

EDUC 100c Cal Teach 2 Science Seminar

EDUC 100c – Spring 2013
CAL TEACH 2 SCIENCE SEMINAR
Wednesdays 5:00 - 6:45 p.m.
JBE 160

Course Instructor: Thomas Medeiros
Telephone: 831-227-1034 (cell)
E-Mail: tmedeiro@ucsc.edu
Office Hours: Wednesdays (before / after class) JBE 153C
Web page: <http://calteach.ucsc.edu/aboutus/Medeiros.html>

Course Description:

This seminar is a continuation of Cal Teach 1, and is open to students enrolled in the Cal Teach program. The goals of Cal Teach 2 are to introduce students to lesson design, unit planning, and instructional methods, with particular attention paid to developing lessons based on Next Generation Science Standards and using inquiry-based lessons. Students will investigate and analyze a variety of lessons and, ultimately, design a lesson to be taught in the student's host classroom.

Seminar discussions will focus on lesson design, the components of a comprehensive unit of study, instructional models, and classroom instructional design? Discussions will bring in various perspectives, and be viewed through the experiences each student gains from her / his Cal Teach 2 placement.

Grades will be based on participation in class discussions and activities, written assignments, and final project presentation. Late papers will receive a lowered grade unless prior arrangements have been made. Weekly attendance is expected; unexcused absences will result in a lowered overall class grade.

Course requirements

1. **Attendance** at all seminars, complete all assignments, and participate in discussions. (*Please contact me ahead of time if you must miss a seminar.*)
2. **Observation Narrative:** Maintain a journal based on experiences in the host classroom. Describe the class level, student demographics, lesson and standard taught, unique situations, and instructional strategies and methods used. Include a personal reflection of the lesson (*i.e: What did you learn from the lesson observed? What changes would you have made to the lesson structure and delivery? Why? What questions did you have about the lesson structure and delivery? Other observations and considerations.*). Make connections, as possible, between what is observed in the classroom and what is discussed in seminar. These will be due every two weeks, along with the Field Experience Log, beginning Week 3. E-mail the paper to tmedeiro@ucsc.edu .

3. **Field Experiences Log:** Maintain a log of your weekly activity at your field placement. Examples of possible activities include: working with students individually or in small groups, leading or designing a review activity, introducing a lab, grading an assignment. Highlight activities that indicate how you are working up to teaching the whole class lesson. These will be due every two weeks, along with the Observation Narrative, beginning Week 3. E-mail the paper to tmedeiro@ucsc.edu .
4. **Lesson Design and Instructional Experience Project:** You will present a lesson in your host classroom. You and your host teacher will collaborate on the content and scheduling. Include in this project a general unit scope and sequence, and the specific lesson plan (*on an approved template*) for the lesson that you will be presenting. Indicate the Current California State Standard, and the Next Generation Science Standard that might be addressed, and one or more assessment tools that you will use after your lesson to determine how successfully students mastered the instructional material. Your grade on this project will be determined by your adherence to the project-grading rubric. (*Included along with the sample lesson plan templates.*)

Course Grade:

- 20% Participation in Seminar Activities and Discussion
- 20% Observation Narratives and Field Experience Logs
- 20% Seminar Lesson Analysis Assignments
- 40% Lesson Design and Instructional Experience Project

Readings

1. Cawley, J., et al. (2002) "Including students with disabilities into the general education science classroom" *Exceptional Children* Vol. 68, No. 4 pp. 423-435.
2. Griffiths, P. (2000) "How a teacher can influence a whole life" *The New York Times* 9/3/00
3. Lemke, J. (1990). Two minutes in one science classroom. *Talking Science: Language, Learning, and Values*. Norwood, NJ: Ablex Publishing Corporation.
4. Marzano, R. (2003). Rules and procedures. *Classroom Management that Works*. Association for Supervision and Curriculum Development, Alexandria, VA
5. Marzano, R. (2004). Direct vocabulary instruction: An idea whose time has come. *Closing the Achievement Gap*. Belinda Williams, (ed.). Association for Supervision and Curriculum Development, Alexandria, VA

