

**California State University San Marcos  
SCHOOL OF EDUCATION**

**EDUC 494 – STEM Teaching and Learning, Theory and Practice**  
SPRING 2013 Academic Hall 204

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**Mission Statement of the School of Education, CSUSM**

The mission of the School of Education Community is to collaboratively transform public education by preparing thoughtful educators and advancing professional practices. We are committed to diversity, educational equity, and social justice, exemplified through reflective teaching, life-long learning, innovative research and on-going service. Our practices demonstrate a commitment to student-centered education, diversity, collaboration, professionalism, and shared governance. (*Adopted by COE [SoE] Governance Community, October, 1997*).

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**Course Description**

The course is designed for students serving as returning Learning Assistants (LAs) in undergraduate STEM courses. The course will help integrate educational theory, pedagogy, and practice. It will touch on theoretical issues such as conceptual development, conceptual change, collaborative learning, technology in education, and students' conceptions of various topics in mathematics and science. It will also focus on practical issues encountered in facilitating learning, managing the classroom, formative and summative assessment, curricula, and differentiating instruction in a collaborative environment. This course emphasizes a service-learning style, in which participants put into action the content of the partner EDUC 495 course, based upon the Learning Assistant field placement and interests.

***Student Learning Outcomes***

As a result of this course, students will be able to:

- Identify univocal vs. dialogic discourse in a STEM classroom
- Apply appropriate questioning strategies in their work as a Learning Assistant
- Understand the role of drawing out and listening to student thinking in the STEM classroom in order to teach content
- Utilize student misconceptions to design learning/teaching scenarios
- Manage group investigations into a topic/concept in their field of expertise
- Evaluate student activity to determine if it is one of "doing science," or "doing school"
- Identify the intellectual activity of STEM teaching, including the ongoing opportunities to do math or do science as a teacher

**Course Requirements**

***Prerequisites*** Accepted as a CSUSM or Palomar Learning Assistant.

***Required Texts*** Weekly course readings will be available online through Cougar Courses (CC).

***Key Assignments***

This course is a seminar, and its success will depend on the active participation of all members in helping to shape its ultimate content and relevance. Our primary activity will be outreach to CSUSM and K-12 Mathematics and Science settings, as members of the CSUSM STEM Ambassadors program. Requirements include the following:

1. *Class Discussion/Participation (40%)* – Course members are expected to contribute to the design of and participate fully in outreach activities. The purpose of the planning and design discussions is to help us as individuals, and as a group, develop meaningful interpretations of the ideas conveyed by the Student Learning Outcomes and to make connections to the class members' teaching experience.
2. *Weekly Teaching Reflections (20%)* – The LA is expected to spend approximately 5-7 hours per week working with STEM undergraduates in collaborative, learner-centered environments. Using this experience as a guide, complete weekly teaching reflection questions. Post responses to CC. These reflections may be shared with the CSM lead faculty; however, LA names—but not departments/courses—will be removed.

After several weeks, if you have only interacted with a handful of students (and/or mainly on an individual basis), contact your LA seminar instructor (me). Course assignments and the LA model assume you are regularly engaging with small groups of students.

3. *Peer Observation / FCQ (20%)* – (A.) Each LA will complete and submit a written summary of a field observation of another LA. During the LA Seminar, you will also have a consultation session with the LA you observed. Likewise, you will also be observed and participate in a consultation session. **Due 5 March 2013.** (B.) Once during the semester, you will hand out an evaluation form (FCQ) to the students you work with and then analyze the resulting data. These data should be prepared in graphical/tabular form for presentation to small groups in the LA Seminar and also submitted to the instructor. **Due 16 April 2013.**
4. *Weekly Meetings with Lead Faculty in Mathematics and Science to Plan Instruction (20%)* – Each week, LAs are responsible for meeting with the CSM lead faculty to plan and reflect on instruction and to discuss student achievement. Students cannot pass the LA Seminar course if they fail to meet with the Lead Instructor each week.

If you find that your Lead Instructor is not meeting with you, notify your LA course instructor immediately so that this can be corrected.

### **Grading**

Course grades will be based on the following grading scale:

A	.....	Excellent	.....	90	–	100%
B	.....	Above Average	.....	80	–	89%
C	.....	Average	.....	70	–	79%
F	.....	Failing	.....	less than		70%

Unless *prior arrangements* have been agreed to with the instructor, work submitted late, but within one week of the due date will be reduced by one letter grade, and work received over one week late will receive no credit.

### **School of Education Attendance Policy**

Due to the dynamic and interactive nature of courses in the School of Education, all students are expected to attend all classes and participate actively. At a minimum, students must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the student have extenuating circumstances, s/he should contact the instructor as soon as possible. (*Adopted by the COE Governance Community, December, 1997*).

### **All University Writing Requirement**

All CSU students must demonstrate competency in writing skills as a requirement for graduation. At California State University San Marcos, students complete the graduation writing assessment through the All-University Writing Requirement. This requirement mandates that every course at the University must have a writing component of at least 2,500 words (approximately 10 pages). The assignments for this course meet this requirement.

### ***CSUSM Academic Honesty Policy***

“Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All written work and oral presentation assignments must be original work. All ideas/materials that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated with quotation marks.

Students are responsible for honest completion of their work including examinations. There will be no tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor’s attention. The instructor reserves the right to discipline any student for academic dishonesty in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.”

Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

*Plagiarism:* As an educator, it is expected that each student will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized see the Plagiarism Prevention for Students website <http://library.csusm.edu/plagiarism/index.html>. If there are questions about academic honesty, please consult the University catalog.

### ***Students with Disabilities Requiring Reasonable Accommodations***

Students with disabilities who require reasonable accommodations must be approved for services by providing appropriate and recent documentation to the Office of Disable Student Services (DSS). This office is located in Craven Hall 4300, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours or, in order to ensure confidentiality, in a more private setting.