
Processes and Conceptual schemes of science
2. NATURE OF THE LEARNER – 1 week
(How do children develop? How do they learn?)
Processes of development and Cognitive development theory – Piaget
Inquiry learning and the Discovery approach
Learning Style (yours and theirs)
3. NATURE OF THE LEARNING ENVIRONMENT
(How should I teach? What is appropriate?)
Instructional strategies
Cooperative learning and Questioning techniques
Integrating science and Safety and Evaluation

Planning and Management

4. NATURE OF THE LEARNINGS-11 weeks

(What do I teach? What is important?)

Major goals of science instruction

Processes of science

Conceptual strands and the Learning Cycle and the Domains of Science

Concepts/Activities in Life, Physical, Earth and Environmental Sciences

Science Kit Development

Course Tasks/Outcomes	Criteria/Standards
1. ACTIVE Participation/Attendance	<input type="checkbox"/> Attendance at every class-13 pts/session (300 Pts) <input type="checkbox"/> Absences should be called in. <input type="checkbox"/> Note that Points can only be made up through presentation of an activity and news item.
2. Identification and oral communication of science updates	<input type="checkbox"/> Clear and thorough sharing of 5 items(20 Pts) <input type="checkbox"/> Clear and thorough sharing of 4 items (16 pts) <input type="checkbox"/> Clear and thorough sharing of 3 items (12 pts)
3. Locate and analyze articles related to science	<input type="checkbox"/> Written in-depth summary of 2 articles (20 pts) <input type="checkbox"/> Written cursory summaries of 2 articles (10 pts)
4. Development of a "Science Kit"	<input type="checkbox"/> Completion of unit with background information, interdisciplinary, creative, values, application, 3 process activities with resources, data sheets and graphics (120 pts) <input type="checkbox"/> Completion of unit with background information and 7 activities and resources (85 pts) <input type="checkbox"/> Completion of unit that needs further development (50 pts)
5. Presentation of an activity	<input type="checkbox"/> Clear presentation of an activity that engages all and has accurate science content (20 pts) <input type="checkbox"/> Idea conveyed but participation minimal (10 pts) <input type="checkbox"/> Idea introduced but not developed (5 pts)
6. Artifacts of Reflection and Relevance	<input type="checkbox"/> Appropriate selections with justifications (20 pts) <input type="checkbox"/> Compilation without descriptions (10 pts)

Rubric Explanation and Performance Based Evaluation Explanation

A-Exemplary-“Reads beyond the lines” >500 points (A = going beyond requirements)

B-Proficient-“Reads between the lines” 500-476 point (Accurate performance)

C-Improving-“Reads the lines” 475-451 points (Does what has to be done)

D-Deficient-“Has difficulty reading” 450-426 points (Incomplete understanding)

E-Remiss-“Doesn’t read” <426 points (Little or no effort)

HIGH EXPECTATIONS....if you want to demonstrate your love for learning, commitment for excellence and dedication to learn and to excel then consider these options which could merit your “exemplary” status.....share an activity (3) include additional activities in your kit (3) share a resource (3) share an extra update (3) share a journal article (3) or science related activity of your choice and relevance including an entry of science in your LiveText portfolio. To be an “A” level learner you should do more than just the “required tasks”....extend yourself so that you can be the best teacher and learner.

PLEASE USE THIS FORM TO KEEP TRACK OF ALL YOUR ACCOMPLISHMENTS AND POINTS

NAME _____

LEAPING at the opportunity to say that it's been a RIBBETING experience this semester!!!

PARTICIPATION (13 PTS X) _____

ARTICLES (10 PTS X) _____

PRESENTATION (20 PTS) _____

SCIENCE UPDATE (4 PTS X) _____

SCIENCE KIT (120 PTS) _____

ARTIFACTS (20 PTS) _____

EXTRA POINTS _____

TOTAL _____

COMMENTS _____

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