6. Meier, D. (1992). Why tests don't test what we think they do. *In Schools We Trust*, Beacon Press, Boston
7. Perfors, A. (2008) "Another classroom demo: The scientific method." *California Journal of Science Education*, Vol. VIII, Issue 2 (Spring, 2008)

Assignments

The following assignments are required to complete this course:

1. Four short papers, **Observation Narratives**, 2-3 pages in length, based on your observations in your host classroom.
2. **Field Experiences Log** of every day you are in your host classroom.
3. **Lesson Design and Instructional Experience Project**: lesson plan, with supporting unit scope and sequence, that you have designed and demonstrated for the seminar, and will teach in your host classroom. The final project will contain an evaluation of your lesson after you have taught it. A basic lesson plan template is attached to this syllabus, along with a copy of the grading rubric used to evaluate your work.

Schedule of class meetings

Week 1 **Course Overview:** Review of Syllabus
 April 3: Seminar Activity: *Observations and Questioning Activity*

Readings: MUSIC; How a Teacher Can Influence A Whole Life –
The New York Times

Week 2 **California State Science Standards**
 April 10: **Next Generation Science Standards**
 Discussion of the Readings
 Seminar Activity: *Fitting the Standard to an Activity*

Readings: California State Science Framework and
Content Standards, K -12 (Skim)
Next Generation Science Standards, Draft (Skim)
How to Read the Next Generation Science Standards

Week 3 **Pacing Guides and Science Instructions**
April 17: *Discussion of the Readings*
Seminar Activity: *Timing and the Standards; Picking and Choosing*

Readings: Chiappetta - Planning a Science Unit Ch 13-1
Krajcik_Merritt- Engaging Students in Scientific Practice
Principles of Instruction Research-Based Strategies That All Teachers Should Know, by Barak Rosenshine;

NB: **First observation paper due**

Week 4 **Unit and Lesson Introductions**
April 24: *Discussion of the Readings*
Seminar Activity: *Exploring Lesson Openers*

Readings: Another Classroom Demonstration
Two minutes in One Science Classroom
Marzano, Rules and Procedures

Week 5 **Vocabulary Development**
May 1: *Discussion of the Readings*
Seminar Activity: *Vocabulary Activities Linked to Labs*

Readings: Marzano, Vocabulary

NB: **Second observation paper due**

Week 6 **Inquiry Based "Lab" Activities**
May 8: *Discussion of the Readings*
Seminar Activity: *Modeling Labs*

Reading: Open Lab
Teaching Tips to Promote Active Learning

Week 7 **Scaffolding the Lesson**
May 15: *Discussion of the Readings*
Seminar Activity: *Creating Support for the Range of Learner*

Readings: Cawley Including Students w/ Disabilities
Mastropieri, p130 - Differentiation in Science Class
McDonnough_Cho Making the Connection

NB: **Third observation paper due**

Week 8 *Assessing Learning*
May 22: *Discussion of the Readings*
Seminar Activity: *Using Formative and Summative Assessments*

Readings: Exploratorium – Assessment
Meier Why Test Don't Test

Week 9 Lesson Design and Instructional Experience Project Presentations
May 29: *Discussion of the Readings*
Seminar Activity: *Presentations*

NB: **Fourth observation paper due**

Week 10 Lesson Design and Instructional Experience Project Presentations
June 5 Seminar Activity: *Presentations*

NB: **All lesson plan materials and classroom documentation should be completed by this date. Please e-mail any remaining work to me, or hand-deliver printed copies to the Cal Teach office in JBE 157B, clearly labeled with my name.**

LESSON PLAN TEMPLATE 1

| | | | |
|--|--|---|--|
| Name: | | School: | |
| Grade Level: | | Date: | |
| Subject: | | | |
| Unit Theme/Topic: | | | |
| Lesson Title/Topic: | | | |
| Expected Student Learning Outcomes: | | What will students know and be able to do as a result of this lesson? (Be Specific) | |

| | | |
|--|--|------------------------|
| CA Academic Standards Addressed: | Which <i>California Academic Content and Performance Standards</i> will your lesson address? | |
| Materials Used: | What instructional materials and equipment/supplies will you use in this lesson? | |
| Lesson Outline: (Opening/Do Now/Anticipatory Set; Major Activities; Transitions, Review; Closure) | | |
| | | |
| <i>Time</i> | <i>Teacher Actions</i> | <i>Student Actions</i> |
| | | |
| Monitoring & Assessment: | How will you monitor student learning during the lesson? How will you assess student work? | |
| Modifications to Address Individual Student Learning Needs | How will you modify your instruction as needed to ensure that all students meet learning outcomes? | |
| Follow-up Activities/Homework | How will you follow up this lesson with homework or other extension activities? | |

