California State University
SAN MARCOS

SCHOOL OF EDUCATION

Engaging diverse communities through leading and learning for social justice.

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Course & Section Nos.	**EDSS 543A**
Course Title	**SECONDARY MATHEMATICS EDUCATION A**
Class Roster No.	#40310
Course Day(s)	Thursdays and one Saturday
Time	5:00-8:00 pm
Course Location	University Hall 441
Semester / Year	Fall 2018
Instructor	**Anthony Matranga, Ph.D.**
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Office	University Hall 404
Office Hours	By appointment

SCHOOL OF EDUCATION MISSION & VISION STATEMENT

(Adopted by SOE Governance Community, January 2013)

Vision

To serve the educational needs of local, regional, and global communities, the School of Education advances innovative practice and leadership by generating, embracing, and promoting equitable and creative solutions.

Mission

The mission of the School of Education community is to collaboratively transform education. We:

- Create community through partnerships
- Promote and foster social justice and educational equity
- Advance innovative, student-centered practices
- Inspire reflective teaching and learning
- Conduct purposeful research
- Serve the School, College, University, and Community

BASIC TENETS OF OUR CONCEPTUAL FRAMEWORK

- Student centered education
- Research and theory specific to the program field inform practice
- Connections and links between coursework and application
- Strong engagement between faculty and candidates
- Co-teaching clinical practice
- Culturally responsive pedagogy and socially just outcomes

COURSE DESCRIPTION

This course focuses on developing an understanding of theory, methodology, and assessment of Mathematics in integrated and secondary classrooms, Part A. This course is aligned with California's SB 2042 Standards.

Course Prerequisites

Admission to the Single Subject Credential Program.

Course Objectives

The goal of your work in this course is to develop a disposition towards mathematics instruction that *takes student thinking seriously* and places student thinking at the center of instructional decision making. Specific objectives include (1) making sense of research-informed and equitable teaching practices, (2) developing proficiency with these practices through rehearsals in the mathematics methods classroom and applying them to the clinical practice, (3) developing skills in noticing significant aspects of students' mathematical thinking, and (4) developing reflective habits of mind that support consistent improvement and refinement of research-informed and equitable teaching practices as you transition into your first teaching position.

The National Council of Teachers of Mathematics (NCTM) released a publication in 2018 titled, "Catalyzing change in high school mathematics: Initiating critical conversations," that outlines research-informed and equitable teaching practices (pg. 32-34). This course and the instructor's pedagogical practices are aligned with equitable practices outlined in NCTM's recent publication. This course focuses on several practices that are at the core of NCTM's vision for equitable instruction:

(1) Supporting the emergence of a community of learners by
    (a) welcoming and valuing all students' contributions,
    (b) scaffolding rich student-to-student discussion, and
    (c) using technology to mediate student interaction;
(2) Anticipating student thinking to generate themes in thinking that might emerge during a particular lesson; and
(3) Reflecting on evidence of student thinking to make formative decisions about subsequent instructional tasks.

Unique Course Requirements

Observation and participation in the public schools, including collaborative planning with teachers.

Credit Hour Policy Statement

Per the University Credit Hour Policy, students are expected to spend a minimum of two hours outside of the classroom each week for each unit of credit engaged in learning.

REQUIRED TEXTS, MATERIALS AND ACCOUNTS

National Council of Teachers of Mathematics. (2018). Catalyzing change in high school mathematics:

Initiating critical conversations. Reston, VA.

Recommended Texts

Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*: John Wiley & Sons.

Carr, J., Carroll, C., Cremer, S., Gale, M., Lagunoff, R., Sexton, U. (2009). *Making mathematics accessible to English learners*. San Francisco: WestEd.

Cohen, E. G. (2014). *Designing groupwork: Strategies for the heterogeneous classroom* (3rd ed.). New York: Teachers College Press.]

Smith, M. S., Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston,

VA: NCTM.

