



SCHOOL OF EDUCATION AND
COUNSELING PSYCHOLOGY

Department of Education
MATTC
EDUC 287B (3 units)
Secondary Mathematics Methods II (3 units)
Winter 2024

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Office Hours: Tuesdays, 4-4:45PM or by appointment

Course Meeting Dates: Tuesdays, 5-8 pm; Room GH

Mission and Goals of the Department of Education

Rooted in the Jesuit tradition at Santa Clara University, the mission of the Department of Education is to prepare professionals of competence, conscience, and compassion who will promote the common good as they transform lives, schools, and communities. Our core values of reflective practice, scholarship, diversity, ethical conduct, social justice, and collaboration guide both theory and practice.

Faculty, staff, and students in the Department of Education:

1. Make student learning our central focus
2. Engage continuously in reflective and scholarly practice
3. Value diversity
4. Become leaders who model ethical conduct and a commitment to social justice
5. Seek collaboration with others in reaching these goals

MS/SS Teaching Credential Program Learning Goals (PLGs)

The PLGs represent our commitment to individuals who earn their MS/SS credential at Santa Clara University. The MS/SS faculty focus on ensuring each student will begin their teaching career ready to:

1. Maximize learning for every student.
2. Teach for student understanding.
3. Make evidence-based instructional decisions informed by student assessment data.
4. Improve your practice through critical reflection and collaboration.
5. Create productive, supportive learning environments.
6. Apply ethical principles to your professional decision-making

The PLGs guide our program. Therefore, all MS/SS teaching credential program course objectives are cross-referenced with the PLGs. (A fully elaborated version of the MS/SS PLGs can be found in the Teacher Candidate Handbook, Pre-Service Pathway.)

Course Description

EDUC 288 (Secondary Math Methods II) course is Part 2 of a two-course sequence in secondary mathematics teaching methods. This sequence is designed to provide teacher candidates with a coherent set of experiences for mathematics teaching and learning in secondary schools. Through assigned readings, classroom discussions, content

rich mathematics activities, and assignments that require data collection in your field placement, you will be supported as you make sense of how to approach the profession of teaching. Through thinking about ourselves as teachers, examining classroom culture and structures, facilitating mathematical discussions, and assessing student work, we will set the stage for our development as secondary mathematics teachers.

Course Objectives

This course will develop students' knowledge of or skills with...		Standard/Goals Addressed			
		DG #	PLG #	TPE #	MSSN TPE #
1	Examining knowledge, beliefs, and assumptions about mathematics, teaching, and students, with particular attention to the impact language, culture, socio-economic status, and identified disabilities have had on mathematical learning opportunities.	2	4,6	(6.2) 6.5	
2	Increasing knowledge of mathematics content	1	1	3.1	
3	Increasing theoretical knowledge and practical experience in planning, teaching, and assessing mathematics learning, with particular attention for how modify teaching to meet the needs of diverse learners while maintaining the cognitive demand of tasks.	1,3	1,2,3	1.3,1.6,2.2, 3.4,3.5,4.1	2.4, 3.1, 3.2, 4.4
4	Understanding the mathematical needs of a diverse range of students and adopting an asset-based view of students and families, particularly from populations that have traditionally been positioned as low status in mathematics classrooms.	1,3	1,2,5	1.1,1.6	2.4, 3.1, 3.2, 4.4
5	Understanding the complexities of diverse, multiple-ability classrooms while broadening your repertoire of teaching techniques to engage all students, including students with identified disabilities, in rich, complex, and multi-dimensional mathematics.	2,5	1,5	1.1,1.3,1.6, 2.2,3.5	2.4, 3.1, 3.2, 4.4
6	Learning from experiences in schools through informed reflection	2,4	4	(6.1)*,6.5	
*DG=Department Goals; PLG=Program Learning Goal; TPE=Teaching Performance Expectation Standard; TPA=Teaching Performance Assessment					

*TPEs in ()s denotes continuation from previous course.

