

MAE 520
Methods and Materials for Teaching Secondary School Math

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Edmodo: <https://edmo.do/j/rvdi7s>

Spring 2016, Tu/Th 4 - 5:20

Office: 5-125b

Office hours: Tentatively Tu 3:20-4, Th 5:20-6:10, and by appointment

This is a course in the theory and practice of teaching mathematics at the secondary level. We will use our understanding of how students learn mathematics to create effective and engaging lessons, units, and assessments that will empower students to engage in mathematics. We will explore and practice using a variety of teaching strategies in our efforts to differentiate our instruction to engage various types of learners.

Course Expectations and Grades

Course grades will be tentatively determined by the following. More specific details on due dates, expectations, and grading rubrics will be given during the semester.

- Electronic journal: 20%
 - o Maintain an electronic journal that you use to record your reflections each week, based on class discussion and readings. (At least one page per week, single spaced, 12 font)
 - o Specific journal prompts may be posted on Edmodo and must be included in that week's reflection.
 - o Will be collected electronically (through Edmodo) at least three times during the semester.
 - o Will be graded using the rubric posted on Edmodo.

- Active member of a community of learning: 20%
 - o Be present, on time, to each class; missing more than two classes will result in a significant grade reduction.
 - o Be actively engaged in all class discussions, including your peers' presentations. All assigned readings must be carefully completed before class, so that you are ready to thoughtfully discuss them.
 - o After each of your peers' lessons, you will complete the homework assignment they created and give them constructive, critical feedback to help them improve their practice.

- Lesson plans and presentations: 20%
 - o Plan and present lessons to your peers.
 - o Create and implement a HW assignment as assessment.
 - o Reflect on your lesson and demonstrate that you acted on the feedback you received from your peers and instructor.

- Collaborative unit plan: 20% (group grade)
 - o You will submit a complete unit plan as part of a lesson planning group with your peers, to include outlines of at least 8 lessons (and 2 detailed lesson plans: first lesson and one middle lesson) demonstrating a variety of pedagogical strategies, a constructivist approach toward teaching and learning, an understanding of how to sequence and scaffold a unit, and attention to differentiating instruction for students with various special needs. Your unit plan will also include a culminating assessment, and explain how you will informally assess students throughout the unit.

- Final, individual unit plan: 20%
 - o You will submit an individual unit plan as a final assignment, due at the end of semester. The requirements will be similar to your collaborative unit plan. You will also give a 10-15 minute presentation of your final unit plan.

Also be sure that you are familiar with the PEP (Professional Education Program) requirements, as outlined here: <http://www.stonybrook.edu/pep/guide/requirement.shtml>

Required Resources

- Sigler, J. and Hiebert, J. (1999) *The Teaching Gap*
- Grades 6-8 and grades 9-12 NYS Common Core Mathematics Curricula (bring hard copies to class)
- A graphing calculator (or computer program capable of graphing)

Disability Support Services (DSS) Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>]

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management Statement:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

I am looking forward to a great semester!

