ELE3290.727-Science in the Elementary School/Fall 2007

Instructor:	Denise Reid
Location & Time:	DACC (Danville Area Community College) 220 Lincoln Hall TH 5-8:30
Office:	BB2211
Office Hours:	Tuesday: 12:30-1:30 p.m. Wednesday: 9:00 a.m.-11:00 a.m. Thursday: 12:30-1:30 p.m.
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National Science Education Standards http://www.nap.edu/readingroom/books/nses/html/

Illinois Learning Standards http://www.isbe.net/ils/standards.html

National Science Teachers Association http://www.nsta.org

The NSTA Learning Center http://learningcenter.nsta.org/

Illinois Science Teachers Association http://www.ista-il.org

CEPS Theme: Educators as Creators of Effective Educational Environments

Catalog 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 & Notes: ELE3000 and six semester hours in science. Concurrent enrollment with ELE3340, ELE4880, and ELE4000 (practica) is recommended.

Course Credits: 3

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 teach the content. Using theories of how children learn as a basis for instruction, the students develop their skills at teaching science processes through discovery, guided discovery, and inquiry lessons. Students will also understand the importance of assessment and evaluation, and will develop various means of assessment. ***Students will integrate technology in their lessons, projects, and science units.***

Outcomes specific to this course

1. A positive attitude toward providing meaningful experiences in science for your students.
2. An understanding of the nature of science, the learner, and the learning environment.
3. A working knowledge of appropriate science learning and hands-on inquiry experiences for children.
4. The ability to effectively utilize various types of materials, resources, and media to engage children in meaningful science experiments.
5. Knowledge of assessment and evaluation procedures for science.
6. The ability to plan, implement, and assess science instruction for elementary students.
7. The students will become familiar with the Illinois Learning Standards for Science and the National Science Education Standards.

ELE3290 Standards

Course requirements and demonstrated competencies are aligned with the following standards:

- Illinois Professional Teaching Standards (IPTS) http://www.isbe.state.il.us/profprep/PDFs/ipts.pdf including the Technology Standards for All Illinois Teachers (TSIT).
- SPA Standards Alignment (Special Professional Association Standards) Based on ACEI (Association for Childhood Education International) Standards http://www.acei.org/Synopsis.htm and http://www.acei.org.ncateindex.htm and NAEYC (National Association for the Education of Young Children) Standards http://www.naeyc.org/teachers/t_stands.html

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* (6th ed.). Upper Saddle River, NJ: Pearson, Merrill Prentice Hall.

Grading Scale

92% - 100% = A
82% - 91% = B
72% - 81% = C
62% - 71% = D
61% or below = F

Course Assignments and Expectations

1. **Active Participation (30 points)** Most lessons involve activities of some type that are difficult to make up if absent, so regular attendance is beneficial. 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, and being actively involved in labs and discussions. 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.
2. **Copy, read, highlight, and write reflective comments in booklet on reserve in library (10 points)** How to Ask the Right Questions by Patricia Blosser
3. **Content Area Readings** Select an article from a ***professional journal*** that corresponds with the relevant topic. Topics will be **constructivism, inquiry (teaching science), and authentic assessment**. Copy, read, highlight, and write reflective comments in the margins. Be prepared to

discuss the topic in class. Type a 1/2 to 1 page reflection that answers this question: What was the key idea presented in this article? In other words what did you learn about the topic from reading this article? **(45 points-15 points each)** Follow the guidelines in this syllabus.

4. **Process Skills Quiz (31 points)**
5. **Illinois Learning Standards Assignment (10 points)**
6. **Science Demonstration Show (Group/Individual)** You will send a copy of the demonstrations that your group presents to the members of the class through WebCT **(50/28 points)**
7. **Group Demonstration Lesson iMovie (30 points)**
8. **Midterm (75 points)** The midterm will be taken online thorough WebCT.
9. **Two-Week Science Unit (165 points)** The unit will be a group project with some portions being completed by the whole group and some portions being completed by each group member.
10. **Science Notebook (25 points)** Organize your science binder to include a section for labs. (Follow the criteria in your packet.)
11. **Final (75 points)** The final will be taken online thorough WebCT.

Refer to course calendar for due dates and assignments.

All assignments must be turned in on time. All assignments must be completed in an *exemplary* fashion in order to receive an "A". Assignments and scoring rubrics will be discussed in class when first assigned. After this initial discussion the instructor will be glad to discuss assignments or answer questions during office hours.

Grading system for Content Area Readings:
15 points: **Essential** ideas for understanding the topic are highlighted throughout the whole chapter, booklet, or article-including the sample lesson or any appendices, the comments in the margins show that you were **thinking** about the ideas that were presented and not just repeating the idea, and your name is on the article. Written response is well written and reflects the key idea learned from reading this article.
14 points: Important ideas are highlighted throughout entire chapter, booklet, or article, but comments are not truly reflective-they just restate the ideas presented, and your name is on the article. Written response reflects key idea presented in the article.
13 points: Few ideas are highlighted throughout the whole chapter, booklet or article, and there are few comments written in the margins. Written response is a summary of the article.
12 points: Few ideas are highlighted throughout the chapter, booklet, or article and there are no comments written in the margins. Written response is too general.

Bibliography

Adams, D, &Hamm, M. (1998). *Collaborative inquiry in science, math, and technology*. Portsmouth, NH: Heinemann.

Baker, D., & Piburn, M. (1997). *Constructing science in middle and secondary classrooms*. Boston: Allyn & Bacon

Beisenherz, P., & Dantonio, M. (1996). *Using the learning cycle to teach physical science: A hands-on approach for the middle grades*. Portsmouth, NH: Heinemann.

Blosser, P. (1991). *How to ask the right questions*. Washington, DC: National Science Teachers Association.

Brooks, J. G., & Brooks, M. (1993). *The case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.

Campbell, B., & Fulton, L. (2003). *Science notebooks: Writing about inquiry*. Portsmouth, NH: Heinemann.

Carin, S., & Sund, R. (1989). *Teaching modern science, (5th ed.)*. Columbus, OH: Merrill Publishing Company.