

NASC 192: Careers in Science and Mathematics Education

Winter 2016

Dr. Bradley Hyman, Instructor

ABOUT THIS COURSE:

Why this course is different? This course is unique in course content as it attempts to familiarize you with current trends in STEM education as established by academic and legislative experts using documents such as "*How People Learn*," the national mathematics "*Common Core*," and "*Next Generation Science Standards*", among others. I attempt to make you conversant with these national guidelines while also introducing you to modern pedagogical tools shown to be effective in STEM classrooms. As such, we become familiar with these nationally adopted metrics via active learning approaches.

Expectations: Our small enrollment means that for the course to succeed, and for you to succeed, all students are expected to participate in the small and larger group learning exercises that collectively constitute the "flipped" classroom-active learning pedagogical approach. The course is but one unit, but the University of California defines one unit as one-hour of in-class time with a faculty member and up to 2-3 hours of work outside the classroom (Regulation 760). This time investment evens out over the 10-week quarter. Some weeks will require very little of you with respect to outside work; other weeks will require some preparation on your part that may equate with 2-3 hours...or a little bit more. The highest workload will involve your preparation of the centerpiece of the course, a review of a published paper (of your choice) in STEM education. This requirement is known as the "Quarter Assignment." When you are not presenting, you will be expected to enthusiastically engage each week in small group work, short in-class writing and oral assignments, and similar exercises.

"Quarter Assignment": This assignment is described in detail in a document posted in the "Assignment" section of our Blackboard/iLearn webpage. In summary, you will be identifying a publication of your choice from the primary literature (we will define primary literature early in the quarter), and then reviewing the paper itself in a short presentation developed along the 5E model of pedagogy. You should not underestimate the time involved in preparing a short presentation--every word counts. Hopefully you will employ active learning in your presentation; by thinking about in-class activities and manipulables, teaching can be all the more fun and rewarding. A timeline at the bottom of the "Quarter Assignment" document that will keep you on task.

Grading: This class is graded S/NC. My own expectation for you is that everyone will receive an "S" if you are consistently engaged and enthusiastic about our assignments and exercises. Remember, this class is for *your* benefit! The information you gain will be useful in your future classrooms and when you

interview for credential programs and for teaching jobs. This motivation alone should serve you well throughout the quarter.

Support: While I have not listed formal office hours, I am happy to make an appointment with you whenever you wish to discuss any and all matters pertaining to the course, including your "Quarter Assignments." Simply email me (bhyman@ucr.edu) with your questions or to make a request for an appointment. I want to see each of you succeed and if desired, to be able to write each of you a professionally intimate and impacting letter of recommendation for your future GSOE applications. I offer this unique seminar so that I can get to know you and your skill sets better, so please take advantage of this opportunity. Very few credential applicants have introductions to the Common Core, Next Generation Science Standards, and the primary education literature at the level we have in this course; such exposure is very compelling when you apply for credentialing programs and teaching positions, especially during interviews. My own primary learning outcome for this course is to make you academically irresistible to GSOE admissions and school district hiring committees.