

## Advanced Models of Teaching: Life Science EDST 611 - Spring 2003

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The mission of the College 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 ongoing service. Our practices demonstrate a commitment to student-centered education, diversity, collaboration, professionalism, and shared governance.

### REQUIRED MATERIALS AND RESOURCES:

- Joyce, B., Weil, M., Calhoun, E. (2000). *Models of Teaching-6<sup>th</sup> Edition*. Needham Heights, MA: Allyn and Bacon.
- Laboratory-Type Bound Notebook
- Zip Disk (PC Formatted); one CD-RW disk
- Email Account – Go to ACD 202 to activate your CSUSM email account
- Classroom Access – If you are not currently teaching, you must arrange to plan, teach, and assess a science lesson in a classroom. If you are having difficulty making these arrangements, please see the instructors by the second class session.

### COURSE DESCRIPTION:

In this course, we will investigate several models of teaching and apply them to the science classroom. This course will also focus on expanding the students' breath of science through discussions, experiments, and teachings in life and environmental science. It is the goal of the instructor to make connectivity between the major areas of science. By the end of the class, students should have a stronger knowledge base in the life and environmental sciences and be able to implement several designed lessons in their respective classrooms.

### COURSE REQUIREMENTS:

Assignment	Points	Due Date
1. Assignments and Homework	10	TBD throughout semester
2. Mini Lessons	10	Electronic lesson plan due one week after specified model of teaching is presented
3. Lesson Plan	25	<i>March 6:</i> Group identified topic <i>May 1:</i> Lesson plan with supporting documents due
4. Current Issues Assignment	25	<i>April 24:</i> Paper due
5. Electronic Portfolio	25	<i>May 15:</i> due during finals week
6. Attendance & Participation	5	

**PROFESSIONALISM:**

As a professional in the field of education, you need to take seriously your responsibility for learning and helping others learn in this class. As a professional, you should:

- attend all classes
- arrive on time and remain for the entire period
- be prepared for each class by having thoughtfully completed all readings and assignments
- keep me informed of any extenuating circumstances in your life that may hinder your ability to succeed in this course
- remain on task during class sessions
- respect others' opinions in the class
- be curious about ideas different than your own

I take very seriously the idea that our class is a community of learners. It is important that everyone feels both encouraged to participate and a responsibility to participate. All ideas are welcome including those that are different than my ideas and those of the majority of the class. Only through explorations of multiple perspectives will we be able to really address the complex issues of teaching and learning mathematics.

**COE ATTENDANCE POLICY:**

Due to the dynamic and interactive nature of course in the COE, 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. If you miss two class sessions or are late (or leave early) more than three sessions, you cannot receive a grade of "A". If you miss three class sessions, your highest possible grade is a "C+". Should you have extenuating circumstances, contact the instructor as soon as possible. Please discuss with me any extenuating circumstances that will cause you to miss class prior to your absence. Attendance will be taken at each class session.

**GRADING SCALE:**

Grades will be based on the typical grading scale shown below. Additionally, plus and minus grades will be used.

- A.....90 -100%
- B.....80 - 89%
- C.....70 - 79%
- D.....60 - 69%
- F.....Below 60%

**PLAGIARISM AND CHEATING:**

Please be sure to read and understand the university policy on plagiarism and cheating as it will be strictly enforced. Academic dishonestly will not be tolerated and will result in a failing grade for this course and will be reported to the University.

**SPECIAL CONCERNS:**

Every consideration is made to accommodate student learning in this course. If you have any special needs, please inform if the instructor. Some students are terrorized

by the thought of taking a “science” course. It is the instructor's goal to alleviate this fear and replace it with a positive learning experience!

## **COURSE ASSIGNMENTS:**

With the exception of the laboratory notebook, all assignments should be double-spaced and saved on a zip disk. Each assignment is due on the date indicated on the syllabus, and grades on late assignments will be lowered unless **prior arrangements** have been made with the instructor. A more thorough description of the course assignments is provided near the end of this document.

- ALL ASSIGNMENTS MUST BE TURNED IN BY THURSDAY, MAY 15, 2003.