Authorization to Teach English Learners

This credential program has been specifically designed to prepare teachers for the diversity of languages often encountered in California public school classrooms. The authorization to teach English learners is met through the infusion of content and experiences within the credential program, as well as additional coursework. Candidates successfully completing this program receive a credential with authorization to teach English learners. *(Approved by CCTC in SB 2042 Program Standards, August 02)*

Teacher Performance Expectation (TPE) Competencies

The course objectives, assignments, and assessments have been aligned with the CTC standards for Single Subject Credential. This course is designed to help teachers seeking a California teaching credential to develop the skills, knowledge, and attitudes necessary to assist schools and district in implementing effective programs for all students. The successful candidate will be able to merge theory and practice in order to realize a comprehensive and extensive educational program for all students.

Teacher Performance Assessment

Beginning July 1, 2008 all California credential candidates must successfully complete a state-approved Teacher Performance Assessment (TPA), as part of the credential program of preparation. During the 2018-19 academic year the CSUSM credential programs will use the CalTPA (California Teacher Performance Assessment)

CalTPA

To assist with your successful completion of the CalTPA, a series of informational seminars are offered over the course of the program. TPA related questions and logistical concerns are to be addressed during the seminars. Your attendance to TPA seminars will greatly contribute to your success on the assessment. The CalTPA Candidate Handbook, TPA seminar schedule, and other TPA support materials may be found on this website:
http://www.ctcpa.nesinc.com/Home.aspx

Additionally, to support your success in your credential program and with TPA, SOE classes use common pedagogical language, lesson plans (lesson designs), and unit plans (unit designs).

Expected Dispositions for the Education Profession

Education is a profession that has, at its core, certain dispositional attributes that must be acquired and developed. Teaching and working with learners of all ages requires not only specific content knowledge and pedagogical skills, but positive attitudes about multiple dimensions of the profession. The School of Education has identified six dispositions that must be evident in teacher candidates: social justice and equity, collaboration, critical thinking, professional ethics, reflective teaching and learning, and life-long learning. These dispositions have observable actions that will be assessed throughout the preparation program. For each dispositional element, there are three levels of performance - *unacceptable*, *initial target*, and *advanced target*. The description and rubric for the three levels of performance offer measurable behaviors and examples.

The assessment is designed to provide candidates with ongoing feedback for their growth in professional dispositions and includes a self-assessment by the candidate. The dispositions and rubric are presented, explained and assessed in one or more designated courses in each program as well as in clinical practice. Based upon assessment feedback candidates will compose a reflection that becomes part of the candidate's Teaching Performance Expectation portfolio. Candidates are expected to meet the level of *initial target* during the program.

SCHEDULE/COURSE OUTLINE

*This schedule is an *approximation*. Given the nature of learning being non-linear and not as predictable as one might wish, we will likely be altering the scheduled topics and possibly times and dates in order to accommodate student interest, observe and teach in mathematics classrooms, and take advantage of professional development opportunities.

Date	Topic*	Readings to be completed before class
Session 1 August 30 5:00-8:00	Course introduction Curriculum Mapping Doing Mathematics	1. Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*: John Wiley & Sons. [Chapters 1 - 3] 2. Launch-Explore-Summarize Article
Session 2 September 6th 5:00 – 8:00	Rich Mathematical Tasks Low floor high ceiling tasks	1. Stein, M. K., Smith, M. S., Henningsen, M. A., & Silver, E. (2000). *Implementing standards-based mathematics instruction: A casebook for professional development.* New York, NY: Teacher's College Press. (Foreword, Introduction, and Analyzing Mathematics Tasks) 2. Boaler, J. (2015). *Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching*: John Wiley & Sons. [Chapter 5] 3. National Council of Teachers of Mathematics, (2018). Catalyzing change in high school mathematics: Initiating critical conversations. Reston, VA. ["Introduction" through "implementing equitable instruction" chapters]
Session 3 September 13th 5:00 – 8:00	Launch: Noticing and Wondering Anticipating and Monitoring Student Thinking	1. Stein, M. K., et al. (2008). "Orchestrating productive mathematical discussions: Five practices for helping teachers move beyond show and tell." Mathematical Thinking and Learning **10**(4): 313-340. 2. Ray-Reik, M. (2013). *Powerful problem solving: Activities for sense making with the mathematical practices*. Portsmputh, NH: Heinemann. [Chapters 1 and 4]
Session 4 & 5 September 29th 9:00 – 3:30	Rehearsals: Lesson launch Peer-to-peer assessment	
Session 6 October 4th 5:00-8:00	Explore Noticing student thinking Selecting/Sequencing	1. Stein, M. K., et al. (2008). "Orchestrating productive mathematical discussions: Five practices for helping teachers move beyond show and tell." Mathematical Thinking and Learning **10**(4): 313-340. 2. Jacobs, V. R., Lamb, L. L., & Philipp, R. A. (2010). Professional noticing of children's mathematical thinking. *Journal for Research in Mathematics Education*, 169-202.