Required Texts

Stein & Smith. (2011). *5 Practices for Orchestrating Productive Mathematics Discussions*

Course Requirements/Assignments

Grades are based on a 100-point total. Distribution of points across assignments is as follows:

	Course/Requirements/Assignments	Points	TPE Assessed
1	Classroom Norms Assignment	10	1.1,1.3,1.6,2.2, 3.5,6.5
2	Modifying Task Assignment	30	1.1,1.3,1.6,2.2, 3.4,3.5,4.1,6.1
3	Facilitate Discussion around math and social justice	10	
4	Multidimensional Math Task Assignment	50	1.1,1.3,1.6,2.2, 3.4,3.5,4.1,6.1

1. **Classroom Norms Assignment:** The purpose of this assignment is to reflect on the mathematical culture being established in your classroom. The assignment focuses on:

- The teachers' questions, instructions, and feedback to students
- The role(s) of the students with particular attention to how different subgroups of students are positioned in the mathematics classroom based on background (e.g., linguistic, cultural, socioeconomic, identified disability).
- Opportunities provided for communication, collaboration, etc., and
- The mathematical tasks, and opportunities provided for representation, problem-solving, making connections.

2. **Modifying Task Assignment:** The purpose of the task is to analyze the cognitive demand of an existing routine mathematics task (e.g., warm up or exit ticket), increase the cognitive demand of the task, implement the task with students, and assess student thinking. In modifying the task you will write a set of multi-dimensional learning objectives and identify modifications and supports for ELs and students with identified disabilities that do not lower the cognitive demand of the mathematical task.

3. **Facilitate Discussion on Math and Social Justice:** The purpose of this assignment is to practice having discussions with students about how math relates to social justice. You will identify a relevant current issue and identify the relevant mathematical ideas. Then you will facilitate a brief discussion around the issue.

4. **Multidimensional Math Task Assignment (Signature Assignment):** The purpose of this assignment is to implement a multidimensional mathematical task in placement classrooms. During this assignment teacher candidates will need to design a task that has multiple entry points (e.g., low-floor high-ceiling) and is mathematically rich in nature. Teacher candidates will then implement the task in their placement classrooms and orchestrate a discussion around group's strategies. The teacher candidate will then analyze student work and adjust instruction accordingly. Key skills developed during this task include:

- Writing multi-dimensional and assessable learning objectives for students
- Identifying modifications and supports for English Learners and students with identified disabilities that do not lower the cognitive demand of the mathematical task.

- Designing formative assessments linked to learning objectives and student interests
- Designing criteria for assessing student work in relation to the learning objectives.
- Making sense of students' written mathematical work on an assessment
- Adjusting instruction based on principles of formative assessment
- Analytically reflect on teaching practice

Assessments & Grading Criteria

1. All written and oral assignments must reflect graduate-level standards. As a future teacher, you must be able to model communication skills for your students.
2. Attendance and participation in all class meetings is required. If you are going to be absent from class, you must email or call me to inform me of your absence. You will still be responsible for all missed content and in-class work.
3. Letter grades are assigned on the standard scale based upon a possible total of 100 points.

A	94-100	C+	77-79
A-	90-93	C	74-76
B+	87-89	C-	70-73
B	84-86	D+	67-69
B-	80-83	D	63-66

4. Assignments done in pairs, both partners will receive the same grade, unless otherwise stated.
5. Final grades will reflect students' contributions (e.g., attendance, class discussions, quality of presentation, ability to lead discussion groups, completion and quality of course assignments), critical thinking and ability/degree to which student integrates theory, research and practice.
6. All assignments are expected on their due dates in the room where our class meets. I cannot be responsible for papers submitted at other times or in other formats. Unless we have made special arrangements beforehand, late assignments will be docked 3 points for each day past the due date that they are submitted.

Regular attendance at all class meetings is a requirement in this program. Ten points will be deducted from your final grade for the course for each class session you missed. Each of you will be granted one Emergency Release (ER) per course. Your ER excuses you from one class session with half the grade penalty (loss of 5 points instead of 10). To use your ER you must notify me by email or phone BEFORE class. Save your ER for medical issues, family demands, car trouble, etc.

Students will not be penalized for absences due to the observance of religious holidays that fall on our scheduled class day; please give me advance notice of these absences so I can make the necessary accommodations. All other absences are unexcused and will affect your grade.

