University of California – Riverside, School of Education

EDUC 004 LOOKING IN CLASSROOMS - SCIENCE & MATH EMPHASIS

Fall 2022 (Mondays 5:00 – 6:50pm) @ Skye Hall 173

INSTRUCTOR: Soung Hwa Walker, Ph.D.

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CATALOG COURSE DESCRIPTION

3 Units, Lecture, 2 hours; field, 3 hours. Involves observation in classrooms in local schools identified as having exemplary programs in mathematics and science. Students record and interpret their observations and compare them to published studies of 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 002 or EDUC 004.

Course Pre-requisites: EDUC 003; admission to the California Teach program; consent of instructor.

COURSE OVERIVEW

This course consists of 2 hours of lecture at the university and 3 hours of observation and participation in secondary public-school classrooms per week. Students will observe and participate in classroom instructional practices while developing critical observation and reflection skills. Students will be placed in local secondary mathematics or science classrooms. They will compare and contrast real classroom practice with published educational theory and consider the implications for students' learning. Emphasis will be on secondary students' acquisition of conceptual and procedural knowledge. Students will develop an understanding of the changes occurring in science and math education, the historical context of these changes, the implications for professional educators, and the career opportunities available to them in science and math education.

COURSE OBJECTIVES

1. Through observation of teaching videos and interaction with science and mathematics teachers, students will gain insight into the practical considerations of daily instruction in public secondary schools.
2. A major focus will be to consider the interactions between teachers and students and how those interactions impact conceptual and/or procedural learning.
3. Through reflective consideration of their critical observations and technical readings, students form deeper understandings of the strategies which help develop conceptual understanding in science, technology, engineering and mathematics.
4. By developing a working relationship with classroom teachers, students will develop a more complete understanding of teaching science/math courses in a public secondary classroom from a teacher's perspective.
5. Students will observe, detail, and critique a math or science lesson focusing on three criteria from the course.

LEARNING OUTCOMES

By the end of the course, students will be able to (but not limited to);

1. Show their deeper understanding of how teacher and students' interactions would impact learning behaviors and achievement and
2. Demonstrate their analytical approaches to effective math/science teaching via 5E lesson planning exercise as well as various course assignments.

UCR-SOE POLICIES

ACCOMMODATIONS POLICY

If you have a disability or believe you may have a disability, you can arrange for accommodations by contacting Student Disability Resource Center (SDRC) at 951-827-3861 (voice) or sdrc@ucr.edu (email). Students needing academic accommodations are required to register with SDRC and provide required disability-related documentation. If you have approved accommodation(s), you are advised to notify your instructor privately. The SDRC website http://sdrc.ucr.edu provides information about academic and non-academic supports and has additional contact information.

ATTENDANCE POLICY

SOE 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% (2 days) of the course meetings are strongly urged 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 School of Education believes that all students should exit its program 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 classes.

ACADEMIC HONESTY POLICY

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://conduct.ucr.edu. Please familiarize yourself with UCR's policies and procedures regarding academic integrity, published in full in the General Catalog at http://catalog.ucr.edu.

COVID-19 related POLICY

See UCR campus website for more detail: http://campusreturn.ucr.edu.

COURSE POLICIES & OTHER RELEVANT INFORMATION

DIVERSITY POLICY

It is the policy of UCR to support and value diversity; therefore, we require:

- Respect the dignity and essential worth of ALL individuals
- Promote a culture of respect throughout the university community in person and online
- Respect the privacy, property, and freedom of others
- Reject bigotry, racism, discrimination, violence, hazing, or intimidation of any kind
- Promote diversity of opinions, ideas, and background
- Respect the form of how people have asked to be addressed (names/pronouns)

ELECTRONIC COMMUNICATION POLICY

Use your UCR email for all course related communication. When sending me an email, please indicate the purpose of the email followed by the course number in the subject heading (*e.g., EDUC 004 – Presentation*). Keep in mind that I will try to respond to your email inquiries within 24 during the weekdays and within 48 hours during weekends.