Unit Plan/Lesson Plan Templates

LESSON PLAN TEMPLATE 2

| | |
|--------------------|--------------------------------------|
| Unit Title: | Course Title and Grade Level: |
|--------------------|--------------------------------------|

| |
|-----------------------------|
| Content Standard(s): |
|-----------------------------|

| |
|--|
| Prior Knowledge Needed for This Unit: |
|--|

| |
|-----------------------------------|
| Enduring Understanding(s): |
|-----------------------------------|

| |
|-------------------------------|
| Essential Question(s): |
|-------------------------------|

| |
|---|
| What critical thinking skills will students need to be successful? |
|---|

| |
|--|
| What oral and written forms of language will help students participate successfully in this sequence? |
|--|

| |
|---|
| What vocabulary or content terms will students need to know and use to be engage in this unit? |
|---|

| |
|--|
| Lesson 1 Title: |
| Lesson Plan and Approximate Time Required for Each Step: |
| Materials Needed: |
| What evidence will show that students understand the lesson's goals? Formative (i.e., during instruction): Summative (i.e., after instruction): |
| What criteria will you use to assess and evaluate understanding and skills? |
| Equity: what scaffolds and other learning elements have you included to help all students meet high expectations in these lessons? |

Add more lessons as necessary.

Grading Rubric: Lesson Design and Instructional Experience Project
EDUC 100C Cal Teach 2 (T. Medeiros)
Spring, 2013

Under the course requirements for the Cal Teach 2 class, you will find the following description of the lesson-plan component:

***Lesson Design and Instructional Experience Project:** You will present a lesson in your host classroom. You and your host teacher will collaborate on the content and scheduling. Include in this project a general unit scope and sequence, and the specific lesson plan (on an approved template) for the lesson that you will be presenting. Indicate the Current California State Standard, and the Next Generation Science Standard that might be addressed, and one or more assessment tools that you will use after your lesson to determine how successfully students mastered the instructional material. Your grade on this project will be determined by your adherence to the project-grading rubric. (Included along with the sample lesson plan templates.)*

Your lesson plan project is worth 40% of your quarter grade.

Please use one of the two lesson plan templates attached. *All lesson plans should have these elements in common: engagement, exploration, explanation, extension, and evaluation.*

Grading criteria

Standards and Objectives, Resources (1-10 points)

1. Identify the key standard as written from *the California Content Standards*, and / or *The Next Generation Science Standards, DRAFT 2013*.
2. What skills and / or content should students learn from this lesson?
3. How does this lesson fit into a larger content unit?
4. List the resources you will need for your lesson, such as textbooks, other readings, teacher-created materials, videos, lab equipment, manipulatives, computers, art supplies, etc.

Learning Activities, Assessment, and Resources (1-20 points)

1. Provide a detailed list of teacher and student activities that make up the lesson. Include details such as your prepared questions to promote discussion, special equipment, and extended tasks for early finishers.
2. How will you engage the students at the start of the lesson? (Examples: review prior knowledge, demonstrate a real-world example, ask an open-ended question to elicit discussion, etc.)
3. Describe how you will monitor student progress at key points of instruction to determine whether students are achieving your lesson objectives.
4. Describe the modifications you will employ to address individual student learning needs.

Reflection (1-20 points)

1. What parts of the lesson were effective in moving students toward your objectives?
2. Why do you think they were effective? What assessment tools did you use? Examples might include: direct questioning, review activities, post-lesson quiz, summation by students, etc.
3. What parts of the lesson were not effective – or were less effective – in moving students toward your objectives?
4. Why do you think they were less effective?
5. How will you use this reflection to inform your plan for the next lesson, or the next time you teach this particular lesson?