### **Assignments and Homework (10%)**

This category is reserved for short-term exercises and assignments that are necessary to determine how well you are proceeding in the courses. This is an open category which may include items such as in class activities, quizzes, journal entries, critiques of peer work, etc.

### **Mini Lessons (10%)**

Five lessons following the models covered in instruction. Only one group per week presents a lesson for specified model; the remaining lessons developed by the other groups are to be posted on WebCT for sharing. Presentation groups are static and heterogeneous.

### **Lesson Plan (25%) JOINT ASSIGNMENT**

Grouping – This is a paired activity unless prior approval is obtained. The group is homogeneous. If you are not currently teaching, you must pair up with a student who is teaching in order to satisfy the lesson plan requirements.

Content – The lesson may be in either mathematics or science or a blend of both. If you choose to do a technology-based lesson, the content of the lesson must be in math or science or a blend of both areas.

#### Required Elements -

- Appropriate lesson plan (Model of teaching is specified)
  - Essential elements of instruction
  - Seven step lesson plan
  - Assessment aligned with instruction
- Videotape of lesson (unedited)
- Reflection of videotape and the results of the lesson
- Student work samples supporting reflection

#### Extra Credit

- Integrate technology into the teaching of the lesson
  - As a teaching tool
  - As a student use tool

Edit video to best 3 minutes.

### **Current Issues (25%) JOINT ASSIGNMENT**

What is the impact of the No Child Left Behind Legislation? As a class, you will produce a impact statement on the NCLB legislation that will serve your school, community, and as a general resource. We will divide the research and reading, combine our thoughts, and produce a single document.

Consult the NCLB ([www.nclb.gov](http://www.nclb.gov))

**Electronic Portfolio (25%) JOINT ASSIGNMENT**

The electronic portfolio is a culminating activity in which you reflect on your ability to meet the objectives of these courses. Demonstrate knowledge and ability to apply:

1. A variety of teaching strategies in math, science, and technology
2. Locating and utilizing resources to support using a variety of strategies in your teaching
3. An awareness of the No Child Left Behind legislation and how it applies to teaching math, science, and technology
4. Address National Board for Professional Teaching Standards Core Propositions through classroom performance. (See attachment)

**Attendance and Participation (5%)**

Active participation in this course is determined by both being present and contributing in a positive way that supports the learning of the class. In addition to doing individual work, collaboratively working in groups, both large and small, is an integral part of teaching and learning. A small portion of your grade in this class is determined by how well you are able to work with the variety of individuals in your cohort to produce the best possible outcome. Additionally, you must be present to make your contribution. Your presence is determined not only by your body being in class, but also your mind. No outer-body experiences allowed! 😊

## **ATTACHMENT - Policy Position (Five Core Propositions)<sup>1</sup>**

The National Board for Professional Teaching Standards seeks to identify and recognize teachers who effectively enhance student learning and demonstrate the high level of knowledge, skills, abilities and commitments reflected in the following five core propositions.

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### **Teachers are committed to students and their learning.**

Accomplished teachers are dedicated to making knowledge accessible to all students. They act on the belief that all students can learn. They treat students equitably, recognizing the individual differences that distinguish one student from another and taking account of these differences in their practice. They adjust their practice based on observation and knowledge of their students' interests, abilities, skills, knowledge, family circumstances and peer relationships.

Accomplished teachers understand how students develop and learn. They incorporate the prevailing theories of cognition and intelligence in their practice. They are aware of the influence of context and culture on behavior. They develop students' cognitive capacity and their respect for learning. Equally important, they foster students' self-esteem, motivation, character, civic responsibility and their respect for individual, cultural, religious and racial differences.

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### **Teachers know the subjects they teach and how to teach those subjects to students.**

Accomplished teachers have a rich understanding of the subject(s) they teach and appreciate how knowledge in their subject is created, organized, linked to other disciplines and applied to real-world settings. While faithfully representing the collective wisdom of our culture and upholding the value of disciplinary knowledge, they also develop the critical and analytical capacities of their students.