GENERAL EXPECTATIONS during each course meeting (*NO TEXTBOOK*)

- Read all assigned course materials posted on CANVAS before the class.
- Use appropriate language when sharing thoughts and opinions. We all have our own views; thus, be sure to exercise professional courtesy. The goal is to create an environment that encourages academic discussion and personal growth.
- No external electronic recordings nor downloading videos are allowed during the class without the instructor's approval.

UCR ACADEMIC RESOURCE CENTER (for undergraduate students)

The Academic Resource Center (ARC) is the central resource for academic support at UCR. All students are strongly encouraged to visit the ARC, which is staffed by professional and student employees who are well trained to provide academic support and dedicated to fostering academic excellence. Resources provided by the ARC include Tutoring, Supplemental Instruction, Study Skills Workshops, as well as several peer mentoring programs. Participating in these services is most useful to students when used pro-actively for academic enrichment. Visit arc@ucr.edu or call 951-827- 3721 for more information about hours, location and the schedule of services.

LATE ASSIGNMENTS

- You may not make up "course engagement activities" that were missed.
- Late assignments will be accepted **only up to 7 days beyond the specified due date.** Points will be decreased by **10% per one day late** unless accompanied by proper documentation that could excuse the late assignment submission.
- Remember that technology can occasionally be troublesome, so do not wait until the last minute to submit your work. Technology issues will not excuse late work. For example, assignment #1 (40 points total) is late for one day (e.g., 1 hour late or 15 hours late), then your assignment #1 score will be decreased by 4 pts automatically for being late, *unless* accompanied by a legitimate excuse such as below:
    - Illness with a doctor's note
    - Having to care for an ill loved one
    - Having a death in the family
    - Being involved in a car accident
- If accompanied by a legitimate excuse/documentation, no late submission points will be deducted during the time period the excuse covers.

GRADING SCALE

A+ = 97– 100%	**B+** = 87 – 89%	**C+** = 77 – 79%	**D+** = 67 – 69%
A = 93 – 96%	**B** = 83 – 86%	**C** = 73 – 76%	**D** = 63 – 66%
A- = 90 – 92%	**B-** = 80 – 82%	**C-** = 70 – 72%	**D-** = 60 – 62%

F = 59% or below OR failure to complete the required 30 hour-fieldwork and submit the verification OR failure to participate in classes as outlined in the syllabus.

COURSE REQUIREMENT INFORMATION

ASSIGNMENTS	Points	TOTAL
Fieldwork (DOH form + ATLAS)		30%
Weekly Journal		25%
In-Class Activity		20%
Course Project*		25%
Total		**100%**

- Assignments that DO NOT follow by the provided instructions will not be graded.
- Communication is key to your success. If concerns arise, please let me know and we can work through your options for success in this course

1. **FIELDWORK: LOG (30% and required to receive passing grade)**
   - A total of 30 hours of observation (20 hours in-person and 10 hours via ATLAS) must be completed before the quarter ends. Approximately 2 to 2.5 hours observation per week in a public, secondary school, regular education classroom (as assigned by SMI) and 1 hour per week via assigned teaching videos from ATLAS.
   - You will keep the record of your classroom visit via "Document of Hours (DOH)" – DOH form can be downloaded from http://smi.ucr.edu/document/documentationofhoursform3-4.
   - 1st check-up: Week 3, 2nd check-up: Week 6 for your progress observation log (i.e., DOH). By the end of the quarter, submit your completed 20-hour DOH form for credit.
   - Mentor teachers will corroborate each student's recorded DOH by the end of the quarter.

   - Each student must complete the required field observations AND submit the DOH form in order to receive a C-grade OR above. According to the university guideline, a "C" grade or higher is equivalent to "S" credit.

2. **JOURNAL REFLECTION (25%)**

   The overarching theme of the course is exploring the science/math classroom of the 21st Century. Typically, educational situations in the classroom are embedded within school and community cultures along with their unique history and traditions. Journal reflections, based on your fieldwork experiences (i.e., classroom observations and/or ATLAS videos) and the provided course readings, will serve your understanding of the current state of STEM education as well as research on science/math teaching and learning. A record of your thoughts and observations will help to guide your own professional development as a future science/math educator.

