MA 350 Methods and Materials for Teaching Senior High School Mathematics

Fall Semester 2007 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 2007 or Fall 2007. (See me if you do not fit this description.)

Instructor: Dr. Peggy House office: NSF 1123
phone: 227-2063 e-mail: phouse@nmu.edu

Office Hours: M and W 1:00 - 3:00; F 12:30 – 1:30; other times by appointment.

Required Materials:

1. Johnson, David R. *Every Minute Counts: Making Your Math Class Work.* (Purchase at bookstore)
2. Johnson, David R. *Motivation Counts: Teaching Techniques that Work.* (Purchase at bookstore)
3. Student membership in the National Council of Teachers of Mathematics (NCTM).

   Join on line at http://my.nctm.org/eBusiness/student.aspx or by calling the NCTM Customer Service Department at (800) 235-7566. Student membership is $38/year and includes a subscription to one on-line journal. (You should select the *Mathematics Teacher* as your journal.) You will be asked for my name and e-mail (above). [The NCTM home page is http://www.nctm.org/. Start there for more information about the organization.]

   You must provide me with proof of membership no later than the second week of the semester (either e-mail a copy of the membership confirmation from NCTM or printed it out and give it to me). Join before September 7 so you can start to access the on-line resources. Starting next week, assignments will be given that require readings available on the "member's only" portion of the NCTM Web site.

   Resources you will be required to access form NCTM include *Principles and Standards for School Mathematics* (2000), the *Mathematics Teacher*, and others.

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 and will be a component of the course grade.)
- Complete assignments on time. All written assignments are to be done with a word processor and submitted in hard copy..
- 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, present, 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.

Final Exam:

The final exam for this class is scheduled for Monday, December 10, 10:00 – 11:50 a.m.

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.