**MAT 264 A—Methods of Teaching Topics in Middle School Mathematics**

**Fall Semester, 2004**

**Vital Information:**

**Days:** Mondays  
**Time:** 12:30 – 2:30 PM  
**Place:** 158 SMB—Sada L Clarke Curriculum Classroom  
**Instructor:** Dr. Timothy Hendrix  
**Office:** 246 SMB  
**Office Phone:** 760-8240 (Voice Mail is available; please leave a message if I am not available)  
**Home Phone:** 510-8725 (before 10 PM)  
**Email:** hendrixt@meredith.edu  
**Office Hours:** Mondays & Fridays: 9:00 – 10:00 AM; Wednesdays, 1:00 – 2:00 PM; Tuesdays & Thursdays, 11 AM – 12 Noon

**Textbooks:**

- *Teaching and Learning Middle Grades Mathematics*  
  Authors: Rubenstein, Beckmann, and Thompson

- *Principles and Standards for School Mathematics*  
  Author: National Council of Teachers of Mathematics

Other readings will be distributed to you in class and a reading resource list will be posted on both Blackboard and the course website. A sample of the readings are included in the list below.

- Various journal articles in mathematics education

- *A Research Companion to Principles & Standards for School Mathematics*  
  Authors: National Council of Teachers of Mathematics

- *Mathematics, Pedagogy, and Secondary Teacher Education*  
  Authors: Cooney, Dossey, et al.

- *Implementing Standards-based Mathematics Instruction*  
  Authors: Stein, Smith, Henningsen, and Silver

- *The Teaching Gap*  
  Authors: Stigler and Heibert
**Course Description:**

This course is designed to supplement the methods course by focusing on the content of middle grades mathematics. Topics will include the North Carolina standards for Middle Grades Licensure in mathematics, and mathematics topics included in the North Carolina standard course of study for middle grades mathematics. The course will focus on the psychology of learning and effective instructional strategies for middle grades learners.

**Course Objectives:**

This course is designed to prepare you for the teaching of mathematics at the middle and secondary grade levels. While the course will examine specific methods and issues in teaching and learning mathematics, it is my hope and intention that you grow mathematically through this course as well. In every course I teach, I hope that students will:

- **Experience new ideas**—by articulating your philosophy of mathematics, teaching and learning; by looking at and doing mathematics from new and different perspectives; from reading and discussing different viewpoints about middle grades learners and mathematics.
- **Continue building rich mathematical power**—by understanding the concepts behind rules and procedures that we teach; by learning new mathematics that informs middle grades mathematics.
- **Gain multiple perspectives**—by engaging concepts in multiple representations. In this course, you should expect to meet concepts from graphical, visual, numerical, and verbal representations, as well as symbolical representations.
- **Apply knowledge of mathematics with other fields of study**—by exploring how mathematics is used in different fields and disciplines; by building models to solve problems that arise in other fields, such as business, engineering, biology, physics, information science, sports, etc.
- **Build connections within mathematics**—by seeing what middle grades learners bring to the mathematics class and building connections within different branches of mathematics.
- **Use powerful technology tools of computation and investigation**—by using graphing calculators, computer algebra systems, spreadsheets, and data collection/analysis software to promote diverse learning styles and deeper understanding.
- **Do mathematics both collaboratively and independently**—by engaging group problem-solving as well as independent mastery work. You will have the opportunity to contribute to collective understanding and application of concepts with other class members throughout the course. However, to contribute meaningfully, you must have a level of understanding and ease with the concepts individually.

**Statement of Honor:**

"We, the Meredith Community, are committed to developing and affirming in each student a sense of personal honor and responsibility. Uncompromising honesty and forthrightness are essential elements of this commitment. The Honor System is a method by which individual honors are protected and maintained. Any dishonorable action will be regarded as a violation of this commitment, and corrective action will be taken.

“If I am in violation of the Honor Code, to prevent jeopardizing the Honor System or weakening our system of self-government, I have an obligation to report myself to the proper authorities. If I am aware of a violation of the Honor System by another student, I shall call this matter to the attention of the student as a violation of responsibility to the community.

“In choosing Meredith College, I am accepting the Honor System as a way of life. As a Meredith student, I am responsible for insuring that the Honor System is at all times carried out.”

I will expect you to sign and to commit all of your work products to scrutiny of this pledge.

