Instructor: Linda Crawford  
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Office hours: Monday-Thursday 2:00-3:30; other times by appointment

Course Description: A study of contemporary learning theories as they relate to secondary mathematics and of teaching strategies including technology and other aids.

Course Objectives: A student will:

- become familiar with theories of learning mathematics;
- continue to grow as a teacher of mathematics through instructional practice and reflection;
- discuss and experiment with secondary mathematics teaching strategies and activities based on current research and recommended by state and national organizations;
- plan instructional activities appropriate for attaining secondary mathematics objectives;
- become a more knowledgeable and critical user of the wide variety of resources available to secondary mathematics educators, including professional journals and web-based materials;
- become a more knowledgeable and critical user of technologies and manipulatives useful to mathematics teaching;
- develop a deeper understanding of secondary school mathematics topics and determine appropriate strategies for teaching these topics.

Conceptual Framework for the College of Education:  
The preparation of teachers and other school personnel is critical to all other professions, and to communities, the state, and the nation. The professional educator plays an essential role in student learning. The Conceptual Framework of the professional education unit at Augusta State University consists of a mission and vision with an overarching theme to produce prepared, able, and responsive professionals to teach and support diverse learners.

This mission and vision requires a partnership between the professional education unit including the College of Education, the College of Arts and Sciences, the local community educational system, community agencies, and the Partner School Network.

Conceptual Framework: Mission  
Our mission is to educate prospective school professionals to be knowledgeable, highly effective, and ethical practitioners.

Conceptual Framework: Vision  
Our vision is to prepare school professionals who transform P-12 learners into thinking, productive citizens.
**Standard**: Prepared
**Disposition**: To think critically about the process of teaching, learning and assessment.
**Competencies**: Candidates who are prepared will:

- **P1** - demonstrate strong content and pedagogical preparation in their respective subject area or professional field.
- **P2** - use self-assessment and analysis as a basis for collaboration with colleagues, continuing professional development and lifelong learning.
- **P3** - possess an understanding of the central concepts, tools of inquiry, and structures of the discipline(s) or professional field of study and create learning experiences that enable all students to learn.
- **P4** - demonstrate an understanding about how students learn and develop (intellectually, socially, and individually) and provide developmentally appropriate curricula, learning opportunities and support.
- **P5** - demonstrate knowledge about how to use information and technology effectively to foster active inquiry, collaboration, and supportive interaction in educational settings.

**Standard**: Able
**Dispositions**: To be creative, challenging, and flexible in teaching/professional practices.
**Competencies**: Candidates who are able will:

- **A1** - understand, use and support a variety of instructional strategies to encourage critical and creative thinking, problem solving, and achievement.
- **A2** - create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation for all learners.
- **A3** - plan, guide, and support instruction using knowledge of subject matter, the learners, the community, and curriculum goals.
- **A4** - understand and use authentic assessment to evaluate and ensure the continuous development of the learner.
- **A5** - organize, allocate and manage resources to support learning.

**Standard**: Responsive
**Disposition**: To act in a fair manner that is empathetic, responsive, enthusiastic, inclusive, and reflective in relations with students, parents, peers, and others.
**Competencies**: Candidates who are responsive will:

- **R1** - respect the dignity of all persons believing that all children can learn and have the right to an opportunity to do so.
- **R2** - translate knowledge into creating and supporting meaningful experiences for diverse learners.
- **R3** - accept responsibility for teaching and working in authentic settings with diverse populations of learners.
- **R4** - demonstrate a commitment to meet the educational needs of learners in a fair, caring, nondiscriminatory, and equitable manner.
- **R5** - reflect on practice and continually evaluate the effects of choices and actions on others (students, parents, and other professionals in the learning community).
- **R6** - foster professional relationships with school colleagues, parents, and agencies in the larger community to support the learning and well-being of all students.

**Textbooks**:
**Attendance:** Attendance is required. Any student who misses more than 10% of class time (equivalent to 1½ class meetings) may be dropped with a WF. Please let me know prior to class if you must be absent.

You are expected to check your campus email regularly (at least once per day).

**Technology Information:**
- Information about the IT Help Desk can be found at [http://gru.edu/its/help/](http://gru.edu/its/help/).
- You can get help with D2L through the University of Georgia D2L Help Center at [https://d2lhelp.view.usg.edu/](https://d2lhelp.view.usg.edu/).

