Teaching Subject Matter to Diverse Learners (Part I)
TE 407 Team 4
Section 011: Secondary Mathematics
Fall, 2005

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Class Meeting Information:  
Seminar meeting:  
M W 10:20 am to 12:10 pm  
312 Bessey Hall

Lab meeting (days and times TBD):  
C314 Wells Hall
Course Prologue:

The year-long TE 407-408 course marks a turning point in your transformation from a student of mathematics to a teacher of mathematics. Although you have likely had several education classes, and although many of you may have spent significant time as a teacher or a tutor, we view 407-408 as the place where your identity as a teacher begins to solidify.

A few weeks after beginning this course, and continuing for the remainder of the year, you will spend a significant portion of each week observing and teaching in mathematics classes. Soon thereafter (likely next year) you will have one or more classes that you will essentially be teaching by yourself. In other words, in a very short time, you will be completely responsible for a class full of young students. For many of you, a job as a teacher has been a somewhat vague glimmer in your future. As you begin TE 407-408, recognize that this time will arrive very shortly.

Are you ready? We hope that the prospect of having a class of your own is both exciting and a bit scary for you. During TE 407-408, we want you to retain your excitement and enthusiasm for the teaching profession but at the same time have a healthy respect for all that you need to learn before you’ll be comfortable and successful in your own class. And we will be working hard to provide you with the kinds of experiences that we enable you to learn what you need to, in order to ultimately be a successful teacher.

We would like to be upfront with a confession about courses such as TE 407-408 that you may find surprising. By the end of this course, you will still have a lot to learn about being a math teacher. Our experiences as teachers and teacher-educators, as well as what we know of research on teacher learning, convince us that much of what you will need to know to be a successful mathematics teacher, you will learn on the job. Nevertheless, there is a lot that you will learn in this course that will make you more ready to learn on the job – critical knowledge and skills that will prepare you to step into your own classroom in a couple of years.

Our goals for this year-long course are to provide you with opportunities to learn what we think you need to know to take full advantage of later opportunities to learn on the job. In particular, our main goals for the year-long TE 407/408 course are for you to:

• Develop a deeper understanding of the mathematics content that you are teaching and how it can be meaningful for your students. Just because you earned good grades in your high school mathematics class does not necessarily mean that you are ready to teach high school mathematics to your students. A teacher needs a different kind of understanding of mathematics content in order to make the math meaningful and understandable to his or her students.

• Develop knowledge of learning strategies and frameworks for planning, teaching, and assessment. Professionals in any field share an emphasis on planning, implementing, and evaluating their performance; teachers are no different. Successful teachers create careful and thoughtful plans for their lessons. After implementing these lessons, successful teachers evaluate whether their objectives have been met, and take steps to improve or adapt their plans for future
use.

- **Develop knowledge of classroom management and discipline issues associated with mathematics teaching strategies, such as lectures and class discussions, cooperative groups, activities, etc.** Successful teachers have a range of teaching techniques that can be drawn upon to help their students develop understanding, including lecture, small and large groups discussions, and activities and games. And successful teachers are able to manage their classrooms (dealing with issues of misbehavior and discipline) so that all students have the opportunity to learn.

- **Learn about mathematics support systems, including state and national standards, texts and other teaching materials, mathematics teacher organizations and conferences, etc.** No matter where you decide to teach (in Michigan or out-of-state), there are a wealth of resources that you may find helpful toward meeting your goals as a mathematics teacher, at the national and state level. This course will introduce you to some of these resources.

- **Develop knowledge of techniques of assessing students’ understanding.** What does it mean for a student to “get” an idea in mathematics? How can a teacher determine whether or not a student understands? What kinds of tasks or assessments are the most effective in helping teachers evaluate student understanding? These and other questions relating to the assessment of students are an integral part of this course.

The year-long TE 407-408 course can be considered to have two broad themes. In TE 407, you will begin your formal observations of teaching. In order to assist in how you make sense of what you will be observing, we will focus on learning how to interpret classroom practices. The course activities will attempt to focus your attention on many aspects of the craft of teaching that you will observe in your field placement and in videos of mathematics. Our goal is to help you develop your “teacher eyes” – we know that becoming a careful and attentive observer of the craft of teaching is an initial but important step in developing and refining your own teaching practices. In TE 408, the primary emphasis will be on observing and assessing student learning – assessing and interpreting what students know and do in the mathematics classroom.

