Methods of Teaching Mathematics in the Secondary School
Math 406B, Fall 2014
Tuesday and Thursday 2:00 – 3:15 PM
Math East Room 143 for class; practicum sites to be arranged

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Office Hours
By appointment, and
Tuesdays: 3:15 – 4:10 PM
Thursdays: 1-1:45 PM, in Gould Simpson 837 or by appointment

This course is part of the secondary teaching option for a major in mathematics at The University of Arizona. It is designed to provide students with knowledge and experience to enable them to become effective secondary mathematics teachers. Emphasis will be on modes of instruction, unit planning and lesson planning to maximize student engagement and student learning. Problem solving, effective assessment, classroom management, use of technology, and national curriculum and process standards will be focal points.

Course Objectives and Goals
1. Students will name, describe, identify, and use different modes of instruction and explain when each might be appropriate.
2. Students will locate and/or develop activities, lesson plans, and unit plans involving the appropriate use of different modes of instruction and appropriate content.
3. Students will analyze and determine appropriate ways to integrate technology (the use of computers, calculators, power point, digital cameras, etc.) and manipulative tools (concrete or virtual) into the teaching of the secondary mathematics curriculum.
4. Students will be able to incorporate a variety of formative and summative assessments of student learning into lessons they develop.
5. Students will to develop and present lessons.
6. Students will identify and implement Core Curriculum Standards and Standards for Mathematical Practice
7. Students presentations will be videotaped & students will debrief those presentations with reflection.
8. Students will continue to develop and demonstrate a deep understanding of the mathematics used in secondary schools.
9. Students will participate in a 6-week practicum, culminating in 3 days of teaching.
10. Students will develop effective methods of communicating.

Required Textbooks & Resources
Arizona Mathematics Standards/CCSS http://www.ode.state.or.us/search/page/?id=3511
http://www.illustrativemathematics.org/

InTasc Model Teaching Standards
**Course Materials**

- In addition to the required texts listed above, numerous articles and resources will be used. When possible, links are posted to the course D2L site. [http://d2l.arizona.edu](http://d2l.arizona.edu)
- Numerous resources will be created and shared. A 2-inch, 3-ring binder is recommended with tabs for 1) readings and reflections, 2) mathematical tasks, 3) practicum tasks & lesson plans, 4) writing assignments, 5) additional resources - questioning, classroom management/student engagement, ...

**Recommended Resources**


Illuminations (NCTM)  [http://illuminations.nctm.org/](http://illuminations.nctm.org/)

**Topics Included**

- What is school mathematics?
- What strategies encourage student engagement and proficiency?
- Student Motivation
- Lesson design
- Questioning techniques
- Classroom Discourse
- Practicum Observations (30 hours required), teach 3 or 4 lessons, and write reflections
- Learning styles
- Formative & Summative Assessment

**Course Expectations**

- **Attend** (on time) all classes and **fully participate** respectfully in the class activities.
- **Complete and submit** assignments on time.
- **Meet the practicum expectations**, representing the University of Arizona in a professional manner.
- **Adhere to the Code of Conduct.**
- **Students** who are registered with the Disability Resources (621-3268; drc.arizona.edu) are required to submit the appropriate documentation to the instructor if requesting reasonable accommodations.

The weight of the assignments will be as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Class attendance and full participation</td>
<td>25%</td>
</tr>
<tr>
<td>Mathematical Motivation Paper and Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Other Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Classroom Practicum Assignments &amp; Lesson Plans</td>
<td>25%</td>
</tr>
<tr>
<td>Final Presentation: 15-Minute Lesson &amp; Written Plan</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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A ~ 90- 100%, B ~ 80- 89%, C ~ 70- 79%,

**Late assignments will decrease in value by 10% multiplied by the number of days late.**

All assignments are due as noted in the assignment calendar.