**Online Resources:**
- Information about Geometer’s Sketchpad can be found [http://www.mheducation.com/prek-12/program/MKTSP-HGA01M0.related.html?page=1&sortby=relevance&order=desc](http://www.mheducation.com/prek-12/program/MKTSP-HGA01M0.related.html?page=1&sortby=relevance&order=desc) (a 1-year student license is $9.96)
- Download Desmos for free at [https://www.desmos.com/](https://www.desmos.com/) (Graph functions, plot tables of data, evaluate equations, explore transformations, and much more-- available for desktop, tablet, and phone)
- Illustrative Mathematics [https://www.illustrativemathematics.org/](https://www.illustrativemathematics.org/) (Provides instructional and assessment tasks, lesson plans, and other resources for teachers, assessment writers, and curriculum developers.)
- National Council of Teachers of Mathematics [http://www.nctm.org/](http://www.nctm.org/) (There are lots of resources at this website, many of which are free but you are encouraged to become a member—see below for membership details.)
- [Georgia Standards of Excellence](http://www.goscale.org/)

**Course Notebook:**
Organize all materials (handouts, class notes, homework, readings, writings, tests) in a 3-ring binder. This notebook will be a record of your work in the course and will also serve as a tool for reflection. It will also be a valuable resource to you when you begin teaching.

**Journal of Open-ended Reflections:**
A component of effective teaching is reflection on practice. The NCTM Principles and Standards stress that teachers must have opportunities to reflect on and refine instructional practice—during class and outside class, alone and with others. The assignment of journal of open-ended reflections provides you with the opportunity to become a more reflective thinker. Although the reflections are open-ended, you may want to consider the following questions:
- **What have you read, investigated, experienced that has challenged your beliefs about mathematics, teaching mathematics, and/or learning mathematics?**
- **What have you learned that will help you be a better mathematics teacher?**
- **What have you learned about yourself as a learner?**
- **What mathematics concepts have become clearer?**
• What observations have you made about how others learn mathematics?
• What questions are you pondering?
• What concerns or frustrations are you experiencing?

Your reflections should focus on your developing understanding of mathematics, mathematics teaching, and mathematics learning—insights you’ve have, things you are confused about, realizations that relate to the teaching and learning of mathematics, frustrations that you encounter, etc. What I do not want to see is a simple recounting of what went on in class; instead, I am more interested in how you process that information. I will read your postings and make appropriate comments. If done well, your reflections can be valuable to you as a device to make explicit how you are changing as a mathematics teacher and learner; they will also be important to me as a source of information about you and the progress of the class.

You are to submit at least 7 journal entries; these will be submitted in D2L. These may be submitted at your discretion but should be submitted throughout the semester at regular intervals (approximately every 2 weeks). I will read your entries and make comments as appropriate.

Final Look-back Reflection:
At the end of the course, you will write a final look-back reflection for the course. You should read again your journal of open-ended reflections to remind you of the progress you have made. Respond to the following prompts in your final reflection but don’t be limited to these prompts.
• What are the main points you have learned as a result of taking this course? For ex., what mathematical understandings have you gained? What best practices have you learned? What resources have been especially helpful? (Please elaborate!!)
• How has your view of mathematics, the teaching of mathematics, and the learning of mathematics changed?
• What are your goals for improving instruction in your school or classroom as a result of participating in the course? How will your classroom practice be enhanced?
• With what ideas are you still grappling? What are some unanswered questions you still have?

Project:
The final project is an opportunity for you to individualize the course to your particular needs. It is an opportunity to meet the objectives of the course by focusing on an applied project related to your teaching situation, needs, and interests. It is also an opportunity to discuss your learning goals with me to further clarify and focus them. Begin work on your preliminary plan as soon as possible. The oral presentation of the final project is due on final exam day. You must submit a type-written summary of your final project when the oral presentation is given—you should at least include in this summary an overview of the project, why you chose the project, what you learned, and how you will use what you learned.