3. **In-Class Activity (20% and required to receive passing grade)**

   All required readings are available via CANVAS. Your active intellectual engagement/meaningful discussion during each course meeting will take a significant portion of your grade. Thus, make sure to complete the required readings prior to each course meeting.
   - Each student is responsible to submit their course engagement by the end of the class (or by 11:00pm on Mondays when instructed).
   - Missing two or more classes or habitually showing up late or leaving the class early may lead to receiving a failing grade for the course.

   Remember: There are no make-ups for class participation credit.

4. **COURSE PROJECT (25%)**
   - 5E lesson plan project as a group (each group will consist of 3 students).
   - Project will be presented at the end of course meeting.
   - More detailed information regarding the course project will be discussed in class.

TENTATIVE COURSE SCHEDULE (subject to change)

***The instructor reserves the right to modify schedules/assignments as she sees fit.**

LECTURE and ACTIVITY	READING DUE	ASSIGNMENT DUE
Week 1 (9/26) **Welcome and Overview of the Course**		
- Logistics and administration details from SMI office - Syllabus: Course Expectations, Assignments, etc. - Bring your best to our 1st course meeting	NONE	NONE
Week 2 (10/03) **Why Do We Need Standards To Teach Content?**		
- New Generation Science Standards (NGSS) and Common Core State Standard (CCSS) for math - Looking into classroom: how does good teaching look like?	Common Core and NGSS See CANVAS for links	**JR 1**
Week 3 (10/10) **Is Classroom Management Just About Discipline?**		
- Growth mindset and Socio-emotional learning (SEL) - Behavioral expectation & discipline	Dweck (2014). Mindsets & math/science achievement. Jones et al. (2014). SEL- essential to classroom management	**JR 2** DOH form (at least 6 hours)
Week 4 (10/17) **How Do We Know What They Already Know And Why Does It Matter?**		
- Significance of student prior knowledge (accessing & assessing) - What we know vs how we teach	Oyinloye & Popoola (2013) Atlas Video 302 & 993 Recent study: TBD	**JR 3**
Week 5 (10/24) **What Types of Strategies Can Be Utilized To Provide Differentiated Instruction & Assessment?**		
- Differentiation and strategies - Wait, aren't we supposed to teach the same thing to everyone?	Parsons, et al. (2013) ATLAS Video: TBD Recent article: TBD	Atlas 5 hours observation **JR 4**
Week 6 (10/31) **Is Student Engagement Really a Key To Their Success?**		
- How are we doing so far? Revisit 5E lesson model - Meaningful engagement: How does it look like?	Tanner (2013) Almarode (2014) ATLAS Video 1846	DOH form (at least 12 hours) **JR 5**

LECTURE and ACTIVITY	READING DUE	ASSIGNMENT DUE
Week 7 (11/07)	**How can We Assist English Language Learners To Become Proficient In English While Also Developing Proficiency In STEM Content?**	
- Building academic vocabulary; ATLAS case #377 & 192 - Technology implementation for ELLs - Frequent check for understanding (FCU); Kahoot	Lee & Stephens (2020). English Learners in STEM Subjects Miller et al. (2014) NGSS for ELL	**JR 6**
Week 8 (11/14)	**How Can We Assess Learning?**	
- Formative vs Summative assessments - Revisit 5E lesson plan model - More details about final exam	Dixson & Worrell (2016) Gao et al. (2020)	**JR 7** Work on your final course project
Week 9 (11/21)	**What Is Equity In Education And What Can We Do To Move Toward It?**	
- Barriers to equity - Activity on how to achieve more equity - Preparing and working on the final group project*	Levitan (2015)	**JR 8**
Week 10 (11/28)	**Final Exam (Portrayal of Good Teaching)**	
- Presentation on course project as a group - 5E Lesson critique	Reading Due: NONE	

➔ No submission is allowed for the late assignments after 11:00pm, 12/02/2022 (Friday)
➔ Submit the **complete DOH form (20 hours) and ATLAS (10 hours) by the end of Week 10**

* JR = Weekly Journal Reflection
* All required assignments are due 11:00pm by the end of the week (Friday) unless otherwise instructed