Punctuality. Coming to class (and returning from breaks) on time is another course requirement. Your first lateness will be excused; your second lateness will cause 1 point to be deducted from your final course grade; your third lateness will cause an additional 4 points to be deducted. More than three late arrivals indicate a serious problem; this situation will be dealt with at the instructor's discretion. Attendance and punctuality are the only policies with the immediate potential to impact your course grades. Your instructor through ongoing observation and documentation gathers data documenting your adherence to the remaining policies listed here.

If an instructor has reason to feel you are not meeting all the expectations spelled out below, s/he will contact you privately to discuss the issue, to clarify the expectations as needed, and to offer his/her support in helping you reach those expectations. If your instructor does not contact you with a concern, you can assume you are satisfying these requirements. However, if you would like specific feedback on your professional conduct during the quarter, you are welcome to contact your instructor at any time and s/he will be glad to share his/her assessment with you.

As we will read about and study in this course, everyone's learning is enhanced by the quantity and quality of the interactions in the learning environment. Hence, your participation in whole class discussions, group work and pair group is essential for the success of this course.

While a class is in session, you should not engage in any activity not directly related to what is taking place in the classroom. Instructors reserve the right to ask you to close your laptop or put away some other form of technology at their discretion; when/if this occurs, please respond quickly and without protest to avoid further disruption of the class's learning. Instructors also reserve the right to ignore your inappropriate use of technology in class and simply deduct points from your final grade. If you would like more detailed clarification about the expectations regarding appropriate and inappropriate in-class technology use, please feel free to contact your instructor for further information.

Note: Points lost due to poor attendance and/or lack of punctuality will be deducted from your final grade. A student with excellent grades on assignments and other aspects of professional conduct can earn a poor course grade as a result of excessive absence or chronic lateness.

Canvas/Camino Course Management System

To access course materials and participate in On-line activities, please be sure to review Canvas (also known as Camino). Reminders, tools, readings and assignment descriptions will be made available through this on-line course management system. Your SCU username and password gets you access to Canvas.

Disability Accommodations Procedure

If you have a disability for which accommodations may be required in this class, please contact Disabilities Resources, Benson 216, <http://www.scu.edu/disabilities> as soon as possible to discuss your needs and register for accommodations with the University. If you have already arranged accommodations through Disabilities Resources, please discuss them with me during my office hours. Students who have medical needs related to pregnancy may also be eligible for accommodations.

While I am happy to assist you, I am unable to provide accommodations until I have received verification from Disabilities Resources. The Disabilities Resources office will work with students and faculty to arrange proctored exams for students whose accommodations include double time for exams and/or assisted technology. (Students with approved accommodations of time-and-a-half should talk with me as soon as possible). Disabilities Resources must be contacted in advance to schedule proctored examinations or to arrange other accommodations. The Disabilities Resources office would be grateful for advance notice of at least two weeks. For more information, you may contact Disabilities Resources at 408-554-4109.

Accommodations for Pregnancy and Parenting

In alignment with Title IX of the Education Amendments of 1972, and with the California Education Code, Section 66281.7, Santa Clara University provides reasonable accommodations to students who are pregnant, have recently

experienced childbirth, and/or have medically related needs. Pregnant and parenting students can often arrange accommodations by working directly with their instructors, supervisors, or departments. Alternatively, a pregnant or parenting student experiencing related medical conditions may request accommodations through Disability Resources.

Discrimination and Sexual Misconduct (Title IX)

Santa Clara University upholds a zero-tolerance policy for discrimination, harassment and sexual misconduct. If you (or someone you know) have experienced discrimination or harassment, including sexual assault, domestic/dating violence, or stalking, I encourage you to tell someone promptly. For more information, please consult the University's Gender-Based Discrimination and Sexual Misconduct Policy at <http://bit.ly/2ce1hBb> or contact the University's EEO and Title IX Coordinator, Belinda Guthrie, at 408-554-3043, bguthrie@scu.edu. Reports may be submitted online through <https://www.scu.edu/osl/report/> or anonymously through Ethicspoint <https://www.scu.edu/hr/quick-links/ethicspoint/>

Academic Integrity

The University is committed to academic excellence and integrity. Students are expected to do their own work and to cite any sources they use. A student who is guilty of dishonest acts in an examination, paper, or other required work for a course, or who assists others in such acts, will receive a grade of F for the course. In addition, a student guilty of dishonest acts will be immediately dismissed from the University. Students that violate copyright laws, including those covering the copying of software programs, or who knowingly alter official academic records from this or any other institution, are subject to disciplinary action (ECP Graduate Bulletin, 2013-2014).

