Sec 490: Laboratory/Field Experience in Elementary Science (3 credits)
CRN #12528; MW 1-2:50, SL240 or Birchwood Elementary; Friday 1:00-1:50, SL240

Don Burgess, Ph.D., MH 402D, Ph: 650-2482; Don.Burgess@wwu.edu; Office Hours: by appointment

Course Description
SCED490 is a field-based experience in which WWU students teach science in an elementary classroom. The focus of this course is planning, teaching and assessing elementary science lessons with an authentic audience.

Course Objectives
A. Effective Science Teaching
   ● Curriculum*: Pre-service teachers will use documents such as standards & curriculum to organize and teach a unit of study around a big idea. They will:
     A. Identify big idea/concept
     B. Develop a storyline/learning progression of sub-concepts that will lead to big idea
     C. Help students connect the sub-concepts to building the bigger idea
     *It is strongly recommended that students do not create any new curriculum for this practicum. While some WWU class time will be provided for planning lessons, time outside of class will be necessary in order to adequately prepare.

   ● Instruction: Pre-service teachers will design and teach effective science lessons that:
     A. State clear learning targets of lesson (for Nature of Science and for content)
     B. Elicit initial ideas
     C. Communicate learning target
     D. Engage students with phenomena/data
     E. Use evidence to create claims and critique claims of others
     F. Lead students to make sense of the lesson
     G. Apply science concepts in a new context

   ● Instruction: Pre-service teachers will differentiate instruction for individual learners by:
     A. Identifying academic language, and teach appropriate academic language
     B. Making accommodations for students who lack grade level literacy skills

   ● Assessment: Pre-service teachers will develop and administer an assessment plan for the unit and lessons incorporating pre-assessment, formative assessment and summative assessment.

B. Professional Growth
   ● Pre-service teachers will reflect on their experience and growth over the course of the quarter. Students are expected to progress in their understanding of, and performance as excellent science teachers. The cooperating teacher and instructor 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 (Shown with weighting in parentheses)

1. **Reflection Papers: (20%)** Each pre-service teacher will complete a reflection paper based on his or her initial visit to the cooperating classroom as it relates to the *Observation Guide*. At the end of the quarter, each student will complete a paper reflecting on his/her personal growth as a teacher of science. See details posted on Canvas.

2. **Learning Progression: (15%)** Each group will develop a Learning Progression for their science kit, which will serve as an outline for their instruction. Required components of the Learning Progression are: a Big Idea Statement, a logical sequence for lessons that build up to that Big Idea, and Learning Targets for each lesson they plan to teach.

3. **Lesson Planning and Reflection: (40%)** Each group will develop a teaching schedule for their unit in the first week of class. With support from their helper-teachers, a lead teacher will prepare individual lesson plans to be submitted prior to teaching for review by the WWU instructor and the cooperating teacher. Once the lesson is taught, the lead teacher will turn in a final version of the lesson plan with a reflection based on the experience and student assessments. The lead teacher will prepare two-lessons in a row, in case a lesson requires more than one day to complete. See lesson plan guidelines posted on Canvas for details.

4. **Evidence of Student Learning Project: (15%, group grade)** 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 evidence to support the analysis. The group will be graded on how well it selects and interprets the data (student work). See assignment guidelines posted on Canvas.

5. **Teaching Effectiveness, Participation, & Effort: (10%)** Each student will demonstrate growth in the ability to promote science learning in the classroom. This includes demonstration of strategies outlined in the *Observation Guide*. Feedback on classroom teaching will be given by the instructor and cooperating teacher throughout the quarter. Each student is responsible for supporting their group members in lesson planning, delivery and assessment, as well as in preparation and delivery of the Evidence of Student Learning Project. Students are expected to take into consideration feedback on lesson plans and teaching strategies, and communicate professionally with the instructor and cooperating teachers. There will also be opportunities to participate and reflect in individual reflections and whole group discussions as we discuss relevant topics and share our experiences in the classroom.

Grades will be calculated according to the following scale:

- 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%
Policies and expectations

Attendance: Failing to attend class, whether at WWU or the participating school, does a disservice to you, your classmates and the elementary students. An excused absence must have a valid reason and the instructor must be contacted prior to class. Valid reasons include:

- If you are ill and don’t feel well enough to participate in class and/or are contagious,
- A planned trip away from campus that is associated with a school organization (e.g., you are a WWU soccer player traveling to a game in Ellensburg), or
- A family emergency (a letter from the Office of Student Life documenting that the student’s absence from the university is excused will need to be provided after the fact.)

Reasons that are not valid include:

- A family vacation for which your plane ticket was already purchased,
- A dentist appointment,
- Going to the office hours of the instructor for one of your other classes, etc.

In general: you must contact your instructor ahead of time, and you should not assume that an absence can be counted as excused. Each unexcused absence will drop your course grade by 3%. If a student has more than three absences, excused or unexcused, he or she will not be able to pass the course.

Professionalism: Please keep in mind that you are a professional. This should be evident in your behavior and appearance. You are a guest in an elementary school, but are also an integral member of the teaching team. It is your responsibility to communicate with the cooperating teacher about lesson plans in a timely fashion. 5% will be subtracted from a student’s final grade for each instance of unprofessional conduct, including lack of timely communication. It is also recommended that you elicit feedback whenever possible from your cooperating teacher. If they perceive you as a sincere educator, they are more likely to work with you to improve your professional skills.

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:

http://www.nap.edu/openbook.php?isbn=0309070368

Benchmarks for Science Literacy (AAAS Project 2061), Oxford (1993) [Benchmarks]
http://www.project2061.org/tools/benchol/bolintro.htm
http://www.nap.edu/openbook.php?record_id=9596

Next Generation Science Standards (NGSS) http://www.nextgenscience.org/next-generation-science-standards

Science Notebooks http://www.sciencenotebooks.org/notebooks/entries.cfm