

Careers in Science and Math Education - NASC 192

Winter 2022

Tuesdays 2:00 – 2:50 am

Location: INTS 1134

Instructor: Dr. Jack Eichler, CS 220, jack.eichler@ucr.edu

Course Goals: The broader goals of this seminar course are two-fold: 1) Encourage you to think about the science of learning and introduce you to pedagogical tools designed to help improve student learning in STEM classrooms; and 2) Introduce you to issues related to assessment in the California secondary education system, and how your approaches to teaching will fit within this framework.

Course Schedule:

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| Jan 4 | Introductions, course goals, and objectives <u>Activity:</u> Think-Pare-Share/Five Fundamental Ideas on Learning |
| Jan 11 | Student Discourse Part I; dialogic vs. authoritative discussion <u>Activity:</u> Analysis of classroom transcript |
| Jan 18 | Student Discourse Part II; eliciting conceptual understanding <u>Activity:</u> Conceptual understanding and energy changes in chemical reactions |
| Jan 25 | Assessment of student understanding – The 3D Assessment Model <u>Activity:</u> Using the 3D assessment protocol <u>Assignment 1:</u> Create an assessment and use the 3D assessment protocol to categorize assessment questions |
| Feb 1 | Sharing out of student assessments and 3D categorization |
| Feb 8 | Active Learning Part 1; accessing prior knowledge and developing new conceptual understanding <u>Activity:</u> Discovery learning and student misconceptions - phases of the moon interactive demonstration |
| Feb 15 | Active Learning Part 2 <u>Activity:</u> Question-based learning using in-class response systems (Ex: calculating probability) |
| Feb 22 | Common Core and NGSS (Next Generation Science Standards) <u>Activity:</u> Turn and Talk/How will your class learning objectives be influenced by Common Core/NGSS? |
| Mar 1 | Analysis of NGSS/common core ideals in classrooms <u>Activity:</u> Analysis of ATLAS classroom video footage <u>Assignment 2:</u> Interview former or current mentor teacher about implementation of NGSS/Common Core. |
| Mar 8 | Sharing out of mentor teacher interviews |

Final Exam Reflection on previous SMI classroom fieldwork and its impact on your preparation for school of education credential programs

Grading

Attendance: 200 points (20 points each session)

Assignment 1: 100 points

Assignment 2: 100 points

Final Exam: 100 points

450-500 points = A

430-449 = B+

400-429 = B

375-399 = C+

350-374 = C

250-349 = D

< 250 = F

Assignments – Detailed instructions for each writing assignment will be distributed separately prior in lecture.

Class attendance: Attendance will be taken each week. Absences will not be excused unless a valid documented excuse can be provided (hospitalization that prevents attendance or death in the immediate family). Attendance will be taken at the beginning of lecture. If you arrive late after the attendance has been taken this will count as an absence.