

MA 350 Methods and Materials in Teaching Senior High School Mathematics
Fall Semester 2004 M-W-F 11:00-11:50 WS 3616

Prerequisites: Admission to the methods phase of teacher education. Concurrent (or prior) enrollment in ED 349, MA 312, and MA 331, or consent of instructor. You can take this class now only if you will do student teaching in Winter 2005 or Fall 2005. (See me if you do not fit this description.)

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Office Hours: M, W, F 10:00 - 10:45 by prior appointment
M, W, R, F 2:00 - 3:30
Other times by appointment.

Required Materials:

- Johnson, David R. *Every Minute Counts: Making Your Math Class Work*. (Purchase at bookstore)
- Johnson, David R. *Motivation Counts: Teaching Techniques that Work*. (Purchase at bookstore)
- Student membership in the National Council of Teachers of Mathematics (NCTM).
Join on line at <http://www.nctm.org/membership/application/> or by calling the NCTM Customer Service Department at (800) 235-7566. Student membership is \$36/year and includes a subscription to one on-line journal. (You may give my name when asked for the "sponsoring member name" on the application form.) Additional information about NCTM membership is described in a separate handout. You must provide the instructor with proof of membership (copy of membership confirmation from NCTM can be e-mailed or printed out and given to the instructor). You should join before September 8 so you can start to access the on-line resources. Assignments will be given that require readings available on the "member's only" portion of the NCTM Web site. [To learn more about the National Council of Teachers of Mathematics, visit the NCTM Home Page at <<http://www.nctm.org/>>].
- Other materials to be made or purchased as needed for in-class presentations.

Course Overview:

MA 350 helps to prepare you for student teaching and for your future career as a mathematics teacher. It is designed to acquaint you with the contemporary mathematics curriculum and instructional resources, and to help you develop methods and strategies for teaching high-school mathematics. During the semester you will have opportunities to plan and present lessons to your peers, and the required field experiences will provide opportunities for you to interact with high-school students and teachers. These experiences, together with class activities, discussions, and assignments, will enable you to begin to formulate your own teaching philosophy and instructional style.

Course Requirements:

- Attend all classes and participate actively in class discussions and activities. (Attendance will be taken daily.)
- Complete assignments on time. Written assignments are to be done with a word processor.
- Field experiences in schools, at least 20 hours during the course of the semester. Written reports of your field experiences will also be required.
- Present and evaluate mini-lessons as assigned, both in this class and in your field placement.

Course Objectives: During MA 350, students are expected to:

- Develop a philosophy of mathematics teaching.
- Discuss recommendations, goals, and issues in school mathematics.
- Develop an understanding of the curriculum and expected outcomes of school mathematics.
- Develop a variety of teaching strategies employing appropriate instructional materials and technologies.
- Demonstrate ability to plan, deliver, and evaluate mathematics lessons.

Course Content:

- Goals of school mathematics: Overview of K-12 content and recommendations; goals, objectives, and content of 9-12 mathematics (with emphasis on algebra and geometry components); teaching methods, materials, and technology; national and state standards and frameworks.
- Classroom interaction: Strategies for teaching concepts, generalizations, skills; questioning techniques; small- and large-group interaction; classroom management.
- Planning for instruction: Specifying goals and objectives; lesson and unit plans.
- Evaluation: Evaluation vs. testing; methods of evaluation; grading; state and national assessments.
- Professional development for mathematics teachers: Reflective teaching; opportunities for professional growth; professional literature and resources; evaluating teaching effectiveness.

Grading:

Points will be assigned for class participation, projects, presentations, assignments, and tests. Your grade will be determined by the percentage of the total possible points that you earn, as follows:

A=93-100%; A—=90-92%; B+=87-89%; B=83-86%; B—=80-82%; etc.

As teachers, you will be expected to communicate with students, parents, administrators, and others in correct and proper English. Therefore, such things as grammar, spelling, punctuation, and syntax will be considered in the evaluation of your written work. Late assignments will have points deducted unless prior arrangements have been made.

Special Opportunity:

A regional conference of the National Council of Teachers of Mathematics will be held in Minneapolis, Minnesota, on November 11-13, 2004. Attendance at a regional NCTM conference is an outstanding professional opportunity, and one of the best ways possible to become assimilated into the mathematics teaching profession. Faculty from the NCTM Mathematics Department will be attending this conference, traveling by NMU vehicle leaving Thursday, November 11, and returning Sunday, November 14. Methods students and student teachers are highly encouraged to take advantage of this opportunity to attend the conference. NCTM student members receive free registration at regional conferences (normal registration fee is \$187.) You would be responsible for your own hotel and meal costs; we will discuss transportation options and possible financial support with those interested in attending.

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office at 2001 C. B. Hedgcock (227-1700; 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.