Science Education 490
Laboratory/Field Experience in Elementary Science

Preparing thoughtful, knowledgeable, and effective educators for a diverse society.

When:	Fall 2009	
Where:	Mon/Wed:	1-3 SL230 or Happy Valley Elementary
	Fri	1-2 SL230

Credit Hours:	3 credits
Prerequisite:	SCED 480
Instructor:	Susan DeBari 650-3588
Office Hours:	W3-4, Th 3-4 in ES237 or LRC cubicle (or by ambush)
Email:	**debari@geol.wwu.edu**

Course information is available to you through Blackboard services (My Western)

Course Description

A field based experience in which WWU students teach science within their internship year and includes a weekly seminar. The focus of this course is planning, teaching and assessing elementary science lessons with an authentic audience. We will be at a local school for our lesson sequences. Teams of 2-3 students will plan and carry out appropriate lessons for the assigned grade levels.

Course Objectives

A. Effective Science Teaching

- Curriculum: Students will adapt a research-based curriculum (FOSS or STC) to create a coherent science unit. It is strongly recommended that the students do not create any new curriculum for this practicum. Lesson plans will be explicitly related to the *Washington State Essential Academic Learning Requirements in Science* (EALRS) and to the *K-10 Grade Level Expectations (GLEs)*. Some WWU class time will be provided for planning lessons; however time outside of class will be necessary in order to adequately prepare.

- Instruction: Student will demonstrate knowledge of a variety of methods found to be effective in the teaching of science. These will emphasize *hands-on/minds-on* and *inquiry-based* teaching methods as introduced in SCED 390/480 and science teaching standards derived from How People Learn and NCOSP's Science Classroom Observation Guide.

- Assessment: Students will develop an authentic classroom assessment strategy appropriate to the science topic and grade level. This will include identifying the key learning targets and the "big idea" for their unit, delivering a pre-assessment, tracking progress with formative assessments, and creating a post-assessment.

B. Professional Growth
Students are expected to progress in their understanding of and performance as excellent science teachers. The cooperating teacher will assist each student in evaluating progress through regular informal feedback sessions. Regular attendance and participation in weekly seminars will also contribute towards this reflective goal.

Assignments and Course Evaluation

In order to pass this course, **ALL** of the following assignments must be completed and receive a **score of 3 (or 4)**. See grading rubric at the end of this list.

1. **Attendance & Participation**: (4 points) Regular attendance and participation in the weekly seminars is essential part of demonstrating responsibility and building a reflective practice. For additional expectations, see the guidelines available under the *Assignments* link on Blackboard.
2. **Reflection Paper:** (2 points) Each student will complete a paper reflecting on their initial visit to the cooperating classroom as it relates to the science teaching standards. For due date and additional expectations, see the guidelines available under the *Assignments* link on Blackboard.
3. **Lesson Planning and Reflection**: (6 points: average 3 best) Each teaching group will develop a teaching schedule for their unit in the first week of class. Each student will then prepare individual lesson plans to be turned in prior to teaching for review by your WWU instructor and your cooperating teacher. Once the lesson is taught, you will need to turn in a revised version of the lesson plan with your comments on things that you might modify if you were to teach the lesson again. For due dates and additional expectations, see the guidelines available under the *Assignments* link on Blackboard.
4. **Lesson Study Cycles**: (4 points: average of 2 best) Each teaching group will conduct 3 lesson study cycles during the practicum related to the 3 key findings in How People Learn. The purpose is to establish ideas for understanding and improving teaching performance. Each of the cycles will culminate with an individual assignment. For due dates and additional expectations, see the guidelines available under the *Assignments* link on Blackboard.
5. **Evidence of Student Learning Project**: (4 points) Each teaching group will be responsible for planning an entire assessment cycle including identifying the key learning targets, and delivering pre-assessments, formative assessments, and post-assessments. Each group will give a presentation summarizing the student learning in their classroom. Samples of student work are required to be used as data to support the analysis. The group will be graded on how well it selects and interprets the data (student work). For due date and additional expectations, see the guidelines available under the *Assignments* link on Blackboard.

