

Education 03:
Imagining Teaching: Science-Mathematics Emphasis
Wednesday 4:10 – 6:00pm (WAT 1111)

Instructor: Sounghwa Walker, Ph.D.

Email: swalk009@ucr.edu

Office Hours: Wed. 6:00 - 7:00pm (and/or by appointment)

Office: Sproul 2205

UCR Catalog Description of the Course: 3 Units, Lecture 2, Field 3, Prerequisite(s): admission to the California Teach program; consent of instructor. Considers images of teaching produced in popular culture, professional writing, and personal recollections, and how the images impact and reflect teaching in schools. Addresses topics related to teaching mathematics and science in the K-12 classroom. Includes 3 hours per week of participation and observation in public school classrooms. Designed for lower-division students who plan to teach mathematics or science in the public schools. Credit is awarded for only one of EDUC 001 or EDUC 003.

Course Objectives:

To understand the various teaching approaches by contextualizing the deeper meaning of the roles that teachers play to maximize students' educational outcomes in mathematics and science; in order to do so,

1. Students will observe and participate in public school classrooms on a regular basis, 3 hours per week and 30 hours total for the quarter, in order to gain insights into the math or science teaching profession;
2. Students will examine objectively how personal educational experiences, empirical studies, and/or popular cultures (e.g., media portrayals of teaching practice) might impact their prospect teaching careers in math or science.

Course Materials:

- Fenstermacher, G., & Soltis, J. (2009). *Approaches to teaching*. New York: Teachers College Press (5th Edition)
- Other supplementary readings posted on iLearn

Student Attendance Policy: GSOE takes seriously the need for students to attend and actively participate in classes; class absences and lack of participation undermine the learning process. **Students who miss more than 20% of the course meetings are strongly encouraged to withdraw from the course. Instructors may also fail such students,** except in the case of documented serious illness or immediate family emergency. Missing portions of classes, through persistent late arrival or early departure, can count toward the "more than 20%" of class time.

Writing Policy: The Graduate School of Education believes that all students should exit its programs with strong writing skills. As such, the quality of written composition as well as content will be factored into grades on students' papers for all education courses.

Students with Disabilities: If you have a disability or believe you may have a disability, you can arrange for accommodations by contacting Services for Students with Disabilities (SSD) at 951-827-4538 (voice) or specserv@ucr.edu (email). Students needing academic accommodations are required to register with SSD and provide required disability-related documentation. If you have approved accommodation(s), you are advised to notify your instructor privately.

Student Academic Honesty: Students are expected to conduct themselves and their work in a manner consistent with UCR's policy on academic integrity. Academic misconduct includes, but is not limited to, cheating, fabrication, and plagiarism (e.g., using another's work or ideas without giving credit—intentionally or unintentionally). Submitting your own work more than once (e.g., for this class and another class, without both instructors' knowledge and permission) is also a form of academic dishonesty and will result in an F. If you are at all unsure of what constitutes plagiarism or other forms of academic dishonesty, consult the UCR website for more information: <http://www.conduct.ucr.edu/>. Please familiarize yourself with UCR's policies and procedures regarding academic integrity, published in full in the Schedule of Classes.

COURSE REQUIREMENTS

For all papers - please follow APA format for citations and references. A good paper would show high quality of writing in terms of its composition (thesis, organization, use of scholarly evidence, etc.) as well as mechanics (grammar, spelling, proper citation of sources, etc.).

****Note: No late work will be accepted***

a) **Group Activities/Discussions:**

The way you articulate and communicate ideas as a teacher is essential to a student's active learning. This course is designed to provide you with opportunities to practice these skills. Therefore, attendance, active participation, and active listening are important to the achievement of course objectives. Students are expected to complete the required readings prior to the date listed; be prepared to share thoughts/ideas, and to actively participate in discussions and group activities during each course meeting for full credit.

b) **Field Experience:**

The main purpose of this "Field Experience" is to provide "a math/science classroom observer (you)" an opportunity to experience and gain insights how learning environment would affect students' math/science academic behaviors/learning engagement. Students are expected to complete 3-4 hours of field experience per week (total minimum hours; 30 hours) over the course of 10 weeks. Hours are to be completed on a weekly basis with no more than 4 hours in any given week. Since there may be times when you may need to make-up time from a previous week due to school closure or medical emergencies, you need to plan ahead; the mandatory classroom observation for the weekly 3 hours is expected and NO more than 4 hours per week is allowed. These field experience hours will be reported on a bi-quarter basis (a COPY of your field log is due on week 6 to the instructor and the ORIGINAL FINAL FIELD LOG is due on week 10 to SMI office).

The weekly 3 hours in the field is a major component of the "exploration" into teaching, failure to complete fieldwork hours, submit verification, OR failure to participate in classes as outlined in the syllabus could not earn a grade above a "C-."

c) **Portrayal of Teaching:**

Reflecting on the media portrayal of teaching that might be viewed as positive mirrors of teaching profession. Please be advised that films for the project MUST BE educational appropriate (e.g., PG-13). Each student will create a film project. More information will be given.

d) **Final Reflection:**

You will critically reflect on the course materials that were covered throughout the quarter by primarily focusing on the several teaching approaches (Executive, Facilitator, and Liberationist). In order to show your understanding of the course materials in depth, you will write a minimum of 4 pages to demonstrate what you have learned from this course that may be beneficial to your future STEM related teaching career. More information will be given.

e) **Group Presentation:**

At the end of the quarter, students will present their portrayal of teaching project as a group for about 15 minutes; will be graded as a group. More information will be given.