**Attendance Policy**

Attendance matters. It matters to us as instructors; it matters to peers who count on your support and feedback. It also matters to your mentor teacher and to your continued progress in this program.

**Attendance at MSU courses:** We expect you to attend all class sessions of TE 407-408, including seminars and labs. You will receive only one grade for each semester of the course, and attendance at all its various session types has implications for that grade (as described more below). Absences for which you have not pre-notified your instructor or absences that we discuss together after the fact but cannot accept as valid become "unreasonable" absences. More than two unreasonable absences may result in a 0.0 for the course.
If you know you are going to miss a class, talk with your instructor prior to that time. Make a plan for getting a record of that session. Help your instructor understand why the absence is necessary. If a serious illness strikes you more suddenly, e-mail your instructor and/or and call his/her office and leave a message on his/her voice mail. Then, when you're feeling cogent, contact your instructor and explain your absence more fully. The course instructors will tell you if we are unable to see your absence as reasonable.

*At your school placement:* Here again, more than two unreasonable absences (or reasonable absences that you do not make up) may result in a 0.0 for the course. When you meet your mentor teacher, agree on a procedure for notifying her/him of an impending or sudden absence. Also report your absence when you turn in your next field report. Fall semester field visits are scheduled to end in early December. The period between the end of official field visits and the end of the term can be used, if necessary, to make up field visits and assignments that you missed earlier in the term.

**Required Course Elements**

This course includes three required elements:

- The seminar that you attend, Mondays and Wednesday, 10:20 am to 12:10 pm.
- The teaching laboratory that you attend on (days and times TBD)
- Your attendance and performance in your field placement, including standards for reliability and responsibility, communication skills and social relationships, and comfort with and concern for the learning of all children as described below and in your senior handbook.

ALL of these components must be completed successfully for you to pass the course. If you fail to complete any of these components, you will receive a grade of 0.0 or Incomplete for the course. If you complete all of the components successfully, your grade will be determined by your performance in the seminar, lab, and field placement.

**Required Texts**

All required course texts and readings will be available on-line using ANGEL.

**Major Course Assignments**

In TE 407, you will be required to complete four major assignments. Each of these is briefly described below, with additional details provided in class.

1. *Getting to know your field placement and mentor teacher*

   You will likely begin your field placement in late September. The first major course assignment is intended to orient you to the teaching and learning context of the school in which you will be observing. This assignment has two parts.
Part A is a **field checklist** of various important activities that we hope you will be able to do this semester in your field placement, such as taking attendance, helping grade a test, learning the names of all students in the class, and making a parent phone call. It is not required that you do all of these activities, but you are strongly encouraged to work with your mentor teacher to “check off” as many activities on this list as possible this term. The due date for this assignment will be determined once you begin your field placement.

Part B is a **mentor teacher interview** that should be done in the first week or two of your placement. (If you are paired with another student with the same mentor teacher, this activity can be done in pairs.) We will provide you with a number of questions that we’d like you to ask your mentor teacher, in order to introduce you to his/her classroom and the school. You will be required to turn in a written report of this interview on a date that will be determined once your field placement begins.

2. **Teaching cycle assignments**

With the guidance of your mentor teacher, you will expected to teach **ONE one-day and ONE two-day lessons** in your field placement this semester. For each lesson, you will be expected to turn in lesson plans one week prior to teaching the lesson, and a formal write-up of and reflection on the lesson one week after teaching the lesson. The due dates for these assignment will be determined once you begin your field placement.

4. **Teaching observation analysis paper**

Your final assignment of the semester will be a **formal observational analysis** of a lesson taught by your mentor teacher. Expectations for this assignment will be discussed throughout the semester. The due date for this assignment will be determined once you begin your field placement.

**Weekly Course Assignments**

In addition to the major course assignments above, you will also be completing weekly assignments for this course. Weekly assignments fall into three categories.

**Reflection Assignments.** You will have a written “Reflection Assignment” due for most weeks of the class. Reflection Assignments will involve writing about a page about a topic. Sometimes you will be writing a reaction to something that you’ve read or that we’ve talked about in a prior class; at other times, you will be asked to give an opinion on a topic that we will be talking about in a future class. Other Reflection Assignments will encourage you to make sense of what you’ve experienced in the field. As the name suggests, Reflection Assignments are intended as a vehicle for reflection about what you are reading, thinking about, observing, and learning. More specifically, the purposes of these assignments are: to allow you to synthesize and summarize the theoretical material from the weekly readings; to encourage you to apply and interpret the theoretical material from the readings to the lives and issues of teachers and teaching as you
experience in your field observations; and to assess whether you have completed the readings for each week.