Grading rubric for course assignments:

4 = **Superior**: Work in this category meets all stated expectations.
3 = **Proficient**: Work mostly meets all expectations but may be improved by responding to the written comments of the instructor. Resubmission of the work is not necessary.
2 = **Needs Revision**: This is work that is worth modifying but requires some revision and guidance from the instructor. Work may be resubmitted and will be rescored.
1 = **Needs a Fresh Start**: Work in this category is the result of a misunderstanding or might be work that is developmentally inappropriate. This work needs to be redone after a conversation with the instructor. Work may be resubmitted and will be re-scored.

Grading rubric for final grade:

1. Attendance & Participation	4 points
2. Reflection Paper	4 points
3. Lesson Planning (average of 3 best)	4 points
4. Lesson Study Cycle Projects (average of 2 best)	4 points
5. Evidence of Student Learning Project	4 points
Total	20 points

The grading scale follows with % calculated: (student's total points/20 points)

A 94-100%	A- 90-93%	B+ 87-89%	B 84-86%	B- 80-83%
C+ 77-79%	C 74-76%	C- 70-73%	D+ 67-69%	D 64-66%
D- 60-63%	F <60%			

Expectations

Please keep in mind that we are professionals. This should be evident in our behavior and appearance. We are guests in the elementary school, but are also going to become integral members of the teaching team. Do your best to work together as a team of respectful adults. For some of you, this experience may lead to a student teaching placement. This is a real chance for you to shine! Also it is recommended that you elicit feedback whenever possible from your classroom teachers. If they perceive you as a sincere educator they are more likely to work with you to improve your professional skills.

Strategic Rules

1. Because of the structure of this class, ***attendance is not only recommended, it is effectively mandatory.*** Please contact ***both*** your instructor and your teammates if you are unable to attend. ***If you are ill, your partner is still responsible for teaching your lesson***.
2. The professor reserves the right to ask for a second copy of anything you have handed in.
3. ***As a general rule, all writing assignments must be typed.*** I will inform you of any exceptions.
4. ***You are part of an institution with an Honor Policy.*** In all written work, you **must** use footnotes (or endnotes if you prefer) to acknowledge the ideas of others as reflected by quotations or paraphrasing. In short, if you use some else's ideas and do not give them appropriate credit then you are stealing and will be subject to appropriate consequences. Any dishonesty detected will lead to immediate failure of the course, *at a minimum.*

Academic Dishonesty Policy

Western Washington University students are responsible for reading, understanding, and following the policy and procedures regarding academic dishonesty as set forth in the *WWU Academic Dishonesty Policy and Procedure* (see Appendix D of the University Bulletin).

Reasonable Accommodation Policy

It is the policy of Western Washington University to provide reasonable accommodation to the known physical, sensory, or mental limitations of qualified individuals except where such accommodation would impose undue hardship on the institution. To request accommodation, students must contact WWU disability Resources for Students at 360-650-3844 or www.wwu.edu/depts/drs/

References:

How People Learn: Brain, Mind, Experience and School
National Academy Press (2000)
Benchmarks for Science Literacy (AAAS Project 2061), Oxford (1993) [Benchmarks]
http://www.project2061.org/tools/benchol/bolintro.htm
Inquiry and the National Science Education Standards: A Guide for Teaching and Learning, National Academy Press (2000) [INSES] http://books.nap.edu/html/inquiry_addendum
K-10 Grade Level Expectations: A New Level of Specificity, [GLEs, Science]
http://www.k12.wa.us/curriculumInstruct/science/GLEs.aspx
Essential Academic Learning Requirements for Washington [EALRs, Science]
http://www.k12.wa.us/curriculumInstruct/science/ealrs.aspx
National Science Education Standards, National Academy Press (1996) [NSES]
http://www.nap.edu/readingroom/books/nses/
Science for All Americans (AAAS Project 2061), Oxford (1990) [SFAA]
http://www.project2061.org/tools/sfaaol/sfaatoc.htm