

Course Information

EDUC 263C: Curriculum and Instruction in Mathematics (3 units)

Winter 2024

Tuesdays, 3:15 pm - 6 pm

CERAS 302

Primary Instructor: Jesse Ramirez

You may call me “Jesse” in writing and when we talk.

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Office Hours by appointment (email me to set up a time)

Primary Instructor: Marjorie Hahn (she/her pronouns)

Feel free to call me “Margie” in writing and when we talk!

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Course Overview/Goals

This is the third of a three-course sequence focused on mathematics teaching and learning. The course sequence is designed to create an opportunity for sustained learning and professional growth. Our goals for the year are to help you:

- Increase your knowledge of mathematics and mathematics pedagogy
- Examine your own knowledge, beliefs, and assumptions about mathematics, teaching, and students
- Increase your theoretical knowledge and practical experiences in planning, teaching, and assessing mathematics
- Understand the mathematical needs of a diverse range of students
- Understand the complexities of diverse, multi-ability classrooms while broadening your repertoire of teaching strategies
- Learn from your experiences in schools through informed reflection

This quarter we will continue to develop skills in lesson planning and will focus on how particular lessons fit into larger instructional learning segments. We will draw upon what we have learned to design learning segments and individual lessons centered on equity. The experience of developing and refining a segment of instruction is the cornerstone of our work this quarter, and it will prepare you for success on [edTPA](#), the culminating performance assessment of your teaching proficiency in the spring. You will submit pieces of this learning segment often this quarter and there will be frequent portions of class time dedicated to workshopping its parts.

Course Materials

Technology: All course details and materials will be posted on our Canvas course site. You will need to have access to a device that connects to the internet so that you can access email and Canvas. Students should bring their STEP-provided iPad or another device to each class session.

Readings: All course readings will be posted electronically to Canvas at the beginning of the quarter, so you have the choice to print them free of charge in CERAS if desired.

Coursework and Grading

We expect you to come to class having completed the reading and assignments due for that day and to be prepared to participate in class discussions and activities. This means that you have a clear idea of the main points; you may have formulated some questions; and/or you have noted any related issues that the reading or topic raised for you. On some days we may ask you to respond to the article and engage with your peers in the discussion section of Canvas.

Regarding participation, we are looking for you to contribute to small and whole group discussions in class and online 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 9 classes, we should have heard your thoughts and ideas in both small and whole group discussions and online. This will help your learning as well as the learning of the group.

Your participation depends upon your timeliness in attendance. If for any reason, you will miss or be late to class, please email the instructors ahead of time.

Throughout the quarter, you will be required to complete several assignments (see Major Winter Assignments), conduct readings (see Winter Course Schedule), and complete classroom tasks, which will be described during class. Our expectation is that everyone will receive an A grade. If your work – including the quality of your participation and major assignments – is not at that standard we will discuss ways to improve it.

Major Winter Assignments

What:	When:	Where:	Details:
Assessment and Evaluation Criteria	Tuesday, 2/13	Bring to Class	During week 6 (on 2/13), we will take some time to analyze an assessment that you will use to evaluate your students' developing knowledge and skills.
Class Facilitation / Rehearsal	Tuesday, 2/27 or 3/5	Bring to Class	During weeks 8 and 9 (on 2/27 and 3/5), we will take turns facilitating a mathematics task using the 5 Practices Framework. You will have the option to do this individually or with a partner.
Video Clip Analysis	Tuesday, 3/12	Bring to Class	During week 10 (on 3/12), we will take some time to analyze student reasoning in your classrooms using video records. You will select a 3-minute video clip from one of your video observations. This clip should address either rubric 6, 7, 8, or 9 of the edTPA. You do not need to be in the clip, but it's fine if you are.
EdTPA Task 1: Planning Assignment	Sunday, 3/17 by 10 pm	Upload to Canvas	See the linked assignment sheet for details.