Session 7 October 11th 5:00-8:00	Co-planning with EUSD teachers	Readings will be provided by your instructor Co-teach your lesson with EUSD teachers before November 1st
Session 8 November 1st 5:00-8:00	Video Analysis	Readings will be provided by your instructor
Session 9 December 6th 5:00 – 8:00	Formative Assessment Summarize/Orchestrate Discussion	Readings will be provided by your instructor
Session 10 December 13th 5:00-8:00	Summarize/Orchestrate Discussion Planning for Spring 2019	Readings will be provided by your instructor

COURSE REQUIREMENTS AND GRADED COURSE COMPONENTS

Course Assignments

1. Curriculum Mapping: The National Council of Teachers of Mathematics (NCTM) recently made a call for organizing the high school curriculum around essential concepts. In this assignment, your task is to map out the topics you will cover in your CP during the first semester and then link those standards to NCTM's essential concepts.
TPE: 2.5

2. Lesson Analysis: The purpose of this assignment is to gain deeper understanding of (1) how you implement research-informed equitable teaching practices and (2) your students' mathematical thinking. This assignment includes 4 parts. Part 1 is a completed lesson plan. Part 2 is a video recording of you facilitating the "explore" phase of the lesson. Part 3 includes analyzing your video recording with a partner. Part 4 includes writing a reflection paper on the analysis.
TPE: 1.1, 1.3, 1.5, 1.8, 4.4, 6.1

3. **Lesson Rehearsals**: During the term, you will rehearse each of the phases of a mathematics lesson in our mathematics methods class. This will include planning a lesson segment (e.g. the "Launch" phase) and then facilitating the lesson segment with your peers in our methods course. Each rehearsal will include peer assessment, where you use the CalTPA rubric to assess your peers' lesson facilitation.
TPE: 1.6, 1.8, 2.2, 3.3, 3.8, 4.4, 4.7

4. Online problem-solving series: I strongly believe that to be a good mathematics teacher you should be regularly doing mathematics. In particular, as a math teacher it is important to work on challenging problems that push you to engage in mathematical practices and develop content knowledge through building connections, identifying patterns, developing algorithms and generalizing your understandings. This provides you with opportunities to put yourself in your students' shoes and think like a learner. Therefore, as part of this course there will be an online problem-solving series, where you work on open-ended mathematics problems, post your solutions online and then provide your colleagues.

- NOTE: The online problem-solving work will be only graded on whether or not the work was completed. There will be NO grade for whether or not the problem was solved correctly as the intention of the work is not to test your mathematical ability. Rather, the purpose is to develop a community that engages collaborative problem solving. I hope you enjoy this aspect of the course!