Grading Policy:
Your grade in this class will be based on the following:

• Attendance and punctuality
• Class discussions
• Collegial peer and group work
• Written or presented assignments
• Journal of open-ended reflections
• Final look-back reflection
• Project (which also includes an oral presentation and summary)

You are guaranteed a "C" in this class if you meet the following criteria:

• Missed no more than the equivalent of 1½ classes.
• Were punctual to class.
• Submitted assignments on time.
• Submitted 7 journal entries of which at least 4 reflect a real effort to grow as a mathematics teacher. These entries show that you are grappling with significant ideas related to mathematics teaching and learning.
• Submitted a final look-back reflection for the course.
• Worked cooperatively in groups.
• Participated in class discussions.
• Submitted a plan for your project and received approval.
• Submitted a project, gave an oral presentation, and summary that meet the criteria described and agreed upon in your plan. The assessment of the final project is acceptable (as defined by the provided rubric).

You are guaranteed a "B" in this class if you meet the following criteria:

• Fulfilled all the criteria for a C.
• Demonstrated notable effort, thinking, and involvement in the activities of the class.
• Submitted at least 7 journal entries. At least 7 entries reflect a real effort to grow as a mathematics teacher. These entries show that you are grappling with significant ideas related to mathematics teaching and learning.
• The final look-back reflection indicates a thoughtful consideration of how the experiences in the course have impacted you as a learner and as a teacher. You identify your goals for improving instruction in your school or classroom as a result of participating in the course, including how your classroom practice may be enhanced.
• Submitted a project, gave an oral presentation, and summary that meet the criteria described and agreed upon in your plan. The assessment of your project is good (as defined by the provided rubric).

You are guaranteed an "A" in this class if you meet the following criteria:

• Fulfilled all the criteria for a B.
• Provided depth and complexity to the class discussions.
• Written work and presentations went beyond simple completion or hard work; rather, they showed insight and a real attempt to provide clear and thoughtful discussion of the ideas.
• Submitted a final look-back reflection that shows a genuine self-awareness of the progress you have made and of the experiences that helped you make that progress. You express realistic and appropriate goals for making an impact at your school or in your classroom as a result of your experiences in the course. Challenges and questions are also identified.
• Submitted a project, gave an oral presentation, and summary that meet the criteria described and agreed upon in your plan. The assessment of the project is exceptional (as defined by the provided rubric).

You are guaranteed an "F" in this class if at least 3 of the following occur:

• Missed more than the equivalent of 1½ classes.
• Did not turn in assignments or revisions to assignments during the semester. (You may not make-up all your missing assignments at the end of the semester).
• The journal entries did not meet the criteria or were not submitted at regular intervals throughout the semester.
• The project was either not submitted or was poorly done (as defined by the provided rubric).
• The final look-back reflection was either not submitted or showed little effort to reflect on the experiences in the course.

**Dates to Remember:**

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<tr>
<th>Event</th>
<th>Date</th>
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<tr>
<td>Midterm date (if you plan to drop the course, you should do so on or before this date—there is no midterm exam)</td>
<td>Mon, March 7</td>
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<td>Student holidays</td>
<td>MLK Day—Mon, Jan 18 Spring Break—April 4-8</td>
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<tr>
<td>Classes end</td>
<td>Mon, May 2</td>
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<td>GCTM Conference at Rock Eagle—Information available at <a href="http://www.gctm.org">www.gctm.org</a></td>
<td>Wed-Fri, October 12-14, 2016 (tentative date)</td>
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**Professional Organizations**

You are encouraged to join the following professional organizations:

• Georgia Council of Teachers of Mathematics (GCTM) at [http://www.gctm.org](http://www.gctm.org) (GCTM student membership is free if you’ve never taught professionally; otherwise, it is $20.)

• National Council of Teachers of Mathematics (NCTM) at [http://www.nctm.org/membership/](http://www.nctm.org/membership/) ($45 student e-membership includes your choice of journal. *Mathematics Teaching in the Middle School* is the journal recommended for middle school teachers; *Mathematics Teacher* is recommended for secondary teachers.)

**Academic Honesty**

Cheating will not be tolerated. Any student who is caught cheating will face serious consequences. This pertains not only to in-class work but also to outside assignments
such as homework; any assignment that you submit as your own should be a report of YOUR thinking. You are expected to read and strictly adhere to the entire Academic Honesty policy for Augusta University.