# MA350 SENIOR HIGH SCHOOL MATHEMATICS METHODS AND MATERIALS

Fall Semester 2002 M-W-F 11:00-11:50 WS 3806

**Prerequisite**: MA312 and MA331 (Math courses may be taken concurrently with MA350. ED349 must be taken concurrently or prior to MA350. You can take this class only if you are planning to student teach in Winter 2003 or Fall 2003. See me if your schedule does not fit this rule.

**Instructor**: Dr. Donald Zalewski NSF 1111
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**Office Hours**: 10:00-10:45 MWRF 10:45 -12:00 on Thursdays 2:00-2:45 MWRF
Other times by appointment

**Required Materials:**

1. A graphing calculator
2. A computer (You will be visiting many web sites. NCTM and Michigan publications are on line.)
3. Copies of ***The Mathematics Teacher*** (Purchase arranged through instructor).
4. A notebook to use as a diary of school visits
5. Two NCTM publications
   a. ***Connecting Mathematics*** *(Must purchase this one.)*
   b. ***Principles and Standards for School Mathematics***
   c. ***Michigan Curriculum Frameworks***
   (Good news! You do not have to buy documents b and c. They are available in the Seaborg media center and also on line.)
6. Other materials to be made or purchased

**Course Overview:**

MA350 is designed to help prepare you for student teaching and for your future years as a professional mathematics teacher. It will acquaint you with the contemporary mathematics curriculum and technology, and help you develop methods and materials for teaching mathematics in high school. During the semester, you will be given several opportunities to plan and present lessons to your peers. The course will also introduce you to resources for future reference and professional growth.

Field experiences should help you interact with teachers and students so you can begin to develop your own philosophy and teaching style. You should also teach some lessons in the classrooms where you observe.

**Course Grade:**

Will be determined by combining the grades for class participation, projects, presentations, and tests. The total points you earn divided by the total number of points possible will produce a percent which is graded this way: A:93-100% A-:90-92% B+: 87-89% B:83-86% B-:80-82% etc.

If a project is handed in late, points will be deducted if no prior arrangements have been made. You will lose 10% if turned in on the same day, 20% if one day late, 40 % if two days late, etc.

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**If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office at 1104 University Center (227-1737; TTY 227-1543). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.**

**Course Activities:**

1. Attend class and participate in discussions regularly.
2. Complete assignments and projects on time.
3. Field experience in schools (20 hrs). Keep a diary of your visits and activities. Write neatly or else print.
4. Present and evaluate mathematics mini-lessons.
5. Make at least one presentation in the classroom where you are observing
6. Attend the MCTM/Seaborg Conference on October 11. There are no NMU classes on October 11, but you are required to attend the conference sessions. We are hosting the state conference of the MCTM and it will offer numerous good sessions for the K-12 classroom teacher. It is too good of an opportunity to miss. Plan to attend some sessions on Saturday too.

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**I. Objectives of the Course** During MA350, the student should:

- A. Develop a philosophy of teaching mathematics.
- B. Discuss issues and problems in school mathematics.
- C. Clarify mathematical topics and skills in 7-12 mathematics.
- D. Develop a variety of teaching strategies, materials, and technologies for grades 7-12.
- E. Demonstrate skills in short and long range planning.
- F. Use hard copy and electronic resources to enhance teaching.
- G. Identify a variety of ways to evaluate the learning of mathematics.

**II. Course Content**

- A. Issues in mathematics education.
  1. Women and minorities in mathematics: opportunity for all?
  2. History and new directions of the k-12 mathematics curriculum
  3. The role of technology in teaching and learning mathematics
- B. The mathematics curriculum
  1. Summary of the teaching strategies, scope and sequence for grades K-8.
  2. Goals and objectives of the 9-12 curriculum
  3. Teaching strategies, models, materials, and technology for 9-12
- C. Lesson and unit planning
  1. Goals and objectives
  2. Short term and long range plans
  3. Planning and teaching lessons
- D. Evaluation
  1. Ways to evaluate
  2. Tests and testing
  3. State and national assessments
- E. Professional growth
  1. Literature and resources
  2. Organizations, conferences and workshops