

# EDUC 263F: Quantitative Reasoning and Mathematics II

Stanford University, Fall 2021

Thursdays, 3:15 - 6:15 pm in CERAS 204

**Instructor: Miriam Leshin**  
email: [mleshin@stanford.edu](mailto:mleshin@stanford.edu)  
Office Hours: By appointment

**Instructor: James Malamut**  
email: [jmalamut@stanford.edu](mailto:jmalamut@stanford.edu)  
Office Hours: By appointment

## Course Objectives:

The EDU263F (Quantitative Reasoning and Mathematics II) course is Part 2 of a three-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. 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 and examining classroom activity, we will set the stage for our development as elementary mathematics teachers.

*Please note:* We will adhere to the syllabus as much as possible. However, we are sensitive to the needs of the class, therefore, the syllabus is subject to change.

## Course Assignments:

Assignment	Due Date
<i>Lesson Plan</i> Components of the plan due Class 3 - 9 (see summary below) A full draft of the LP is due on canvas and in class on Nov 4. A revised LP is due on canvas and in class on Nov 18.	Draft LP: Nov 4 Revised LP: Nov 18
<i>Readings</i> Assigned readings should be done before class.	Before every class
<i>Participation</i> Our whole-class learning is enhanced when everyone reads carefully and fully participates in class activities and discussions.	Every class

### **Course Grades:**

Our expectation is that everyone will receive an A grade. If your work – including the quality of your participation and Lesson Plan assignment – is not at that standard we will discuss ways to improve it and you will have the opportunity to revise and resubmit. Our goal is learning, not evaluation.

Regarding participation, we are looking for you to contribute to both small and whole group discussions. Whether you are more talkative or more introverted in nature, we expect that you make concerted efforts to both listen and contribute, monitoring your level of sharing, and making space for others to join in. We recognize that you may have more to say about one topic over another, but across the nine weeks, we should have heard your thoughts and ideas in both small and whole group discussions and those ideas should be connected in some way to our shared readings. This will help your learning as well as the learning of the group.

### **Course Readings:**

Jackson, K. J., Shahan, E. C., Gibbons, L. K., & Cobb, P. A. (2012). Launching complex tasks. *Mathematics Teaching in the Middle School*, 18(1), 24-29.

Kazemi, E., & Franke, M. L. (2004). Teacher learning in mathematics: Using student work to promote collective inquiry. *Journal of mathematics teacher education*, 7(3), 203-235.

Louie, N. L. (2018). Culture and ideology in mathematics teacher noticing. *Educational Studies in Mathematics*, 97(1), 55-69.

Martin, D. B. (2015). The collective Black and principles to actions. *Journal of Urban Mathematics Education*, 8(1).

Smith, M. S., & Stein, M. K. (2018). *5 practices for orchestrating productive mathematical discussions*. Reston, VA: National Council of Teachers of Mathematics.

Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2010). *Elementary and middle school mathematics: Teaching developmentally* (10th ed.). New York: NY: Pearson.

**Note:** If you wish to purchase Van de Walle, it is available through the Stanford Bookstore, Amazon and other sellers. Copies are also on reserve at Cubberley Library. All readings for Fall will be accessible through the Canvas website <https://canvas.stanford.edu>. Assignments will also be submitted through this site.

**Students with documented disabilities:**

Students who may need an academic accommodation 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**

<b>Date</b>	<b>Pedagogy, Content, &amp; Equity Foci</b>	<b>Readings</b>	<b>Due</b>
Class 1 <b>Sept 23</b>	<i>Pedagogy Focus:</i> Student Practices, Teacher Practices  <i>Content Focus:</i> Standards for Mathematical Practice  <i>Equity Focus:</i> Practices for Whom?	VDW Chapter 1  5PFOPMD - Intro & Ch 1  Martin	
Class 2 <b>Sept 30</b>	<i>Pedagogy Focus:</i> Lesson structure - goals, tasks, & launches  <i>Content Focus:</i> Standards for Mathematical Practice (continued)  <i>Equity Focus:</i> “Why do we need to know this?”	5PFOPMD - Ch 2  Kokka  Optional: Jackson	
Class 3 <b>Oct 7</b>	<i>Pedagogy Focus:</i> Anticipating and monitoring students’ thinking  <i>Content Focus:</i> Number Sense  <i>Equity Focus:</i> No such thing as a misconception	VDW, Ch 8 Number Sense  5PFOPMD - Chapter 4	Set a goal and select a task
Class 4 <b>Oct 14</b>	<i>Pedagogy Focus:</i> Monitoring students’ thinking (continued)  <i>Content Focus:</i> Whole number operations  <i>Equity Focus:</i> Monitoring our monitoring	VDW, Ch 12 Addition/Subtraction OR Ch 13 Multiplication/Division  Louie	Plan launch for task

Class 5 <b>Oct 21</b>	<p><i>Pedagogy Focus:</i> Selecting &amp; sequencing students' work</p> <p><i>Content Focus:</i> Fractions, Decimals, &amp; Percents</p> <p><i>Equity Focus:</i> Sequencing for what?</p>	<p>VDW, Ch 15 Fractions OR Ch 17 Decimals/Percents</p> <p>5PFOPMD - Chapter 5</p>	Plan explore
Class 6 <b>Oct 28</b>	<p><i>Pedagogy Focus:</i> Connecting students' ideas</p> <p><i>Content Focus:</i> Measurement</p> <p><i>Equity Focus:</i> To understand and be understood</p>	<p>VDW, Ch 19 Measurement</p> <p>5PFOPMD - Chapter 6</p>	Plan synthesis
Class 7 <b>Nov 4</b>	<p><i>Pedagogy Focus:</i> Rehearsal of lesson plan</p> <p><i>Content Focus:</i> Geometry</p> <p><i>Equity Focus:</i> Becoming the teachers we aspire to be through community</p>	<p>VDW, Ch 20 Geometry</p> <p>5PFOPMD - Chapter 3</p>	Full draft of lesson plan
Class 8 <b>Nov 11</b>	<p><i>Pedagogy Focus:</i> Student work analysis</p> <p><i>Content Focus:</i> Data Analysis</p> <p><i>Equity Focus:</i> Driven by student thinking</p>	<p>VDW, Ch 21 Data Analysis</p> <p>Kazemi &amp; Franke</p>	Bring in student work from piloted lesson
Class 9 <b>Nov 18</b>	<p><i>Pedagogy Focus:</i> Revision of lesson</p> <p><i>Content Focus:</i> TBD based on student interests</p> <p><i>Equity Focus:</i> Changing the game</p>	<p>TBD based on student interests</p>	Revised lesson plan