

MATH-490 Senior Seminar for Elementary and Middle School Programs
Spring 2007 Eric Kuennen 3 credits

Instructor: Dr. Eric Kuennen
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Class Time/Place: M, W, F: 12:40-1:40, Swart 2

Office Hours: My official office hours are: M, W, F: 10:20-11:30 and 3:00-4:00

However, when I am not teaching a class, I am usually in my office and available. My class schedule is posted on my door. Feel free to stop by at any time, or make an appointment.

Course Webpage: (D2L) <https://uwosh.courses.wisconsin.edu/>

Course Description: Seminar emphasizing problem solving and mathematical modeling in Elem/Middle School programs. Survey and study of research literature on the teaching and learning of mathematics, connections between the other courses in the mathematics minor. Experience with units from demonstration projects in middle school curriculum materials.

Pre-requisites: Senior status with major in elementary education and completion of 17 units (crs.) toward a minor in mathematics

Primary learning objectives:

- To understand the nature of mathematics and mathematics education, including theory and practice of mathematics teaching and learning. This course will focus on (1) what is mathematics and mathematical behavior, (2) how do humans learn mathematics, and (3) how should mathematics be taught? We will spend time in the classroom discussing selected readings on these topics, including the nature of mathematics, learning theory, an analysis of mathematics pedagogy, editorials on mathematics education, and research literature on student learning of elementary and middle grades mathematics.
- To explore and analyze elementary and middle school mathematics standards and curriculum materials. We will study the *National Council of Teachers of Mathematics (NCTM) Standards* for grades 5-8. We will study several NSF-funded curriculum units, and you will plan and present mathematics lessons based on those materials. We will use the curriculum materials to draw connections among mathematics topics, and draw connections to the research literature on the theory and practice of learning and teaching mathematics.

Texts and Materials:

1) *Readings for Math 490* by Beam, Seaman, and Szydlik (available at the UWO Bookstore). (Note: The syllabus at the beginning of this text will be modified by the syllabus you are reading now. Modifications to the research paper guidelines and the curriculum project guidelines may be made as well.)

2) *Principles and Standards for School Mathematics* (200). NCTM, Reston, VA. (This text is available free online for a 120-day period at <http://standards.nctm.org/> You may also purchase a hard copy at the site if you prefer.

3) *Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in China and the United States*. By Liping Ma. ISBN 0805829091. Available from online booksellers, such as Amazon.com, for \$29.95

4) *Connecting Mathematical Ideas: Middle School Video Cases to Support Teaching and Learning*. By Jo Boaler and Cathy Humphreys (2005). ISBN number 0325006709. Available from online booksellers, such as Amazon.com, for \$23.50

5) I will be providing you with additional readings and collections of units from NSF-funded curriculum projects for elementary and middle grades.

Evaluation:

1. **Research paper:** You will write a 6-8 page research paper on a topic of your choice, motivated by the class readings or discussions from the first 5 weeks of the course, supported by scholarly research literature. The research paper is worth 20% of your grade.

2. **Curriculum projects and presentations.** Working in teams of 2 or 3 people, you will prepare and present two lessons, based on provided curriculum materials. You will make written reports about your project, as well as evaluate other group's lesson presentations. Each curriculum project is worth 20% of your grade.

3. **Journal and Participation.** In this seminar course, we will discuss prepared readings. Your careful reading of assigned papers and chapters, and our daily preparation for and contribution to these class discussions is very important. It will be your obligation to demonstrate to me that you have both completed and thought about the readings and assignments (otherwise I will assume you have not). You will demonstrate this in two ways: 1) You will contribute knowledgably to class discussions, and 2) You will keep a journal with dated entries with your ideas, questions and comments reflecting on the assigned readings and class discussions. I will collect this journal periodically. The journal and participation is worth 20% of your grade.

4. **Additional Written Assignments.** We will also have several smaller written assignments or problems to solve. These will compose the remaining 20% of your grade.

Summary:	20%	Research Paper
	20%	Curriculum Project #1
	20%	Curriculum Project #2
	20%	Journal and Participation
	20%	Additional Written Assignments (Homework)

Grading Scale:

To calculate your grade at any point in the term, use the following scale.

I reserve the right to lower these percentages, but they will not be raised.

A	90-100	B	80-85	C	70-75	D	60-65
AB	86-89	BC	76-79	CD	66-69	F	0-59

Grades are based on performance, not need. No "extra" credit will be offered.

Incompletes: According to the Student Bulletin, an Incomplete grade can be assigned only when a student is unable to complete the course work because of illness, injury, or other extenuating circumstances beyond the student's control.

Dropping the course: According to the Student Bulletin, the primary responsibility of dropping a class resides with the student. Sept. 18th is the last day to drop with a full refund. October 19th is the last day to withdraw from the course. A student wanting to drop a course after that deadline may appeal with a REQUEST FOR LATE DROP FORM describing relevant extenuating circumstances beyond the student's control.

Academic Misconduct: Any form of academic misconduct including cheating on a quiz or exam, or in any way seeking to claim credit for the work or efforts of another person will be dealt with in accordance with system policy UWS 14, as referred to in the UW Oshkosh Student Discipline code. (<http://www.tts.uwosh.edu/dean/studentdisciplinecode.html>) Penalties that may be imposed include a failing grade for the course, disciplinary probation, and expulsion from the university.

An Invitation:

Let me encourage each of you to spend time with me during office hours. Good students take advantage of the opportunity for one-on-one time with their instructors. We can talk about your course concerns, about problem assignments, about quizzes and exams, or explore some aspect of the course that you find exciting or challenging or frustrating! My time is your time during office hours. Each of you is welcome!

I welcome your feedback on how the course is going for you. In order to encourage your comments, both positive and negative, I have set up a Feedback Forum on Desire2Learn™, where you may share your thoughts with me and with your classmates anonymously at anytime. I will check this forum regularly and respond to your suggestions where possible.