Winter Course Schedule (Part 1)

Date	Readings for Class
1/9	Session 1: The Strands of Mathematical Proficiency and Building Procedural Fluency
	<p>National Research Council (2001). The Strands of Mathematical Proficiency. In J. Kilpatrick, J. Swafford, & B. Findell (Eds.), <i>Adding It Up: Helping Children Learn Mathematics</i> (pp. 115-155). Washington, DC: National Academy Press.</p> <p>Bay-Williams, J. M. & Stokes-Levine, A. (2017). Teaching to Build Procedural Fluency. In D. A. Spangler & J. J. Wanko (Eds.), <i>Enhancing Classroom Practice with Research behind Principles to Action</i> (pp. 61-72). Reston, VA: National Council of Teachers of Mathematics.</p>
1/16	Session 2: Considering Evidence of Learning and Setting Goals
	<p>Tomlinson, C. A., & McTighe, J. (2006). Considering Evidence of Learning in Diverse Classrooms. In <i>Integrating Differentiated Instruction & Understanding by Design: Connecting Content and Kids</i> (pp. 59-82). Alexandria, VA: Association for Supervision and Curriculum Development.</p> <p>Stein, M. K. & Meikle, E. (2017). The Nature and Role of Goals in and for Mathematics Instruction. In D. A. Spangler & J. J. Wanko (Eds.), <i>Enhancing Classroom Practice with Research behind Principles to Action</i> (pp. 1-11). Reston, VA: National Council of Teachers of Mathematics.</p>
1/23	Session 3: Introduction to the 5 Practices Framework
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). How Do I Help My Students Talk About Math and Share Their Thinking?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 100-125). Thousand Oaks, CA: Corwin Press.</p> <p>Optional: Smith, M. S., Steele, M. D., & Sherin, M. G. (2020). Introduction; Setting Goals and Selecting Tasks. In <i>The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom</i> (pp. i-47). Thousand Oaks, CA: Corwin Press.</p>
1/30	Session 4: Anticipating Student Responses
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). Introduction; How Do I Build a Math Community?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 1-34). Thousand Oaks, CA: Corwin Press.</p> <p>Optional: Smith, M. S., Steele, M. D., & Sherin, M. G. (2020). Anticipating Student Responses. In <i>The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom</i> (pp. 48-83). Thousand Oaks, CA: Corwin Press.</p>
2/6	Session 5: Monitoring Student Work
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). How Do I Structure, Organize, and Manage My Math Class?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 36-65). Thousand Oaks, CA: Corwin Press.</p> <p>Optional: Smith, M. S., Steele, M. D., & Sherin, M. G. (2020). Monitoring Student Work. In <i>The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom</i> (pp. 84-119). Thousand Oaks, CA: Corwin Press.</p>

Winter Course Schedule (Part 2)

Date	Readings for Class
2/13	Session 6: Selecting and Sequencing Student Solutions
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). How Do I Engage My Students in Math?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 66-99). Thousand Oaks, CA: Corwin Press.</p> <p>Optional: Smith, M. S., Steele, M. D., & Sherin, M. G. (2020). Selecting and Sequencing Student Solutions. In <i>The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom</i> (pp. 120-169). Thousand Oaks, CA: Corwin Press.</p>
2/20	Session 7: Connecting Student Solutions
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). How Do I Know What My Students Know, and Can Use That Information to Plan and Move Forward?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 126-141). Thousand Oaks, CA: Corwin Press.</p> <p>Optional: Smith, M. S., Steele, M. D., & Sherin, M. G. (2020). Connecting Student Solutions; Looking Back and Looking Ahead. In <i>The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom</i> (pp. 170-224). Thousand Oaks, CA: Corwin Press.</p>
2/27	Session 8: Developing Student Agency and Supporting Productive Struggle
	<p>Gutstein, E. (2007). “And That’s Just How It Starts”: Teaching Mathematics and Developing Student Agency. <i>Teachers College Record</i>, 109(2), 420-448.</p> <p>Peterson, B. E. & Viramontes, R. (2017). Key Questions to Guide Teachers in Supporting Productive Struggle in Learning Mathematics. In D. A. Spangler & J. J. Wanko (Eds.), <i>Enhancing Classroom Practice with Research behind Principles to Action</i> (pp. 73-87). Reston, VA: National Council of Teachers of Mathematics.</p>
3/5	Session 9: Student-Centered Instruction
	<p>Reinhart, S. C. (2000). Never Say Anything a Kid Can Say!. <i>Mathematics Teaching in the Middle School</i>, 5(8), 478-483.</p> <p>Jacobs, V. R., Martin, H. A., Ambrose, R. C., & Philipp, R. A. (2014). Warning Signs!. <i>Teaching Children Mathematics</i>, 21(2), 107-113.</p>
3/12	Session 10: Collaborating on Instruction
	<p>Dillon, F. L., Perry, A. D., Cheng, A., & Outzs, J. (2022). Where Do I Go From Here?. In <i>Answers to Your Biggest Questions About Teaching Secondary Math</i> (pp. 142-157). Thousand Oaks, CA: Corwin Press.</p> <p>Berry III, R. Q. & Berry, M. P. (2017). Professionalism: Collaborating on Instruction. In D. A. Spangler & J. J. Wanko (Eds.), <i>Enhancing Classroom Practice with Research behind Principles to Action</i> (pp. 153-161). Reston, VA: National Council of Teachers of Mathematics.</p>