Reflection Assignment topics will be announced in class and also posted on ANGEL. Reflection Assignments will be graded (see Grading below) on how well you can incorporate, comment on, and utilize the content (class readings and discussions) that the assignment draws upon. In addition, these assignments will be assessed on promptness, spelling, length, and grammar. Do not attempt a Reflection Assignment until you have completed the readings for a particular week. Each assignment is designed to make use what you are reading, and it is extremely unlikely that you would be able to write an acceptable reflection without first doing the readings. No late papers will be accepted after the beginning of the class period on the due date of a Reflection Assignment. Reflection Assignments should be word-processed, single-spaced, 12-point Times or Times New Roman font, 1” margins all around, and about a page (at least 500 words). Reflection Assignments should be submitted via ANGEL.

Course Readings. Each week you will have a small set of readings that are required. Readings will be available on ANGEL. Readings are an extremely important part of the course; in order to productively participate in classroom discussions, and in order to complete Reflection Assignments, it is vital that you complete course readings. Readings will be announced in advance, both in class and in ANGEL.

Class Participation

Class participation is a required and important part of this class. Class discussions will be most fruitful if all students are prepared for class and actively participate. Accordingly, you will be given a participation grade, as follows. Class participation will be graded each class on the standard 4-point MSU grading scale, where 0 = absence from class, 1.5 = unacceptable participation, 3.0 = acceptable participation, and 4.0 = quality participation, all as defined below.

Quality participation is characterized by:
• active, enthusiastic participation and active listening in class discussions and activities
• demonstrating your understanding of class readings by using what you’ve read to help explain or justify comments
• asking thoughtful questions
• responding to other students’ comments in a responsible and constructive manner
• leadership and active participation in small group activities, helping keep the group on task
• relating concepts from class to your experiences as a teacher and as a learner

Acceptable participation is characterized by:
• reasonable participation and reasonably active listening in discussion and activities
• demonstrating some knowledge of class readings in comments
• asking clarification questions about readings and concepts

Unacceptable participation is characterized by:
• physical presence in class but cognitive absence (e.g., reading a newspaper)
• non-constructive responses to the comments of other students
• no real attempt to complete tasks in a reasonable or thoughtful way
• no participation in group activities or actual attempts to distract others
• tardiness to class

NCTM Student Membership

As a requirement of this course, you are expected to join the National Council of Teachers of Mathematics as a student member. You can join NCTM on the web with a credit card, at www.nctm.org/membership/application/student.asp, or by calling 1800-235-7566. (You can also download or print an application form at www.nctm.org/membership/application/student.pdf that you can mail in with a check or money order.) The cost is $38; this entitles you to a one-year online subscription to one of NCTM's journals; we recommend that you elect to receive the Mathematics Teacher, which is NCTM’s journal for teachers of mathematics in grades 8 to 12. The Mathematics Teacher is a monthly journal, and most months at least one of the articles in this journal will be read and discussed in TE 407 and TE 408. In addition, joining NCTM enables you to access other important resources, including an online version of Principles and Standards for School Mathematics.

Technology Requirements and Course Assignments

Your assigned work for TE 407-408 will require you to have and use the following technological skills: ANGEL (including discussion boards, downloading content, posting content), e-mail (including sending and receiving attachments), word processing, Web searching, creating a web homepage, using of a spreadsheet, and using a small number of software packages that will play key roles in the course (e.g., Geometer’s Sketchpad). Note that it is expected that you will check your MSU e-mail account and the course ANGEL site at least once every other weekday during the course. E-mail and ANGEL will be the primary means by which course announcement and assignments will be made.