Course Outline & Class Schedule

**Course Plan Subject to Change*

Course Meeting	Course Topics	Course Readings	Course Assignments
Session 1 1/9	Classroom Norms & Culture	In class readings: <ul style="list-style-type: none"> ● Kazemi, E. (1998). Discourse that promotes conceptual understanding. <i>Teaching Children Mathematics</i>, 4(7), 410 - 414. ● Boaler. (2014). Positive Classroom Norms. youcubed.org ● Boaler (2024). What I wish.... 	Assignment: Classroom Norms Assignment
Session 2 1/16	Modifying Tasks	<ul style="list-style-type: none"> ● Review: Stein, M. K., Smith, M. S., Henningsen, M. A., & Silver, E. (2000). Implementing standards-based mathematics instruction. (Cognitive Demand) Introduction and Ch 1&2. 	Due by 11pm 1/15: Norms Assignment Assignment: Modification of Task Assignment
Session 3 1/23	Lesson Planning & Assessing Mathematical Proficiency	<ul style="list-style-type: none"> ● Smith et al. (2008). Thinking through a lesson. <i>Mathematics Teaching in Middle School</i>. ● Andrade, H. (2000). Using rubrics to promote student learning. ACSD. ● Review slides on lesson objectives/goals 	
Session 4 1/30 (asynchronous online session)	The Role of Technology	<ul style="list-style-type: none"> ● NCTM. (2021). Equitable Integration of Technology for Mathematics Learning (2 paragraphs) ● Gee, J. (2007). Good video games and good learning. 	Due by 11pm Monday 1/29: Modification of Task Assignment Assignment: Complex/Multi-dimensional Task

Session 5 2/6	Lesson Planning (Part II) Complex Tasks	<ul style="list-style-type: none"> • Jackson, K. J., Shahan, E., Gibbons, L., & Cobb, P. (2012). Setting up complex tasks. <i>Mathematics Teaching in the Middle School</i>, (January), 1–15. • Review Universal Design Framework: https://udlguidelines.cast.org/ • 	Due in class 2/13: Copy/Draft of Complex/Multi-dimensional Task
Session 6 2/13	Supporting Discourse in Math Class (Part I) Launching Tasks	<ul style="list-style-type: none"> • Chapin et al., (2003). The Tools of Classroom Talk. Ch 2 Review: Herbel-Eisenmann & Breyfoyle – Questioning our pattern of questioning (2005) 	Due by 11pm Sunday 2/18: Draft of Multidimensional Task Lesson Plan
Session 7 2/20 (asynchronous online session)	Teaching for Social Justice	<p>You will be assigned one reading:</p> <ul style="list-style-type: none"> • Rethinking Mathematics. Chapter 1. • TODOS. Mathematics Education through the lens of social justice. 	Assignment: Data talk assignment
Session 8 2/27	Supporting Discourse in Math Class (Part II) Assessment Revisited Individual Meetings w/Kathy	<ul style="list-style-type: none"> • See Week 7 readings 	

<p>Session 9 3/5 (Zoom Session)</p>	<p>Status Revisited</p>	<ul style="list-style-type: none"> • Lambert, R. (2018) “Indefensible, Illogical, and Unsupported”: Countering Deficit Mythologies about the Potential of students with Learning Disabilities in Mathematics. • Review: Cohen, E. & Lotan, R. (1999). Complex instruction: Equity in cooperative learning classrooms (from EDUC 287A) 	<p>Due by 11pm Monday 3/4: Data talk assignment</p>
<p>Session 10 3/12</p>	<p>History of Learning in Math Education & Learning from Practice</p>	<ul style="list-style-type: none"> • Lambdin, D., & Walcott, C. (2007). Changes through the years: Connections between psychological learning theories and the school mathematics curriculum. 	<p>Due by 11pm Friday 3/15: Multidimensional Task Assignment final write up.</p>