

Careers in Science and Math Education - NASC 192L

Winter 2021

Wednesdays 2:00 – 2:50 am

Location: Zoom

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

Course Goals: The broader goals of the field work are three-fold: 1) Provide for you a chance to see how classroom discussion/student discourse can be used to foster conceptual understanding; 2) help you develop a lecture tutorial activity that can be used to foster conceptual understanding in a topic of your choice; and 3) give you a chance to implement the lecture tutorial in a real classroom setting.

Course Schedule:

- Jan 6 Introductions, course goals, and objectives
Activity: Class discussion – how has online instruction been going in the field work? Discussion of using Atlas videos for observations.
- Jan 13 Student Discourse Part I; dialogic vs. authoritative discussion
Activity: Class discussion – Observation of dialogic or authoritative discussion in Atlas videos.
- Jan 20 Student Discourse Part II; eliciting conceptual understanding
Activity: Virtual lab demo – melting ice
Assignment 1: Literature reading – theoretical framework of conceptual understanding.
- Jan 27 Student Discourse Part III; eliciting conceptual understanding
Activity: Class discussion – Correlation of student performance on traditional exams and conceptual understanding? How to foster conceptual understanding?
- Feb 3 Example of effective student discussion and development of conceptual understanding
Activity: ATLAS video observation and class discussion.
Assignment 2: Find ATLAS video where teachers facilitates effective student discussion and helps facilitate conceptual understanding; written analysis.
- Feb 10 Examples of effective student discussion and development of conceptual understanding
Activity: Selected student presentations of ATLAS video analysis
- Feb 17 Analysis of active learning
Activity: Analysis of of ATLAS classroom video footage

Feb 24	Using lecture tutorials to foster conceptual understanding <u>Activity</u> : Greenhouse gases lecture tutorial <u>Assignment 3</u> : Create lecture tutorial
Mar 3	Student presentations – lecture tutorials
Mar 10	Student presentations – lecture tutorials

Grading

Attendance: 50 points (5 points each session)

Assignment 1 (analysis of): 150 points

Assignment 2 (written analysis of ATLAS video): 150 points

Assignment 3 (lecture tutorial): 150 points

450-500 points = A

430-499 = 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.