If you do not have all the technology skills you need, technology resources are available both within the College as well as the larger MSU community. Among the most useful resources are the Tech-Guides. They are available to help you work through any problems you have with technology, and are particularly focused on educational uses of technology. They can help you with basic email to developing web pages and beyond. Contact the Tech-Guides by phone at 432-3531, or by stopping in at the TEC (133 Erickson Hall) during their posted hours. The Tech-Guides also offer group workshops, and colloquia. Information about these events can be found at their website (http://ott.educ.msu.edu/ctt/). Workshops can be scheduled by special arrangement for groups of 8 or more students. Call the Tech-Guides to arrange a time. Another resource is the Libraries, Computing, and Technology Training Program (LCTTP), information available at http://train.msu.edu/. LCTTP offers a variety of classes and workshops related to technology.
**Professional Criteria**

In order to proceed to the internship, you must meet the professional criteria below in the judgment of your course instructors and your mentor teacher. If you are not meeting these criteria, you will be notified and given a chance to correct your deficiencies.

1. **Reliability and Responsibility**
   Prospective interns must generally have been present and on time for professional commitments, including classes and field experiences. Prospective interns must have regularly communicated about necessary absences or lateness according to the guidelines in the Professional Conduct Policy. Prospective interns must have a record of meeting deadlines for course assignments and program requirements. A pattern of repeated absences, lateness, and failure to meet deadlines in courses or fieldwork is not acceptable. Any form of dishonesty (indicated by documented evidence) about these and other requirements, including lying, stealing, plagiarism, forged signatures, etc., is not acceptable.

2. **Communication Skills and Social Relationships**
   Prospective interns must have demonstrated the ability to express their viewpoints and negotiate difficulties appropriately, without using offensive language with instructors or peers. Prospective interns must have shown that they are ready to accept constructive feedback in a professional manner. Prospective interns must have an awareness of appropriate social boundaries between students and teachers and have shown that they are ready and able to observe those boundaries. Extreme forms of behavior (including outbursts in class, personal or sexual harassment, threats of suicide or of harm to others) are not acceptable.

3. **Comfort with and Concern for the Learning of all Children**
   Prospective interns must be able to engage in informal conversations with children and keep their attention in such conversations. Prospective interns must interact courteously, fairly, and professionally with people from diverse racial, cultural, and social backgrounds and of different genders or sexual preferences. Acts of disrespect to others (including racial slurs, judgmental statements about families, and prejudicial treatment of students) are not acceptable.

**Data Collection of Course Artifacts**

Student work and class artifacts from TE 407-408 may be used to contribute to ongoing teaching development research. Data that may be collected includes videotapes of TE 407-408 classroom episodes and students’ written assignments. Protocols for insuring that data is collected in accordance with appropriate IRB procedures will be discussed in class. At no time will students’ names be used in any published reports, and students are free to withdraw their consent at any time.
Grading

As described above, you will issue a single grade for all of TE 407. In order to pass the course, you must successfully complete the course seminar component, the lab component, and your field placement. If you successfully complete all course components (by fulfilling all obligations and assignments), your grade will be determined as follows.

- 50% of your TE 407 grade will result from your performance on the four major assignments in the seminar. This includes the field checklist and mentor teacher interview report, teaching cycle assignments, and teaching observation analysis paper.
- 25% of your TE 407 grade will result from your performance on the weekly seminar assignments, including class participation, reflection assignments, and math problem-solving.
- The remaining 25% of your TE 407 grade will result from your performance in the microteaching labs.

Other Course Details

Accommodations for Disabilities. Students with disabilities should contact the Resource Center for Persons with Disabilities to establish reasonable accommodations. For an appointment with a counselor, call 353-9642 (voice) or 355-1293 (TTY).

Observing a Major Religious Holiday. You may make up course work missed to observe a major religious holiday only if you make arrangements in advance with the instructor.

Participation in a Required Activity. To make up course work missed to participate in a required activity for another course or a university-sanctioned event, you must provide the instructor with adequate advanced notice and a written authorization from the faculty member of the other course or from a university administrator.

Attendance. Students whose names do not appear on the official class list for this course may not attend this class.

Disruptive Behavior. Article 2.3.5 of the Academic Freedom Report (AFR) for students at Michigan State University states that “The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned.” Article 2.3.10 of the AFR states that “The student has a right to scholarly relationships with faculty based on mutual trust and civility.” General Student Regulation 5.02 states that “no student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted.” Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Faculty Judiciary process.
Class meetings on holidays. Note that there will be no class on Monday, September 5 (because of Labor Day) and on Wednesday November 23 (because of Thanksgiving).

On Academic Integrity

Article 2.3.3 of the Academic Freedom Report states that “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards.” In addition, the College of Education adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades (excerpted below): the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site: www.msu.edu.)

