

**University of California, Irvine
Department of Physical Sciences**

PS 5/ BS 14

California Teach 1 (CaT1): Elementary School Science and Math Classroom Practices

Spring 2007

Fridays 3-6 PM; 4/13, 4/27, 5/4, 5/11, 5/18 & 6/1

Room HICF 100L

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Office Hours: After class or by appointment

Units: 2 units

Catalog Description:

Freshman seminar for students interested in becoming middle or high school teachers of math or science. Meets 5 times for students to gain an understanding of effective, research-based teaching strategies. Includes an opportunity to experience teaching in a K-5 classroom. Pass/Not Pass or letter grade.

Goals and Objectives:

PS 5 introduces students to the teaching and learning of science and mathematics in elementary school classrooms and it provides students with opportunities to determine if they might be interested in pursuing a career in teaching. Pairs of students will be placed in an elementary school in a local school district and will observe and assist an elementary school mentor teacher teaching science and mathematics. Students will be expected to assist the teacher in both sciences and mathematics. The accompanying seminar course will introduce students to the theory and practice of designing and delivering excellent science and mathematics instruction at the elementary classroom level. Students will be introduced to inquiry based learning practices, national and California standards, reading and learning differences in children, and the cognitive ability of elementary students as it relates to the introduction of concepts, curricular planning, classroom management and learning assessment.

CaT1 - Course Objectives:

- Introduce the profession of teaching as a possible career path. Students will observe and engage in the professional nature of teaching, including working collaboratively with other teachers, identifying and sharing best practices, and being accountable for meeting professional standards.
- Understand how national and state standards in science and mathematics affect curricular design and how curricular design prepares students for subsequent learning.
- Critically observe both teaching and learning in science and mathematics, paying particular attention to the role of misconceptions and sense-making as students learn new information. Learn how to assess if students are learning the material.

- Recognize why a deep understanding of the science and math subject matter is essential for understanding how students learn, particularly in making sense of the rich variety of ways individuals may approach the same problem.
- Understand the difference between learner-centered and teacher-centered curricula and be able to distinguish between classroom approaches that are inquiry-based (hands-on) and those that are informational.
- Understand the diversity of learners in a classroom and evaluate teaching methods that address the variety of ways students learn and make sense of new information.
- Review and evaluate issues of teaching English language learners mathematics and science.
- Provide students the opportunities to develop inquiry-based curricular modules that they will co-present to students in the classroom. These modules should have stated educational objectives and include a means to assess whether the module met the learning objectives stated.
- Provide students with the opportunity to reflect on and discuss what they have observed.
- Introduce students to the concept that as classroom assistants or teachers, they are “role models” to students and that there are great responsibilities inherent in assuming this role. Students in this program will need to focus on how they dress, talk, respect themselves and their students, and how important these elements are in creating a respectful and inclusive classroom atmosphere where students learn most effectively. They will learn to assure that all students are adequately prepared in safety, security, and emergency procedures.
- Students will become familiar with the California Teach program, courses, teaching certification programs and requirements, financial support, and their work during the course will provide their first entry into their California Teach Portfolio that they will maintain as a requirement for teacher certification.

In addition, PS 5 provides multiple and systematic opportunities for candidates to practice competencies for CTCC Teaching Performance Expectations (TPEs):

- TPE 1: Specific pedagogical skills for subject matter instruction.
- TPE 2: Monitoring students learning during instruction.
- TPE 3: Interpretation and use of assessments.
- TPE 4: Making content accessible.
- TPE 5: Student engagement.
- TPE 6: Developmentally appropriate teaching practices.
- TPE 7: Teaching English Learners.
- TPE 8: Learning about students.
- TPE 9: Instructional planning.
- TPE 10: Instructional time.
- TPE 13: Professional Growth.

Required Text: None

Course Assignments:

- Teaching Reflection Paper **Due 4/27/07**
- Read “Improving Instruction by Listening to Children” and complete review **Due 5/11/07**
- Draft 5 E Lesson **Due 5/25/07**
- Final Lesson Plan **Due 6/8/07**
- Lesson Reflection **Due 6/8/07**
- Final Journal **Due 6/12/07**
- PCOP **Due 6/12/07**
- Completion of 20 hours of field work **Due 6/12/07** **Note: Hours must be logged into OIS to be counted. OIS training must be completed by May 4.**

Grading Policy:

This course may be taken for a letter grade or as pass/no pass.

Course Grading: Each assignment will be worth the points detailed below. Note: Each assignment will lose 1 point for each day it is late.

Teaching Reflection Paper- 10 points

Reading Review- 10 points

PCOP- 10 points

Lesson Plan- 25 points

Lesson Reflection- 20 points

Final Journal- 15 points

Attendance/ Participation- 50 points

20 hours of field work- 60 points

Your course grade will then be determined by the sum of your 8 scores on the following scale:

A: 180 points or higher

B: 160-179 points

C: 140-159 points

D: 120-139 points

F: 119 points or less or missing more than 1 class

Pass: 120 points or higher

No Pass: 119 points or less or missing more than 1 class

Attendance:

Your on-time attendance and participation in all of our class sessions is critical to both your success and the growth of all of your classmates. There really is no “making up” a missed class day. If you do have a medical or other emergency that forces you to miss a class, however, I will work with you individually on an appropriate assignment to substitute for the lost time. Students who miss all or significant parts of a 2nd class will need to repeat the course. Lateness will result in deductions from your score for participation.

Course Schedule:

Date	Topic	Assignment Due
4/6/07	No Class	
4/13/07	Orientation to course and fieldwork (R/T); Working with elementary students; Sound (T)	None
4/20/07	OIS training & Credentialing information @ CFEP	TB & Fingerprints!!!
4/27/07	TPE 1 Content Standards; State Testing; K-2 Math; 3-5 Science activity (K/T)	Submit: Teaching Reflection Paper
5/4/07	TPE's 6 and 8 Questioning; Interacting with elementary students; K-5 Math investigation;	None
5/11/07	TPE's 3, 6, and 9 Types of knowledge (K); Math or Science vertical team K-5 Science investigation (T)	Submit: Read "Improving Instruction by Listening to Children," complete review
5/18/07	TPE's 1, 2, 4, 5, 6, and 9 Writing a 5 E's Lesson Plan; K-5 Science (T)	None
5/25/07	No Class	Submit: Draft Lesson Plan
6/1/07	TPE's 4, 5, 7, and 10 Peer Classroom Observation Protocol; K-2 Science; 3-5 Math (T/K)	None
6/8/07	No Class	Submit: Final Lesson Plan & Lesson Reflection
6/12/07	Finals Week: No Class	Submit: Final Journal, PCOP & Hours Log