Course Policies

Submitting to Canvas

All assignments should be digitally submitted to Canvas as a single file unless otherwise specified by the instructors. You may choose to submit a Word document or a link to a [shared](#) Google document. Be sure to change the permissions to “anyone in Stanford University with the link [can comment](#)” on Google Docs before submission in order to avoid a late penalty. All feedback will be provided digitally within your submitted documents in Canvas.

Please save all files using the following naming convention:

Lastname_Assignment

For example: Hahn_Norms Assignment

Deadlines and Late Submissions

Assignment deadlines are listed in the course schedule, along with estimated times of completion, to enable you to effectively plan and balance your academic work and other commitments. Despite the best planning, however, we know that life happens! So:

- Please contact us in advance if you have any concerns about completing major assignments on time. Extensions may be granted by your instructors if requested.
- Late work that is submitted without an extension may be subject to a grade penalty.
- As with all of your work in C&I this year, you may revise and resubmit any written assignment for a higher grade.
- Do your best to complete readings such that you can be an active participant in the next class session! If the reading is longer or more academic in nature, find the most salient parts or pieces that stand out to you.

The Honor Code

All Stanford students are expected to follow the Stanford Honor Code and Fundamental Standard, as noted in the STEP Handbook and Stanford Student Guide. Please review [Stanford's Honor Code](#), [these recommendations](#) from the Office of Community Standards, and [documentation and citation resources](#) from the Hume Center for Writing and Speaking.

Academic Accommodations

Stanford is committed to providing equal educational opportunities for disabled students. Disabled students are a valued and essential part of the Stanford community. We welcome you to our class.

If you experience a disability, please register with the Office of Accessible Education (OAE). Professional staff will evaluate your needs, support appropriate and reasonable accommodations, and prepare an Academic Accommodation Letter for faculty. To get started or to re-initiate services, please visit oae.stanford.edu.

If you already have an Academic Accommodation Letter, we invite you to share your letter with us. Academic Accommodation Letters should be shared at the earliest possible opportunity so we may partner with you and OAE to identify any barriers to access and inclusion that might be encountered in your experience of this course.

Learning Resources

Your peers and instructors are valuable sources of learning, and we hope you will make the most of our time together! In addition, Stanford has a wealth of resources for graduate students, from group study halls to well-being coaches to professional development offerings. Which of the resources below will you explore?

- [Writing tutors](#) from the Hume Center for Writing and Speaking, to get additional feedback on your teaching portfolio materials
- [English as a Second Language \(ESL\) courses](#) for international graduate students
- [Pedagogy workshops and programs](#) from the Center for Teaching and Learning (CTL), to continue your teaching development
- [IDEAL Pedagogy](#) self-paced course, learning community, and/or syllabus consultation from CTL, to continue developing inclusive pedagogy practices
- [Peer Academic Coaching](#) from CTL, to help with time management and other work strategies
- [Study Halls](#) from CTL, to work in quiet companionship with other students
- [Grad Grow](#) from the Office of the Vice Provost for Graduate Education, to develop key professional competencies, including in teaching and mentorship
- [Well-being coaches](#) from Vaden, to receive holistic support and guidance