Accomplished teachers command specialized knowledge of how to convey and reveal subject matter to students. They are aware of the preconceptions and background knowledge that students typically bring to each subject and of strategies and instructional materials that can be of assistance. They understand where difficulties are likely to arise and modify their practice accordingly. Their instructional repertoire allows them to create multiple paths to the subjects they teach, and they are adept at teaching students how to pose and solve their own problems.

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### **Teachers are responsible for managing and monitoring student learning.**

Accomplished teachers create, enrich, maintain and alter instructional settings to capture and sustain the interest of their students and to make the most effective use of time. They also are adept at engaging students and adults to assist their teaching and at enlisting their colleagues' knowledge and expertise to complement their own. Accomplished teachers command a range of generic instructional techniques, know when each is appropriate and can implement them as needed. They are as aware of ineffectual or damaging practice as they are devoted to elegant practice.

They know how to engage groups of students to ensure a disciplined learning environment, and how to organize instruction to allow the schools' goals for students to be met. They are adept at setting norms for social interaction among students and between students and teachers. They understand how to motivate students to learn and how to maintain their interest even in the face of temporary failure.

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<sup>1</sup> NBPTS Web site (<http://www.nbpts.org/about/coreprops.cfm>)

Accomplished teachers can assess the progress of individual students as well as that of the class as a whole. They employ multiple methods for measuring student growth and understanding and can clearly explain student performance to parents.

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**Teachers think systematically about their practice and learn from experience.**

Accomplished teachers are models of educated persons, exemplifying the virtues they seek to inspire in students -- curiosity, tolerance, honesty, fairness, respect for diversity and appreciation of cultural differences -- and the capacities that are prerequisites for intellectual growth: the ability to reason and take multiple perspectives to be creative and take risks, and to adopt an experimental and problem-solving orientation.

Accomplished teachers draw on their knowledge of human development, subject matter and instruction, and their understanding of their students to make principled judgments about sound practice. Their decisions are not only grounded in the literature, but also in their experience. They engage in lifelong learning which they seek to encourage in their students.

Striving to strengthen their teaching, accomplished teachers critically examine their practice, seek to expand their repertoire, deepen their knowledge, sharpen their judgment and adapt their teaching to new findings, ideas and theories.

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**Teachers are members of learning communities.**

Accomplished teachers contribute to the effectiveness of the school by working collaboratively with other professionals on instructional policy, curriculum development and staff development. They can evaluate school progress and the allocation of school resources in light of their understanding of state and local educational objectives. They are knowledgeable about specialized school and community resources that can be engaged for their students' benefit, and are skilled at employing such resources as needed.

Accomplished teachers find ways to work collaboratively and creatively with parents, engaging them productively in the work of the school.

**EDST 611– Advanced Models of Teaching: Science**  
*TENTATIVE SCHEDULE*

DATE	TOPIC	DUE
1/23	Introductions; Discussion on Definition of Science; Group Formation; Balloon Activity	
1/30	Conducting Research in your Science Classroom; Science Journal; Overview of Models	
2/6	<b>Inquiry and Problem-Based Learning Model</b>	Chapter 10
2/13	Mini Presentations	<i>Mini Lesson Due</i>
2/20	<b>Induction Model</b>	Chapter 8
2/27	Mini Presentations	<i>Mini Lesson Due</i>
3/6	<b>Concept Attainment Model</b>	Chapter 9
3/13	Mini Presentations	<i>Mini Lesson Due</i>
3/20	<b>Partners in Learning Model</b>	Chapter 3
3/27	Mini Presentations	<i>Mini Lesson Due</i>
4/3	SPRING BREAK	☺ Enjoy the week!
4/10	<b>Role Playing Model</b>	Chapter 4
4/17	Mini Presentations	<i>Mini Lesson Due</i>
4/24	<b>Equity Issues</b> - Discussion of NCLB Group Paper Jeopardy!	Chapter 23, <i>NCLB Paper Due</i>
5/1	PRESENTATIONS (T & TH)	<i>Lesson Plan Due</i>
5/8	PRESENTATIONS (T & TH)	
5/15	FINALS WEEK – Electronic Portfolio Presentations	<i>Electronic Portfolio Due</i>