TPE: 1.3, 3.1, 4.6, 5.2

5. **Noticing and Wondering about Student Work***:* The second ongoing assignment for this term is designed to support you in looking closely at your students' mathematics work, interpreting what that work

says about a student's understanding, and then making decisions about how to support the student in expanding their mathematical thinking. For this assignment, you will take snap shots of student work or audio record student conversations that you find interesting, describe a specific part of that work and then make a claim about what this evidence says about the student's mathematical understanding.
TPE: 1.5, 3.2, 4.1, 5.2, 5.4, 5.8

GRADING STANDARDS

It is expected that work will be turned in on time and course expectations will be met. Please discuss individual issues with the instructor promptly if extraordinary circumstances prohibit you from turning in assignments on time, going to the practicum sites, or participate in course activities. Points will be deducted if assignments are submitted late (10% penalty per day late). No credit will be awarded if the assignment is 1 week late. Students who wish to revise an assignment must negotiate the requirements of the revision with the instructor.

94 – 100 A	90 – 93 A-
87 – 89 B+	84 – 86 B
80 – 83 B-	77 – 79 C+
74 – 76 C	70 – 73 C-
60 – 69 D	Below 60 F

You are responsible to track your grades and progress in the course by logging in Cougar Course. Attendance will be taken each class.

Assignments	Percentage
Curriculum Mapping	**5%**
Lesson Analysis	**27.5%**
Lesson Rehearsals	**27.5%**
Online Problem-Solving Series	**20%**
Noticing and Wondering About Student Work	**20%**
Total:	**100%**

Final Exam Statement

There will be no final exam.

School of Education/Course Attendance Policy

Due to the dynamic and interactive nature of courses in the School of Education, all candidates (course participants) are expected to attend all classes and participate actively. At a minimum, candidates (course participants) must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the candidate (course participants) have extenuating circumstances, s/he should contact the instructor as soon as possible. *(Adopted by the COE Governance Community, December, 1997).*

You are expected to inform the instructor *prior* to an absence.

Policy on Late/Missed Work

Make *prior arrangements* with the instructor for work to be submitted late.

GENERAL CONSIDERATIONS

CSUSM Academic Honesty Policy

Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All assignments must be original work, clear and error-free. All ideas/material that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated accordingly.

Academic Honesty and Integrity: Students are responsible for honest completion and representation of their work. Your course catalog details the ethical standards and penalties for infractions. There will be zero tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor's attention. The instructor reserves the right to discipline any student for academic dishonesty, in accordance with the general rules and regulations of the university. Disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.

Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

Refer to the full Academic Honesty Policy at:
http://www.csusm.edu/policies/active/documents/Academic_Honesty_Policy.html

Plagiarism

As an educator, it is expected that each candidate (course participant) will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized see the Plagiarism Prevention for Students website http://library.csusm.edu/plagiarism/index.html. If there are questions about academic honesty, please consult the University catalog.

Students with Disabilities Requiring Reasonable Accommodations

Students with disabilities who require reasonable accommodations must seek approval for services by providing appropriate and recent documentation to the Office of Disability Support Services (DSS). This office is in Craven Hall 4300, contact by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours. Alternatively, in order to ensure confidentiality, in a more private setting.

All University Writing Requirement

All CSU students must demonstrate competency in writing skills as a requirement for graduation. At California State University San Marcos, students complete the graduation writing assessment through the All-University Writing Requirement. This requirement mandates that every course at the University must have a writing component of at least 2,500 words (approximately 10 pages). The assignments for this course meet this requirement.

Electronic Communication Protocol

Electronic correspondence is a part of your professional interactions. If you need to contact the instructor, e-mail is often the easiest way to do so. It is my intention to respond to all received e-mails in a timely manner. Please be reminded that e-mail and on-line discussions are a very specific form of communication, with their own nuances and etiquette. For instance, electronic messages sent in all upper case (or lower case) letters, major typos, or slang, often communicate more than the sender originally intended. With that said, please be mindful of all e-mail and on-line discussion messages you send to your colleagues, to faculty members in the School of Education, or to persons within the greater educational community. All electronic messages should be crafted with professionalism and care.

Things to consider:

- Would I say in person what this electronic message specifically says?
- How could this message be misconstrued?
- Does this message represent my highest self?
- Am I sending this electronic message to avoid a face-to-face conversation?

In addition, if there is ever a concern with an electronic message sent to you, please talk with the author in person in order to correct any confusion.