

Mount Saint Mary College

Newburgh, NY 12550

Division of Education

ED 5544-01 Teaching Mathematics to Adolescents

Spring 2008

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Required text: Posamentier, Smith, and Stepelman, Teaching Secondary Mathematics – Techniques and Enrichment Units (7th Edition), Pearson, 2006.

Additional requirements:

TI-83 or 84

New York State Standards for Mathematics 7-12

Ability to use Moodle

Optional but helpful reference: Borich, Effective Teaching Methods (6th edition) Pearson, 2007

Office hours: To be arranged with the instructor.

Course Description:

This course is designed to give an overview of methods, materials, and curriculum for teaching mathematics and interdisciplinary connections in keeping with the New York State Learning Standards. The goal is to help prospective secondary mathematics teachers acquire the skills, knowledge, and reflective practice necessary for successful teaching. Students will focus on unit and curriculum development, including individualized and student-centered approaches to instruction and adaptation for students with disabilities, and will become familiar with state and national resources (NCTM), and internet resources. Consideration will be given to the integration of technology for teaching. *Fieldwork is required.*

Course objectives: At the completion of the course students should be able to:

1. Identify and model strategies used for problem solving in grades 7-12
2. Use a variety of manipulative and visual materials for exploration and development of mathematical concepts in grades 7-12.
3. Use a variety of resource materials such as software, print materials, technology, and activity files to enhance the learning of mathematics.
4. Select appropriate mathematical tasks that will stimulate students'

development of mathematical concepts and skills.

5. Use oral and written discourse between the teacher and students, among the students, between the teacher and the community in an effort to develop and extend students' mathematical understanding.
6. Create a learning environment in which students feel free to take risks.
7. Use instructional strategies in mathematics that include group work, accommodations of different learning styles, application of knowledge of current national and state guidelines relating to mathematics instruction.
8. Use assessment in the classroom to make instructional decisions.

Course requirements:

1. All students are expected to attend all classes and be prepared to participate in discussion.
2. Students are expected to complete all activities and homework assignments on time. Late assignments will be docked .5 letter grade
3. Grades will be based on:
 - Class assignments and discussion (including those on Moodle) 20%
 - Reviews of articles 20 %
 - Lesson plans – direct, cooperative and inquiry 40%
 - Microteachings 20%

Grading Scale:

A	95-100	C+	77-79	F	Below 65
A-	90-94	C	73-76		
B+	87-89	C -	70-72		
B	83-86	D+	67-69		
B-	80-82	D	65-68		

Writing Policy

In an effort to increase the professional quality of student writing, the Division of Education has the following policy in all certification courses:

In grading any work submitted by a candidate, if the instructor identifies five or more errors in spelling (including apostrophes), grammar, and/or sentence construction, the instructor will discontinue reading that work and will return it to the candidate with a grade of zero. At the discretion of the instructor, the candidate may correct the document and resubmit it once (only). In this case, the candidate may receive no more than the equivalent of 83% on the document, receiving a lower grade if otherwise warranted. This grade will be final for the document. (This policy does not apply to work written in class such as on a test.)

Academic Dishonesty Statement:

Mount Saint Mary College students are expected to demonstrate a high

standard of academic honesty in all aspects of their academic work and college life as stated in the student handbook pg 27. It is ok to use ideas from internet sources or from journal articles but you must document these sources.

Disability Statement:

Reasonable accommodations, as arranged through the disabilities coordinator, Will be provided for students with documented disabilities. Contact the MSMC Disabilities Coordinator. Further Information may be found in the MSMC catalog

Tentative Outline

Date	Topic	Assignment
1/23/08	Overview of Syllabus Standards, goals and objectives and assessment	Choose a math topic and write the objectives for a lesson plan and reference the NY State Standards. Read pgs 21-46 and respond to Homework forum Three people prepare article review.
1/30/08	Differentiated instruction and cooperative learning. Work in groups to answer questions 4 and 10 on pg 52. Three people give article review	Post your answer to one of the questions (not 4 or 10) on pg 52 to the forum. Respond to at least two of your classmates. Read Characteristics of Mathematical Instructional tasks pgs 52-55. Three people prepare article review.
2/6/08	Using lesson 4 or 5 (pg 61 -62) work in your group to answer 1-10 on pg 55. Three people give article reviews	Finish group work on lesson 4 and 5. Read pgs 63-73. Three people prepare article review.
2/13/08	Discuss revised lesson plans. Motivation and Questioning Three people give article review	Exercise # 5 pg 74. You can use two different topics if you want. Come with a topic for your first lesson plan. Three people prepare article review
2/20/08	Present your motivational activity to the class as a microteaching. Work on lesson plan so I can give guidance.	Lesson plan #1 due Three people prepare article review
2/27/08	Classroom questioning pgs 74-83 Discuss exercise #1 pg 83 Three people present article review	Read pgs 101-108 Answer question #4 pg 108 Three people prepare article review
3/5/08	Discuss answers to #4 pg 108. Introduction to problem solving Three people present journal articles.	Look for a journal article or internet source on problem solving and post some of the conclusions on the forum. Respond to at least two of your fellow students postings. Prepare a micro lesson using one of the 10 problem solving strategies.
3/12/08	Present micro lesson.	Look for a journal article or internet

	Using technology to enhance math instruction. Calculators.	source on problem solving and post some of the conclusions on the forum.
3/26/08	Sketchpad	Lesson plan #2 Due Pg 164 choose one from exercise #2
4/2/08	Sketchpad	Pg. 164 #1
4/9/08	Assessment	Find an article on assessment and post some conclusions to the forum
4/16/08	Assessment	Pg 196, #3 develop a 10 minute quiz for assessing a or b. #6 design a rubric for the performance task
4/23/08	Demonstration Lessons (3)	
4/30/08	Demonstration Lessons (3)	
5/7/08	Demonstration Lessons (3)	