

**Edu 346 /546: CALE in Secondary Science and Math
Fall Semester 2009; Curtis Hall 112**

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Required Materials:

- Dynamics of Effective Secondary Teaching 6th ed.- (2008) W. Wilen, J. Hutchinson, & M. Ishler
- Copy of PA State Science & Math Standards
- Internet access for online discussions
- Notebook

Course Description:

This course is designed to help students understand the three components of curricular development: objectives, instructional approaches, and evaluation, as they relate to teaching and learning at the secondary level. The activities of the course will prepare pre-service teachers to utilize the necessary skills and pedagogy to help their students develop the scientific and mathematical knowledge to be successful in a 21st Century classroom. The course includes an overview of the PA State Math & Science Standards, the characteristics of teaching and learning in the 21st Century, and a range of developmental activities and methodology.

Course Objectives: Students will...

- examine the PDE math and science standards (grades 8 & 11).
- identify the critical components for creating a successful learning environment.
- identify the 4 skill sets for teaching and learning in the 21st Century.
- become familiar with the current pedagogy and methodology associated with the best practices
- interact with classmates and instructor to discuss challenges of teaching secondary science and math
- develop strategies and resources to assist student learners.

The student will exhibit learning by:

- participating in in-class and online discussions and personal reflections about their learning process.
- developing hands-on and developmentally appropriate lessons with PDE standards.
- modifying lesson plans and instructional strategies to provide differentiated instruction.
- preparing and presenting a hands-on developmentally appropriate lesson to peers.
- integrating appropriate pedagogy and methodology into lesson plans.
- developing a personal belief statement regarding the pedagogy of teaching secondary science or math.

Honor Code and Academic Standards of Integrity:

Cedar Crest College students should uphold community standards for academic and social behavior in order to preserve a learning environment dedicated to personal and academic excellence. Upholding community standards is a matter of personal integrity and honor. Individuals who accept the honor of membership in the Cedar Crest College community pledge to accept responsibility for their actions in all academic and social situations and the effect their actions may have on other members of the College community.

All Cedar Crest students shall:

- Submit only work that is their own.
- Adhere to the rules of acknowledging outside sources, as defined by the instructor, never plagiarizing or misrepresenting intellectual property.
- Follow the instructions of the professor in any academic situation or environment, preparation of papers, and the proper and respectful use and sharing of College facilities and resources, including library and computing resources.
- Abide by the Cedar Crest Computer Use Policy.
- Students are prohibited from submitting the same work for more than one course without instructor approval.

Appropriate classroom behavior is implicit in the Cedar Crest College Honor Code. Such behavior is defined and guided by complete protection for the rights of all students and faculty to a courteous, respectful classroom environment. That environment is free from distractions such as late arrivals, early departures, inappropriate conversations, and any other behaviors that might disrupt instruction and/or compromise students' access to their Cedar Crest College education.

Attendance:

Students are required to attend class, as the course will rely heavily on discussion and group activities that cannot be replicated individually. Students are allowed one absence during the semester, but are required to make up any work missed due to that absence. Except in the case of an extenuating circumstance approved by the instructor, students are required to submit all assignments on time, regardless of whether the student is present in class.

Assignments and Grading:

Assignments are listed on the syllabus; these assignments may be amended by the instructor with at least a week's prior notice to the students. All assignments are due on the date listed on the syllabus. Assignments may be submitted either electronically or on hard copy. Any assignment that is not submitted by the due date will receive a grade of zero unless the student received prior approval for an extension from the instructor.

In this course, there will be no tests and quizzes. Assignments are designed to enhance students' abilities to reflect on the material presented and apply it to their own experiences. The types of assignments and weighting of them is as follows:

Pedagogy Belief Statement: 100 points

Our actions as teachers are driven by our belief system as well as an understanding of pedagogy. Each student will develop a belief statement regarding her philosophy on the teaching and learning process. This statement should include the student’s beliefs regarding the role of the teacher, the curriculum, instructional strategies, discipline, and the student. In other words it should answer the question, “How do I plan to be an effective teacher?” The belief statement will be submitted on the second class and revised on our final meeting date.

Writing Objectives: 100 points

Each student will select a unit topic from her subject area with a daily lesson for that topic. The student will then identify the objectives for that unit as well as the objectives for the daily lesson. Behind each objective indicate the PDE standard, the level of Bloom’s taxonomy, and the type of intelligence addressed.

Lesson Plan Differentiation: 100 points (see table 5.2 on page 129)

The student will create a daily lesson plan using CCC format. The lesson should be designed for a grade and subject area of your choice. Using table 5.2 on page 129 of the Wilen book, the student will modify this lesson to be used with different instructional strategies. The student should vary the methods to include inquiry, web-based instruction, computer technologies, and hands-on activities. Additionally, the lessons should show evidence of a variety of student groupings and assessments.

Mini-Lesson Presentation: 100 points

Each student will present a mini lesson to the class. The lesson should be planned for a 15 minute mini lesson and should reflect appropriate pedagogy and methodology for the audience and objectives. You will be scored on a rubric by the professor, and your peers will provide feedback using the analysis forms in chapters 8 & 9.

Class participation: 70 points

Because the course is highly dependent on class discussion and participation in activities, students will receive five points for class participation each week. Class participation points are earned by attending class and actively engaging in discussion and group activities.

Online participation: 80 points

Students will be asked to participate in online discussions and reflections throughout the course. This will take place either through eCompanion or Wikispaces.com. Entries need to be submitted by midnight the Tuesday before the class.

Final grades are determined by totaling the number of points earned by the student and computing an average based on the total possible number of points (550). Letter grades are awarded as follows:

A	94 – 100%	B+	87 – 89%	C+	77 – 79%	D+	67 – 69%	F	59% or lower
A-	90 – 93%	B	84 – 86%	C	74 – 76%	D	63 – 66%		
		B-	80 – 83%	C-	70 – 73%	D-	60 – 62%		

Edu. 346 / 546 Course Schedule: Fall 2009

Date	Topic of Lesson	Reading Assignment: HW to be read for next class!	Written Assignments: HW due the next class unless indicated otherwise
8/26/09	Welcome to CALE: an overview	Ch. 1 & 2	Initial Belief Statement
9/2/09	Understanding Pedagogy & Creating a Safe Learning Environment	Ch. 3	Online discussion entry: #1 discipline
9/9/09	Teaching & Learning in the 21 st Century: CFF	Ch. 4 & 5	Online discussion entry: #2 21 st Century Skills
9/16/09	Planning for Teaching: Constructivist Classrooms & Objectives	Ch. 6- 8	Unit & Lesson Objectives
9/23/09	Preparing for Teaching: Instructional Approaches & Methodology	Ch 10	Differentiated Lesson (table 5.2 page 129) * due 10/7/09!
9/30/09	Evaluating Teaching & Learning: The Roles of Assessment		
10/7/09	Teaching Tools: 21 st Century Classroom	Meet @ Parkland High School Library	Online discussion entry: #3 tools: strengths & weaknesses
10/14/09	No Class: teach conflict (reschedule?)		Resource Notebook: 5 existing "best practice" lessons * due 11/18/09
10/21/09	Literacy & Research		
10/28/09	Computer-based Instruction		
11/4/09	Wet-labs & Hands-on Activities		
11/11/09	Mini-Lesson Presentation	Use Science & Math	Students Edu. 546
11/18/09	Mini-Lesson Presentations	Resource Books	Students Edu. 346
11/25/09	No Class: Happy Thanksgiving!		Online discussion entry: #4 lesson reflection
12/2/09	Pedagogy Philosophy Revisions / Resource Sharing		