

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

**PS 105 -California Teach 2 (CaT2): Middle School Science and Math Classroom Practices  
Fall 2007**

**Fridays 3:30-6:20 PM: 10/5, 10/19, 11/2, 11/16, & 11/30  
Room HICF 100N**

**Instructors:** Karajean Hyde & Terry Shanahan  
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**Office Hours:** After class or by appointment

**Units:** 2 units

**Catalog Description:**

Sophomore/junior 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 6-8 classroom. Pass/No Pass or letter grade.

**Goals and Objectives:**

PS 105 introduces students to the teaching and learning of science and mathematics in middle school classrooms. Students will serve as a classroom assistant with an expertise in either science or mathematics, supervised in a local school by an effective middle school mentor teacher. In the seminar portion of this class, students will discuss learning in a middle school culture, cognitive development of students at this level, and the best means to teach appropriate science and mathematics concepts at this level. Working in pairs, they will develop two curricular modules and, at the discretion of the mentor teacher, present one of these to a middle school class and assess their effectiveness by measuring student learning.

**CaT2 - Course Objectives:**

- Recognize elements of middle school culture and how it affects teaching and learning in the classroom.
- Note how the middle school curricula in science and mathematics builds upon the concepts taught at the elementary level and how these concepts prepare students for high school science and mathematics.
- Develop a toolkit of classroom management strategies.
- Observe and discuss what middle school students' approaches to solving problems in math and science reveal about their understanding of the subject matter and make connections to their own approaches to learning science and math as undergraduates.
- Become familiar with national and state standards in science and mathematics at the middle school level and learn how to maximize the interrelatedness of curriculum, textbook adoption, standards, and assessments.
- Knowledge of state, national and international assessment testing and how this affects what is taught in classrooms.

- Develop and present a lesson using research-based pedagogies.
- Determine methods to most effectively reach a diversity of learners in a classroom.
- Discuss issues of classroom management and school rules and regulations that are the responsibility of the teacher to enforce.
- Develop their abilities to use technology to enhance teaching and learning and to excite students.
- Develop knowledge of special learners curricula and classroom approaches for students with disabilities and students who are English language learners.
- Formally, through course requirements, reflect in writing on their progress as teachers and as learners and on teaching and learning practices they are experiencing in their undergraduate classes.

In addition, PS105 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 11: Social Environment

TPE 13: Professional Growth.

**Required Text:** None

**Course Assignments:**

- Read “Social Class and the Hidden Curriculum of Work” and complete review **Due 10/19**
- Read “Motivating Students by Teaching for Understanding” and complete reflection **Due 11/2**
- Analysis of student work **Due 11/16**
- Lesson Plan- Draft **Due 11/21**
- PCOP **Due 11/30**
- Final Lesson Plan **Due 12/7**
- Lesson Reflection **Due 12/7**
- Final Journal **Due 12/11**
- Completion of 25 hours of field work **Due 12/11 Note: Hours must be logged into OIS to be counted. OIS training must be completed by Nov. 1.**

**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: Assignments will lose 1 point for each day they are late.

Reading Review- 10 points each  
Peer Classroom Observation Protocol (PCOP)- 10 points  
Lesson Plan- 20 points  
Analysis of Student work- 10 points  
Final Journal- 10 points  
Lesson Reflection- 20 points  
Attendance/ Participation- 50 points  
25 hours of field work- 60 points

Your course grade will then be determined by the sum of your 9 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 2<sup>nd</sup> class will need to repeat the course. Lateness will result in deductions from your score for participation. Participation points depend on active engagement in seminar discussions.

## Course Schedule:

<b>Date</b>	<b>Topic</b>	<b>Assignment Due</b>
<b>9/28/07</b>	<b>No Class</b>	<b>None</b>
<b>10/5/07</b>	<b>Orientation</b> <b>TPE's 1, 4, 5, 6</b> Content Standards; Textbooks; Teaching for Conceptual Understanding; Math games! (K)	<b>None</b>
<b>10/12/07</b>	<b>No Class</b>	<b>None</b>
<b>10/15/07</b>	<b>MANDATORY Orientation</b> <b>Meeting 4:30-7 PM. Note: Failure</b> <b>to attend this meeting without</b> <b>instructor written approval will</b> <b>result in you failing this course.</b>	
<b>10/19/07</b>	<b>TPE's 1, 2, 3, 6, 9, 10</b> Assessing Student Learning; Writing a 5 E's Lesson Plan; Math: Newton & Inertia (T)	<b>Submit:</b> Read Social Class and complete Reflection
<b>10/26/07</b>	<b>No Class</b>	<b>None</b>
<b>11/2/07</b>	<b>TPE's 3, 8, 13</b> Incorporating Student Error and Encouraging Student Discourse(T); Reaction Time (K)	<b>Submit:</b> Read Motivation article and complete reflection
<b>11/9/07</b>	<b>No Class</b>	<b>None</b>
<b>11/16/07</b>	<b>TPE's 6, 8, 10, 11</b> Middle School students & classroom management. (K) Math: Area; Science: Chemical Change K-2 (K/T)	<b>Submit:</b> Student Error Analysis
<b>11/23/07</b>	<b>Holiday: No Class</b>	<b>Due Wednesday Nov. 21:</b> Lesson Plan- Draft
<b>11/30/07</b>	<b>TPE's 4, 7, 8</b> Teaching Special Populations; Survey; Algebra Tiles; Science: Energy (T/K)	<b>Submit:</b> PCOP
<b>12/7/07</b>	<b>No Class</b>	<b>Submit:</b> Lesson Reflection & Final Lesson Plan
<b>12/11/07</b>	<b>Finals Week: No class meeting</b>	<b>Submit:</b> Final Journal & Hours Log