“The principles of truth and honesty are fundamental to the educational process and the academic integrity of the University; therefore, no student shall: (1.01) claim or submit the academic work of another as one’s own. (1.02) procure, provide, accept or use any materials containing questions or answers to any examination or assignment without proper authorization. (1.03) complete or attempt to complete any assignment or examination for another individual without proper authorization. (1.04) allow any examination or assignment to be completed for oneself, in part or in total, by another without proper authorization. (1.05) alter, tamper with, appropriate, destroy or otherwise interfere with the research, resources, or other academic work of another person. (1.06) fabricate or falsify data or results.” (From MSU’s General Student Regulations, Protection of Scholarship and Grades)

Students are encouraged to discuss the course material, papers, writing assignments, and projects with their peers, both in and out of class. However, it is expected that all course assignments, including oral presentations, will be completed by students individually without assistance from any source. You are not authorized to use the www.allmsu.com website to complete any course work in TE 407-408. (In some cases, to be announced by course instructors, assignments can be completed by pairs and/or groups of students working together; in such cases, a pair and/or group of students can turn in a single assignment.) Students are encouraged to see the course instructors with any questions or concerns about plagiarism or improper working together.

Students who violate MSU rules may receive a penalty grade, including but not limited to a failing grade on the assignment or in the course and/or removal from the program.
## Course Schedule – Seminars

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Topic</th>
<th>Reading</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 29</td>
<td>Aug 31</td>
<td>Introduction to course</td>
<td>None</td>
<td>ANGEL check-in</td>
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<tr>
<td>2</td>
<td>Sept 5</td>
<td>Sept 7</td>
<td>Intro to observing teaching</td>
<td>Ayres-challenge</td>
<td>Reflection #1</td>
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<td>3</td>
<td>Sept 12</td>
<td>Sept 14</td>
<td>More on observing teaching</td>
<td>None (watch video)</td>
<td>Reflection #2</td>
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<td>Sept 19</td>
<td>Sept 21</td>
<td>Teacher-centered instruction</td>
<td>Callahan – teacher</td>
<td>Reflection #3</td>
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<tr>
<td>5</td>
<td>Sept 26</td>
<td>Sept 28</td>
<td>Questioning strategies; Student-centered instruction</td>
<td>Callahan – student</td>
<td>Reflection #4</td>
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<tr>
<td>6</td>
<td>Oct 3</td>
<td>Oct 5</td>
<td>Student-centered instruction and inquiry</td>
<td>One chapter from three different curriculum chapters on exponents</td>
<td>Reflection #5</td>
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<tr>
<td>7</td>
<td>Oct 10</td>
<td>Oct 12</td>
<td>Inquiry; lesson planning; curriculum comparison</td>
<td>One section from a textbook chapter on exponents</td>
<td>Reflection #6</td>
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<tr>
<td>8</td>
<td>Oct 17</td>
<td>Oct 19</td>
<td>Lesson planning; Algebra content</td>
<td>Table of contents from 5 Algebra I textbooks</td>
<td>Reflection #7</td>
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<tr>
<td>9</td>
<td>Oct 24</td>
<td>Oct 26</td>
<td>Assessment; Bloom’s Taxonomy</td>
<td>NCTM Assessment principle; two articles on assessment</td>
<td>Reflection #8</td>
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<td>10</td>
<td>Oct 31</td>
<td>Nov 2</td>
<td>Assessment, test creation and Bloom’s Taxonomy</td>
<td>none</td>
<td>One-day teach paper</td>
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<tr>
<td>11</td>
<td>Nov 7</td>
<td>Nov 9</td>
<td>No Child Left Behind; test creation and grading</td>
<td>none</td>
<td>Mentor teacher interview</td>
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<td>12</td>
<td>Nov 14</td>
<td>Nov 16</td>
<td>Test creation and grading; Algebra content; graphing calc</td>
<td>none</td>
<td>Observation analysis paper</td>
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<tr>
<td>13</td>
<td>Nov 21</td>
<td>Nov 23</td>
<td>Video observation post-test</td>
<td>none</td>
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<tr>
<td>14</td>
<td>Nov 28</td>
<td>Nov 30</td>
<td>Classroom management; going over homework</td>
<td>none</td>
<td>Field checklist</td>
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<td>15</td>
<td>Dec 5</td>
<td>Dec 7</td>
<td>Problem-solving; end of term evaluations</td>
<td>none</td>
<td>Two-day teach paper</td>
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