Course Objectives:

1. Learn about mathematics teaching and learning in middle and high school via research articles, readings, assignments, in-class presentations, and other resources.
2. Develop understanding of mathematics assessment in the classroom using multiple methods.
3. Develop mathematics activities using technological tools including graphing calculators, software, and other media.
4. Complete a 15-hour field experience

Required Textbooks and Materials:


Graphing Calculator (e.g. TI 84-Plus) – note this requirement is included since the Praxis II exam requires a graphing calculator.

Other readings as assigned

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA:

A. **Requirements**

Successful completion of this course requires the following:

1. A commitment to participation in class discussions and activities.

   The quality of this course depends heavily and primarily on the regular attendance and participation of all involved. Participation will include taking part in discussions informed by critical reading and thinking, leading discussions about selected mathematics problems, and sharing with the class the products of various writing, reflection, lesson planning, and field experience assignments. The expectations, demands and workload of
this course are professional and high.

2. **A commitment to reading reflectively and critically the assigned readings.**

   The readings will be used to provide a framework and coherent theme to the course content. Students are responsible for responding to a set of questions about one reading each week.

3. **A commitment to attending and taking active part in 15 hours of classroom fieldwork.**

   Experience of and participation in a real classroom is essential to bridging the gap between educational theory and practice. Your field experience will provide a basis for classroom discussion. In addition, you will complete a final report about your experiences and observations.

**B. Major Performance-Based Assessments**

1. **Assessment Design**

   The assessment design assignment is devised for students to develop a series of assessments both formal and informal for use in a secondary classroom to cover a mathematics topic and document knowledge and learning to inform teaching.

2. **Classroom Design**

   The classroom design assignment will require students to develop general procedures for your classroom including the physical design of the classroom (e.g., desk arrangement), organization of materials, daily procedures (e.g., warm-up activities, homework assignments), classroom norms, and other aspects of the classroom that will facilitate students’ mathematical learning.

3. **Field Work Plan**

   The field work plan will require students to select an aspect of teaching to investigate through the field work placement. Students will develop a topic to investigate, select evidence or assessments, and develop a narrative analysis of the field work question.

**C. Minor Performance-Based Assessments**

For minor assessments, students will sign up on the class schedule and post their final product on the course blackboard site for review by the class. The teaching article will be incorporated into our in-class discussion. The other two assignments may be incorporated at the discretion of the instructor. Part of the criteria for evaluation for the course includes responding to and reviewing the assignments posted by other students.

1. **Technology Unit**
This unit plan will incorporate a piece of technology into the learning of a mathematical topic of instruction. The unit should include clear lesson plans, assessment, explanation of the relevant technology, and an explanation of goals and purposes.

2. Teaching Article Presentation

This in-class presentation will be an opportunity to research and present information about a teaching article for mathematics in secondary classrooms. Students will be required to find an article related to an aspect of secondary mathematics teaching, provide copies for the class and lead an activity in class related to the reading.

3. Cultural Context Assignment

This assignment requires students to develop a teaching activity which places a mathematics topic within an applied or cultural context. This could include examining the historical development of the topic or the application in a real-world context.

D. Criteria for Evaluation

The performance-based assessments listed above will be evaluated and weighted in your final grade according to the following point scale:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Design</td>
<td>200</td>
</tr>
<tr>
<td>Classroom Design</td>
<td>200</td>
</tr>
<tr>
<td>Field Work Plan</td>
<td>200</td>
</tr>
<tr>
<td>Technology Unit</td>
<td>100</td>
</tr>
<tr>
<td>Teaching Article Presentation</td>
<td>100</td>
</tr>
<tr>
<td>Cultural Context Assignment</td>
<td>100</td>
</tr>
<tr>
<td>Response to Minor Assessments</td>
<td>100</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1000</td>
</tr>
</tbody>
</table>

NOTE: All assessments and assignments are subject to change at the discretion of the instructor. Any revisions will be announced in class and posted on the Blackboard site.

Policy on Incompletes:
If circumstances warrant, a written request for an incomplete must be provided to the instructor for approval prior to the course final examination date. Requests are accepted at the instructor’s discretion, provided your reasons are justified and that a major percentage of your work has already been completed. Your written request should be regarded as a contract between you and the instructor and must specify the date for completion of work. This date must be at least two weeks prior to the university deadline for changing incompletes to letter grades.

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT STATEMENT OF EXPECTATIONS:
The Graduate School of Education (GSE) expects that all students abide by the following:

Students are expected to exhibit professional behavior and dispositions. See gse.gmu.edu for a listing of these dispositions.
Students must follow the guidelines of the University Honor Code. See http://www.gmu.edu/catalog/apolicies/#TOC_H12 for the full honor code.

Students must agree to abide by the university policy for Responsible Use of Computing. See http://mail.gmu.edu and click on Responsible Use of Computing at the bottom of the screen.

Students with disabilities who seek accommodations in a course must be registered with the GMU Disability Resource Center (DRC) and inform the instructor, in writing, at the beginning of the semester. See www.gmu.edu/student/drc or call 703-993-2474 to access the DRC.