



SCIENCE EDUCATION PROGRAM

SAN JOSÉ STATE UNIVERSITY

SCED 285: Seminar in Science Education Spring 2019

Instructor: Dr. Phillip A. Boda

Office Location and Hours: By appointment only

E-mail: sced285spring2019@gmail.com

Class Days/Times: Thursdays 4-6:45pm

SJSU Classroom: DH 246

Google Classroom code: njl9af

Course Description

Grounded in the premise that the Next Generation Science Standards (NGSS Lead States, 2013) hold particular weight in K-12 education, understanding what research exists on these standards can help support any stakeholder in science/education that wants to become more fluent with the practices that support all students learning science in equitable ways. Using the Special Issue: A Critical Examination of the Next Generation Science Standards as a guide, this course takes up a guest speaker format some weeks with concurrent formal and informal discussions across all sessions. Students are also expected to lead discussions each week in coordination with the professor. The course ends with a formal summative assessment where students present an individual project (empirical or design) and how it relates to this particular field. The goals of this course are three-fold: (1) Develop students' fluencies of research in science education within the past 5 years, specifically those related to the NGSS; (2) Help students connect these recent research studies to an individual summative project; and (3) Foster a sense of curiosity, courage, and creativity in the way students' think about designing learning environments.

Course Structure

This course operates as a seminar on science education research with the expectation that students have a working background of science education theory and practice. In turn, students in this course will **read 2 peer-reviewed publications per week before class**, write **weekly structured Reading Reactions** based on the 2 papers assigned for each week, **lead discussions about the 2 papers** in collaboration with the professor, and complete a **final summative PPT or Prezi presentation** that will be presented during that 2nd to last two sessions of the course. There will also be (bi)weekly speakers that students will provide questions for in their **Reading Reactions** and facilitate discussion with during their assigned session to **lead discussions**.

Course Goals and Learning Outcomes

Program Learning Outcomes (PLOs)

1. Students will be able to synthesize recent literature from science education research and apply how it fits into their own individual work in the Science Education Program;
2. Students will demonstrate knowledge of at least two areas of study within science education research more broadly by utilizing these sub-fields in their final project.

Course Learning Outcomes (CLOs)

1. Critically read peer-reviewed articles in science education;
2. Engage in authentic discussions on education research with researchers and peers;
3. Write thoughtful and original reflections on emerging research in science education;
4. Discuss and leverage multiple conceptual frames for making sense of data and research.

Required Texts/Readings

All articles are provided for students within the Google Drive connected to the course's Google Classroom - students should download the ZIP file and they will find all the required readings.

Course Assignments with Grade Breakdown and Due Dates

- **Reading Reactions (44%):** Due 7am each Thursday we hold class
- **In-class Notes and Work (22%):** Due by 6:30pm each Thursday we hold class
- **Final Summative Outline and Presentation (33%)**
 - Outline due by 9pm March 14th
 - Final Presentation (Session 13 or 14)
- **First and Last Session's Concept Maps (1%)**

For further explanations of each assignment and the rubrics used to grade them see the Google Classroom Assignment Descriptions and the Google Drive connected to our Google Classroom.

Late Policy

Any and all work submitted after the assigned due date/time will be subject to a 25% deduction in points earned; this policy also applies for work submitted that does not abide by the structure/requirements for the assignment.

For example, Reading Reading on time and Complete guided by the structure provided (4/4); Reading Reaction late and Complete guided by structure (3/4); Reading Reaction late and incomplete given departure from structure provided (2/4).

University Policies for Attendance, Accommodations, and Academic Integrity

See the following link for the University Policies that apply to all courses at SJSU:

<http://www.sjsu.edu/gup/syllabusinfo>