

EDUC 263E: Quantitative Reasoning and Mathematics I
Pre-Fall 2025

1:30-4:30pm
Ellis Elementary School
Room B114

Instructor: Prof. Jennifer Osuna
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Course Objectives:

The EDU263E (Quantitative Reasoning and Mathematics I) course is Part 1 of a 3-course sequence in elementary mathematics teaching methods. This sequence is designed to provide teacher candidates with a coherent set of experiences for mathematics teaching and learning in elementary schools. By doing mathematics together and discussing various research-based readings, video cases of teaching and learning, and data from your classroom field placements, you will begin to develop a pedagogical tool-kit and make sense of how to approach the profession of teaching.

Please note: While we will generally adhere to the syllabus, we are sensitive and responsive to the needs of the class; therefore, specific readings and activities are subject to change.

Course Assignments:

Assignment	Due Date
<i>Mathography Assignment</i> Write a narrative reflection on your past and present experiences as a math learner and how these experiences shape your identity and beliefs as a teacher. (See specifics in Canvas, upload to Canvas and bring to class)	July 8 at 1 pm
<i>Student Mathstory Assignment</i> Interview a student from your placement about their experiences as a math learner and write about what they shared. (See specifics in Canvas, upload to Canvas and bring to class).	Suggested due date: Aug 5, firm due date Sept 19 at 1 pm
<i>Implement a Number Talk or Dot Talk in your Placement</i> (See row below and assignment in Canvas)	7/08-8/19
<i>Number Talk Assignment</i> Plan, facilitate, and reflect on a number talk with a small group or with the whole class in your Summer Explorations class.(See specifics in Canvas, upload to Canvas and bring to class).	Sept 2 at 1 pm
<i>Deep Read</i> In teams, deeply read one of the assigned articles from the Deep Read set. Prepare a short (10-15 minute) presentation on the key ideas. Be prepared for facilitate small group discussion on your article with the rest of the class.	Via Sign-up sheet

Readings & Participation:

Assigned readings and other out-of-class tasks (for example, collecting classroom artifacts from your placement) should be completed *before class*. Classroom activity each week is *dependent* on all students coming to class prepared to engage in exploration and discussions. The success of the course is enhanced when everyone reads carefully and fully participates in class activities.

Course Grades:

Course grades will be based on participation in and completion of in-class and out-of-class activities and assignments, as well as attendance and punctuality.

Course Readings:

California Mathematics Framework (2023). <https://www.cde.ca.gov/ci/ma/cf/>

Gutiérrez, R.(2009). Framing equity: Helping students “play the game” and “change the game”. *Teaching for excellence and equity in mathematics* 1, no. 1

Moschkovich, J. (1999). Supporting the participation of English language learners in mathematical discussions. *For the learning of mathematics*, 19(1), 11-19.

Turner, E., Dominguez, H., Maldonado, L., & Empson, S. (2013). English learners' participation in mathematical discussion: Shifting positionings and dynamic identities. *Journal for Research in Mathematics Education*, 44(1), 199-234.

Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2013). *Elementary and middle school mathematics: Teaching developmentally* (8th ed.). New York: NY: Pearson.

Zager, T. J. (2023). *Becoming the math teacher you wish you'd had: Ideas and strategies from vibrant classrooms*. Routledge.

Note: If you wish to purchase either the Van de Walle or Zager text, they are available through the Stanford Bookstore, Amazon and other sellers. Copies are also on reserve at Cubberley Library. All readings for summer will be accessible through the Canvas website <https://canvas.stanford.edu>. Assignments will also be submitted through Canvas.

Students with documented disabilities:

Students who may need academic accommodations based on the impact of a disability must initiate the request with the Student Disability Resource Center (SDRC) located within the Office of Accessible Education (OAE). SDRC staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an *Accommodation Letter* for faculty dated in the current quarter in which the request is being made. Students should contact the SDRC as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 650-723-1066, 650-723-1067 TTY).

At a Glance Summary

Date	Topics and In-Class Activities	Readings to do before class	Due
Class 1 July 1	Introduction to the Course <i>Content Focus:</i> How Much is a Billion?		

	<i>Equity Focus:</i> Good math tasks increase learning opportunities for all students and support positive math identities.		
Class 2 July 8	<i>Content Focus:</i> What is math? <i>Equity Focus:</i> Reflecting on your experiences with math as a student prepares you to support positive math identities in your students.	(optional read ahead) Moskovitch: Supporting Multilinguals	Mathography assignment (Due in canvas and bring to class)
Class 3 July 15	<i>Content Focus:</i> Number Sense <i>Equity Focus:</i> Honoring a range of student thinking and communicating prepares you to teach all students and support positive math identities. (tie to UDL)	VDW Ch Ch 8: Developing Early Number Concepts	Deep Read group presentation
Class 4 July 22	<i>Content Focus:</i> Operations <i>Equity Focus:</i> Curiosity as an ethical responsibility. We owe it to children to deem their ideas worthy of our curiosity, which requires openness.	VDW Ch 9: Operations	
Class 5 July 29	<i>Content Focus:</i> Geometry and Measurement <i>Equity Focus:</i> Understanding children's strategies as part of a developmental process enables a focus on growth.	VDW, <i>either</i> Ch 19: Measurement or Ch 20: Geometric Thinking (optional read ahead) Turner: Positioning Multilinguals	
Class 6 Aug 5	<i>Content Focus:</i> Fractions <i>Equity Focus:</i> Positioning students with competence orient them toward opportunities	VDW, Chapter 15: Developing Fraction concepts	(Suggested) Student Math Interview

	for both learning and identifying with mathematics.	(optional read ahead) Gutiérrez: Framing Equity	Deep Read group presentation
	<i>No class August 12</i>		
Class 7 Aug 19	<i>Content Focus:</i> Rational Numbers <i>Equity Focus:</i> “Equity is ultimately about the distribution of power- power in the classroom, power in future schooling, power in one’s everyday life, and power in a global society.” - Gutiérrez, 2002	VDW, Chapter 17: Developing Concepts of Decimals and Percents	(Hard Deadline) Student math interview Deep Read group presentation
	<i>No class August 26</i>		
Class 8 Sept 2	<i>Content Focus:</i> Mathematical Progressions Equity Focus: Students’ mathematical identities are shaped largely by in class experiences, which requires intentional decision making from the teacher every day.		Number Talk assignment