Late Assignments:

All assignments must be turned in on time. **Late assignments will not be accepted** unless you have made arrangements with the instructor prior to the due date.

COURSE GRADES

A+ = Extraordinary*	B+ = 87 – 89%	C+ = 77 – 79%	D = 60 – 69%
A = 94 – 100%	B = 84 – 86%	C = 74 – 76%	F = below 60%
A- = 90 – 93 %	B- = 80 – 83%	C- = 70 – 73%	

Assignments	Points	Description												
Discussion Activities (each meeting)	50	You MUST be present & actively participate; summary of group discussion, in-class writing, will be collected twice, Week 5 and Week10 - No make-up work is available (exception = medical emergencies w/ a doctor's note) 40 points = 4 points x 10 weeks 10 points = <i>Copy of your DOH for 5 weeks is due on Week 6</i>												
Field Experience DOH (50 pts) Obs. Report (50pts)	100	(a) For each observation, make sure your master teacher signs the DOH form. (b) For weekly observation report, you write what your observation was about (e.g., lesson agenda, student engagement, your own participation, and teacher-student & student-student interaction, etc.). Minimum of 8 reports should be brief & focused (maximum of 2 pages for each report), and MUST BE TYPED . Each observation report should conclude with your own objective/subjective thought processes based on your classroom visit. (c) At the end of the quarter, the original DOH form, showing the completion of 30 hours observation, will be submitted to SMI office AND the typed observation report will be submitted to the instructor.												
Portrayal of Teaching Project	50	This assignment is for you to reflect on popular films in relation to math/science teaching or STEM related education in general. You may also select a film not listed below if you clear it with the instructor in advance. Please include the following information; (1) Title of the movie & the year, (2) short introduction of the film, (3) discuss two 'teaching-learning' scenes in or outside of the classrooms, (4) what do you think the implied lesson(s) from each scene? (5) What do you think the overall message that the film is trying to get across? and (6) short conclusion with your thoughts on math/science education. <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Good Will Hunting</td> <td style="width: 33%;">October Sky</td> <td style="width: 33%;">Rain Man</td> </tr> <tr> <td>Beautiful Mind</td> <td>Stand and Deliver</td> <td>Pi</td> </tr> <tr> <td>The Man Who Knew Infinity</td> <td>X + Y</td> <td>Infinity</td> </tr> <tr> <td>And more</td> <td></td> <td></td> </tr> </table>	Good Will Hunting	October Sky	Rain Man	Beautiful Mind	Stand and Deliver	Pi	The Man Who Knew Infinity	X + Y	Infinity	And more		
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Final Reflection	50	This final reflection is to provide you all an ample opportunity to critically reflect on what you have learned throughout the quarter. You could show your learning experiences and your depth of understanding for the course materials in several ways, but make sure to include the followings; (1) summarize some of the key components of each teaching approach (i.e., facilitator, executive, and liberationist) in terms of theoretical perspectives, (2) discuss why each of 3 teaching approaches are important to maximize educational outcomes in math/science, and (3) share how you would effectively utilize all 3 teaching approaches in order to enhance motivation, engagement, and achievement in math/science classrooms.												
Group Presentation	50	Each group will consist of 3 students. Based on the portrayal of teaching project, you will present some of the key important implications (i.e., closely relevant to teaching and learning) of the movies that you had watched. More specifically, you will analyze the core ideas/underlying themes of the films in relation to STEM education, and how those educational messages impacted your views on the culture of math/science teaching and learning. However, group members are allowed to be creative as to how to present his/her film project using power point slides.												
Total	300													

Tentative Schedule of the Course

Date	Topic	Readings	Assignment Due
Week 1 (10/04)	Introduction to course <ul style="list-style-type: none"> ▪ Syllabus ▪ Teaching – what is it? ▪ Observation – Dos and Don'ts 	Approaches to teaching Chapter 1	
Week 2 (10/011)	Portrayals of teaching In popular movies regarding math/science (reality or fiction? Why or why not?) Executive approach	Readings posted on iLearn Approaches to teaching Chapter 2	
Week 3 (10/18)	Facilitator approach Liberationist approach	Approaches to teaching Chapter 3 & 4	Portrayals of teaching
Week 4 (10/25)	Lesson planning (5E lesson plan)	Readings posted on iLearn	
Week 5 (11/01)	Assessment (& evaluation) of student learning	Readings posted on iLearn	Course discussion Week1 – Week5
Week 6 (11/08)	Four-factor in math/science classroom (Climate, Input, feedback, & output)	Readings posted on iLearn	COPY of DOH (15 hours expected)
Week 7 (11/15)	Using technology to improve student engagement (& motivation)	Readings posted on iLearn	
Week 8 (11/22)	Modeling a Math/Science teaching (Review multiple approaches to teaching)	Approaches to teaching Chapter 5 & 6	Reflection
Week 9 (11/29)	A New Generation of Standards in California California NGSS California CC Math The rationale behind NGSS https://youtu.be/SEc1ENq3FSs	Readings posted on iLearn	Working on group presentation
Week 10 (12/06)	Group presentation	<ul style="list-style-type: none"> ▪ Course discussion of Week6 – week10 is due ▪ Observation report (8 minimum) is due 	

(Subject to change)