

# MATH 299E

## Orientation Seminar (2 credits)

Winter 2011

### General Information

Instructor(s): Mark Oursland

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Meeting Time: M,W 10:00-10:50 AM

Location: Black 139

Office Hours: M-Th 8:20-9:00AM T, Th 10-11 AM

### Course Description

This course is designed to prepare preservice secondary teacher for their mathematics education program. Student will study the basic processes of this program: Problem solving, writing, and use of technology. These three processes will be integrated and immersed in mathematical content. Student will be assessed with an electronic portfolio using Live Text. This course only initiates their mathematics education electronic portfolio. The electronic portfolio will be completed in Math 499E at which point students will have meet all the program, NCATE, NCTM, and Washington State Standards for secondary mathematics teachers.

### Prerequisites

The prerequisites are MATH 260 and entrance to the Teaching Secondary Mathematics Program.

### Course Rationale

To meet the expectations for mathematics educators of secondary students a shift in content is needed. Instructional, and assessment practices is crucial. The Curriculum and Evaluation Standards of School Mathematics (NCTM, 1989) outline the specific changes needed in pre-service mathematics education. "Today's jobs demand the use of mathematically driven technological tools. If schools do not have a level of technology equivalent to the level found outside of schools, and if they do not prepare students appropriately with it, then they are placing their student at a serious disadvantage." In addition, "it means ensuring that teacher have adequate technological and mathematical knowledge to provide appropriate support for their students." This course is designed to achieve the needed changes in mathematics education and prepare preservice secondary students with the necessary mathematical content to implement a reform program. The course emphasizes learning mathematics using technology, problem solving strategies, and mathematical writing.

### Required Course Materials

- Blackboard account with enrollment in MATH 299E
- LiveText account
- Access to Washington State Academic Learning Requirements for Math  
<http://www.k12.wa.us/CurriculumInstruct/default.aspx>
- Access to the National Council of Teachers of Mathematics standards at <http://www.nctm.org> (free 90-day membership)
- Graphing Calculator

### Learner Outcomes and Assessment

By the end of the course, students will:

Outcomes	Assessment	Standards
be able to explain what good mathematics teaching is and how student learn mathematics.	Philosophy of Teaching Mathematics and How Students Learn Mathematics and Livetext Portfolio	NCTM 1- 16
be able to solve problems using a variety of strategies	Mathematical Paper and Livetext Portfolio	NCTM 1
be able to demonstrate various presentation and calculation technologies, including calculator-based	Planning and teaching a lesson and livetext portfolio.	NCTM 6

technology, mathematical software, presentation software, and technical word-processing software		
be able to demonstrate oral and written proficiency in technical presentations of mathematical communication and representations	Mathematical Paper and livetext portfolio.	NCTM 2, 5
be able to use mathematical reasoning and proof to communication mathematical thoughts	Mathematical Paper and livetext portfolio.	NCTM 3
be able to explain connections between mathematical concepts and mathematics and real-world situations.	Mathematical Paper and livetext portfolio.	NCTM 4
be able to develop and teach a lesson in a secondary mathematics classroom.	Planning and teaching a lesson and livetext portfolio.	NCTM 16

The instructional and assessment strategies for this course are designed to inform you of your progress in achieving the performance outcomes. The instructors will give you feedback on your progress in meeting performance outcomes.

Assignment	Points
Philosophy of Teaching Mathematics Paper (25 points)	25
Lesson Plan	25
Teach a lesson (self, peer, instructor)	25
Paper (3 papers @25 points each)	75
Portfolio	100
Total Points	250

### Grading Scale

93-100% (A), 90-92.9% (A-) 87-89.9% (B+), 83-86.9% (B), 80-82.9% (B-), 77-79.9% (C+), 73-76.9% (C), 70-72.9% (C-), 67-69.9% (D+), 63-66.9% (D), 60-62.9% (D-) and 0-59.9% (F). Please see the CWU Catalog for the eligibility requirements for an incomplete (I).

### Performance Expectations

#### Professionalism

If you are to fully benefit from this class, you must attend class. As you prepare to become a teacher, you need to become accustomed to setting a good example for students. Attendance demonstrates professionalism and dedication. High quality work and organization demonstrate professionalism, as well. In addition, work must be turned in on time to receive full credit. The instructor reserves the right to make final decisions on any extraordinary circumstances that may interfere with your ability to turn your work in on time. Finally, you will not receive a grade, if your LiveText portfolio is incomplete at the closing of the quarter.

#### Schedule

The class calendar is tentative due to subject to change, but will be our tentative guideline for the course. If you miss a class, it is your responsibility to find out what was covered, announced, or assigned. In case of emergencies, it is your responsibility to contact the instructors as soon as possible. If a course deadline was missed, assessment alternatives are left up to the discretion of the instructors.

#### Suggestions for Success

Take responsibility for your own achievement. If you have questions regarding any assignment, ask the instructors. Communicate frequently.

### ADA Statement

Students with special needs or disabilities who desire academic accommodation are encouraged to submit a copy of the 'Confirmation of Eligibility for Academic Adjustments' from the Disability Support Services office as soon as possible so a plan can be developed that best serves the learning needs of the student. Students without this form should contact the Disability Support Services office in Bouillon 205 at 963-2171 or [dssrecept@cwu.edu](mailto:dssrecept@cwu.edu) as soon as possible.

## Tentative Schedule

Week	Topics	Assignment
Jan 3	Intro, syllabus, problems solving, introduction survey, Philosophy of Teaching Math	Philosophy of Teaching Math Paper Problem Solving Paper
Jan 10	Communicating and Representing Mathematics, Professional Resources, and Calculator use	Communication and Representation Paper
Jan 17	Mathematical Reasoning and Proof, Mathematical writing	Reasoning and Proof Paper
Jan 24	Teaching: Curriculum and aligning standards, instruction, and assessment	Lesson Plan
Jan 31	Mathematical Modeling and Technology	Lesson Plan
Feb 7	Testing Lesson Plans	Teaching and Teaching Assessment
Feb 14	Teaching a lesson, Self assessment	Teaching and Teaching Assessment
Feb 21	Teaching a Lesson, Teaching improvement	Teaching and Teaching Assessment
Feb 28	Teaching a Lesson, and Reflection Writing	Teaching and Teaching Assessment
Mar 7	Portfolio Writing	Portfolio
Mar 16	<b>Complete All Coursework</b>	