In class, I will clearly identify which types of work products are intended to represent independent work or collaborative work."
Attendance Policy:

- The College Policy is that "each student is expected to be regular and prompt in her attendance at all classes."
- In this course, you are expected to attend all classes. The material in the course is cumulative by nature rather than topically discrete. Moreover, in this course, you will be expected to work both independently as well as collaboratively with other course members. That imparts a responsibility to each individual to be present in class and to prepare accordingly.
- If it becomes necessary for you to miss a class, it is your responsibility to be prepared for the next class period. The course website will have reading and homework assignments as well as due dates posted. If you miss a class due to illness, I am willing to work with you to help you with work missed.
- It is your responsibility to notify me prior to any absences. If you need to miss a class to represent the College, you should be able to notify me well in advance. If you need to miss a class due to illness, contact me via phone or email prior to class if at all possible.
- In the case of inclement weather, if the College is open officially, then class will be held. Commuter students should not take any life threatening risks to come to class; such an absence will be excused. In case of class cancellations resulting from inclement weather, the college will run public announcements on the radio station, MIX 101.5 FM and the television station, WRAL Channel 5 (Channel 3 on cable). The emergency weather phone number is 832-8688.

Students with Disabilities

- **Students with Disabilities**: Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must go through the Counseling Center/Disability Services office. Disability Services is located in 106 Carroll Hall and can be reached at 760-8427 or disabilityservices@meredith.edu. For additional information see the website at http://www.meredith.edu/students/counsel/disability.

Collaborative Community-wide Course Requirements:

For this course, I expect you to maintain a journal for each chapter (unit) that we discuss, and to build a resource library of mathematics, activities, and pedagogical strategies that will help you in working with middle grades learners.

15 %  Attendance, participation, preparation

25 %  Field experiences—trying activities in your school placement, leading lessons, interviewing students, etc

20 %  Online reflections, activities, assignments, etc

20%  Resource notebook, toolkit, etc.—important mathematics, activities, and pedagogical considerations in an organized fashion

20%  Unit Plan—final project; a cohesive unit of instructional material with background mathematics, extension activities, technology, etc.
Evaluation and Related Course Policies:

A core assumption of this course is that all enrolled participants will bring both an open mind and a critical attitude to their work. Openness in this situation refers to a willingness to consider teaching in settings and grades beyond one's first preferences, as well as to the capacity to find hidden opportunities in assignments, individuals, and settings whose parameters and/or apparent limitations were not expected. A critical attitude refers to the capacity to see both the strengths and weaknesses of practices and situations while still withholding judgment on them. It also refers to the capacity to evaluate and question one's own assumptions and past experiences. Students whose comments, interactions with others, and written work all display evidence of openness and a critical attitude will be favorably evaluated.

Another core assumption of this course is that all participants are responsible adults capable of interacting with each other and with secondary students and school personnel in a professional and responsible manner; of being on time for class and field experiences; of being appropriately dressed; and of being prepared. Be aware that if you do not conduct yourself in a responsible, professional manner, or if you are late for class or field experiences or are absent without notice or excuse, you risk your grade and your standing, not only in this course, but most likely in the program as well.

Late assignments will be accepted only with pre-approved consent of the instructor.

Grades will be based on the following general rubric. These qualitative guidelines are associated with percentage weights, and these parameters are given on the course website.

- Consistent, timely preparation and attendance, thoughtful and substantial contributions to discussions and presentations, and well-written and solidly analytic papers/products will result in an "A."
- Consistent preparation and attendance, occasional contributions to discussions and presentations, and papers/products that "cover" a topic will result in a "B."
- Inconsistencies in preparation and attendance, occasional contributions to discussions and presentations, and "thin" papers/products (in length or substance or both) will result in a "C."
- Failure to attend class regularly or contribute to discussions and presentations, coming to class unprepared, and writing in a manner completely unacceptable for someone with senior standing at this college will result in a "D" or an "F," depending on circumstances and the extent of deficiencies.

This course is the major course in your content preparation for licensure. If your grade is below a “B” level, then you should be greatly concerned. Let’s state it positively—because you are dedicated to becoming effective teachers of mathematics, I know that your efforts and work will reflect that dedication.
## Tentative Schedule

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<tr>
<th>Week of the Semester</th>
<th>Topic</th>
<th>Sections of Text</th>
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<td>1 August 18 – 20</td>
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<td>2 August 23 – 27</td>
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<td>3 August 30 – September 3</td>
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<td>4 September 6 – 10</td>
<td>No Class on Labor Day, 9/6</td>
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<td>5 September 13 - 17</td>
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<td>6 September 20 – 24</td>
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<td>7 September 27 – October 1</td>
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<td>8 October 4 – 8</td>
<td>Fall Break—October 6 – 10</td>
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<td>9 October 11 – 15</td>
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<td>14 November 15 – 19</td>
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<td>15 November 22 – 26</td>
<td>Thanksgiving Break—November 23 – 28</td>
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<td>16 November 29 – December 3</td>
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<td>17 Final Exam is scheduled for Friday, December 3 at 1:00 PM</td>
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