

## **ELE 3290: Science in the Elementary School: Fall 2007**

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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:** The Learning Cycle, Information-Processing and Development

**Topics:** The following themes will be addressed:

1. Nature of Science  
Integrating Science with other Disciplines
2. The Learner  
Piaget, Multiple Intelligences

3. The Learning Environment  
Constructivism, The Learning Cycle, Problem Based Learning, Differentiated Learning, Questioning, Safety
4. Assessment and Evaluation
5. National Science Education Standards  
Illinois Science Standards  
Illinois Student Achievement Test (ISAT)  
Authentic Assessment  
Evaluation Rubrics
6. The Classroom  
Classroom Organization, Classroom Management, Activity Centers, Activity stations
7. Concepts/Activities in Life, Physical, Earth and Environmental Sciences  
Science Tool Box Development

### Field Trips:

Ballard Nature Center – Altamont, IL. September 22 or Oct 13. Sign up for either date. If you have a class conflict on both of these dates an alternate assignment will be substituted. More information will be in your packet.

EIU Astronomical Observatory – Evening session TBA

Douglas-Hart Nature Center - TBA

The field trips will replace class meeting times. We will not meet on the following dates: August 29, September 26, November 7.

### Course Assignments and Expectations:

1. **Active Participation (260 points)** Classroom sessions involve hands-on activities that are difficult to make up if absent, attendance is required. Attendance will be taken daily. Participation includes the following: being in class on time (3-5 minutes early), looking at those who are speaking, working cooperatively with group members, being prepared for class by reading assignments, and being actively involved in labs and discussions. **If you are tardy be sure to check with the instructor so that you are not marked absent.** If an emergency arises please notify the instructor if you are unable to attend class by leaving a message on voice mail or e-mail. Ten points will be deducted for each absence.
2. **Content Area Readings (30 points-10 points each) Due Sept. 24**
3. **Take home science lab (20pts - 10pts each) Due Sept. 24**
4. **Illinois Learning Standards Assignment (30 points) Due Oct 24.**
5. **Science Lesson Presentation (50pts)** Students pairs. Presentation of a 30 minute Exploration activity that involves the entire class.
6. **Science Biographies (10points) Due Nov. 14**
7. **Science Notebook (50 points) Due Dec. 3**
8. **Science Activity Tool Box (100pts) Due Dec. 5**
9. **Final (50 points)**

**600 Total Points**

**A-Exemplary- 570+ points**

**B-Proficient- 569-492 points**

**C-Improving- 491-332 points**

**D-Deficient- 431-372 points**

**E-Remiss- <371 points**

***Course Text***

Martin, R., Sexton, S., Wagner, K., & Gerlovich, J. (2005). *Teaching science for all children* (4th ed.). Boston: Allyn and Bacon.

Carin, A. A., Bass, J. E., Contant, T. L. (2005). *Activities for teaching science as inquiry* (6<sup>th</sup> ed.). Upper Saddle River, NJ: Pearson, Merrill Prentice Hall.

**Please turn your cell phones off before entering the classroom.**