

METHODS AND MATERIAL IN MATHEMATICS - SECONDARY

MATH 324 | SPRING QUARTER 2013

INSTRUCTOR:

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COURSE DESCRIPTION:

Prospective teachers will learn and use the methods and materials needed to teach secondary school students mathematics with emphasis on standard-based curriculum, problems solving, teaching for understanding, equity, and research-based practices. The rubrics for these pedagogy activities are aligned with the Washington State TPA for secondary mathematics, EFC 340 livetext assessments, and EFC 350 livetext assessments. This course can be used to substitute for EFC 340 and EFC 350.

COURSE RATIONALE:

Curriculum and Evaluation Standards for School Mathematics (NCTM, 2000) outline specific changes needed in pre-service mathematics education. To meet the expectations of national stakeholders, pre-service candidates must develop knowledge, skills, and dispositions that enable the best K-12 teaching and learning possible. This will be influenced by the latest brain research and the use of best practices in mathematics. Since many teachers will teach as they were taught, it is crucial that pre-service training include both elements. In particular, effective learning will take place when student(s) (a) preconceptions are engaged, (b) they do activities consistent with professionals in the field, and (c) they are aware of how (and what) they learn. Research indicates the best learning is based on discovery via inquiry and collaborative problem solving in balance with direct instruction. Therefore, your training as future professional educators will emphasize these elements.

COURSE GOALS:

- Teacher candidates will plan and use a standards-based assessment system to analyze student work, make inference on what students know and can do, and evaluate what feedback and further instruction student need to meet the learning targets.
- Teacher candidates will plan and use multiple formative, summative, and self-assessment strategies to systematically analyze, make inferences, and evaluate instructional practices to guide further instruction and suggest changes to improve teaching effectiveness.
- Teachers will use knowledge of students to plan and teach a learning segment (assessed by TPA rubrics 1-15) aligned with the CCSSM.
- Teacher candidates will apply their knowledge of instruction, curriculum and classroom management to enable 6-12 students achieve learning targets aligned with CCSS Math in a positive learning environment.

COURSE RESOURCES:

- Blackboard account with enrollment in MATH 324
- LiveText account
- Handouts provided by the instructors
- 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)
- Finger Print clearance

COURSE OBJECTIVES:

By the end of the course, teacher candidates will be able to:

Outcomes	Assessment	Standards
be able to explain what good mathematics teaching is and how student learn mathematics.	Philosophy of Teaching Mathematics, wiki writing, blogging, and Lt Portfolio	CTL 1
plan for instruction and assessment. Candidates will demonstrate this by describe their plans for the learning segment and explain how their instruction is appropriate for the students they are teaching.	Dispositions of Teaching Secondary Mathematics Wiki, blogging, and Livetext Portfolio	CTL 1 WAC V
effective instruct and engage students in learning aligned to the CCSS Math. Candidates will demonstrate this by reflecting on their instruction and from field supervisor assessment.	Four individual and one group lesson plan, unit plan (learning segment), teaching in a local classroom, and livetext portfolio.	CTL 1 WAC V
assess student learning, by analyzing student work, and using this information to guide instruction and plan next step instruction.	Four individual and one group lesson plan, unit plan (learning segment), teaching in a local classroom, and livetext portfolio.	CTL 1 WAC V
identify the language demands required by the math lessons they are planning and directly teach both language function and vocabulary in a manner that develops math understanding.	Four individual and one group lesson plan, unit plan (learning segment), teaching in a local classroom, and livetext portfolio.	CTL 1 WAC V
communicate learning targets and require students reflect on their progress in meeting the learning targets.	Four individual and one group lesson plan, unit plan, teaching in a local classroom, and livetext portfolio.	CTL 1 WAC V
develop, teach, and evaluate a unit plan that uses multiple instructional methods, appropriate technology, and an assessment system aligned to the CCSS Math.	Plan, teach, and evaluate a learning segment (at least 3 lessons that are part of a two week unit) in a local school and place on livetext portfolio.	CTL 1 WAC V
Develop, implement, and reflect on a classroom managements system that used in a mathematics classroom.	The plan and reflections of the implementation of the classroom management system will be place on the livetext portfolio.	CTL 1 WAC V

ASSIGNMENTS AND EVALUATION GUIDELINES:

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
Behavior Modification Plan	20
Field Teaching Blogs Writing	60
Classroom Mangagement Quizzes	60
Group Lesson Planning Activities (Modeling)	20
Classroom Management Plan (30 points) and Parent Letter (20 points)	50
Individual Lesson Planning Acitivity (Technology)	20
Unit Plan	40
Field Observations (self, peer, instructor) completed and attached on Livetext Portfolio	30
Learning Segment	60
Disposition of Teaching Mathematics Blog	60
Livetext Portfolio	100
Total Points	520

Candidates will be assigned tutoring/teaching positions during the first week of class. Candidates can expect to observe and support instruction of the cooperating teacher during the first two weeks and take more leadership in the

instruction during the final 8 weeks (teach at least two lessons). Expect to spend at least 5 hours teaching, planning, and tutoring per week (classroom time will be reduced by 6 hours to accommodate for the field experiences).

Grading Scale

93-100% = A, 90-93% = A-, 87-90% = B+, 83-87% = B, 80-83% = B-, 77-80% = C+, 73-77% = C, 70-73% = C-, 67-70% = D+, 63-67% = D, 60-63% = D-, 0-60% = F Please see the CWU Catalog for the eligibility requirements for an incomplete (I).

Performance Expectations

All of the assignments and directions can be found in the Assignments menu of Blackboard. All lessons can be found in the Content menu and all resources can be found in the Links menu.

COURSE POLICIES:

Instructor Feedback/Communication

I will be reading the Discussion Boards and replying to messages occasionally. You will receive specific feedback on your Syllabus Draft and your Course Syllabus in the form of electronic comments appended to your electronic submission. I will use the Announcements tool in Blackboard to communicate changes to the course and other course information.

Suggestions for Success

Take the responsibility for your own achievement of these performance objectives. You can get individual help by e-mail or in person in my office. If at any time you have trouble-using Blackboard or do not understand an assignment make sure to contact the instructor. Use the activities, assignments, assessments and people such as the instructor to insure that you understand the mathematical teaching concepts and can demonstrated this understanding in the form of the performance objectives.

Student Feedback/Communication

I welcome all feedback on the course. My preferred method of communication with individual students is via email. I am also available for office hours. If you experience a legitimate emergency (according to my standards) that will prevent you from completing required coursework on time, I expect you to communicate with me at the earliest reasonable opportunity. Please state the nature of the emergency, and when you expect to turn in the coursework.

Submitting Electronic Files

All electronic files must be submitted in .doc or .pdf format. If you do not have Microsoft Word, you can download Open Office Writer for free at <http://www.openoffice.org/>. This will allow you to open the instruction files, make changes and save in .doc or .pdf.

Late and Uncompleted Work

- If extenuating circumstances exist, contact instructor.
- All course assignments must be completed to pass the course.

UNIVERSITY POLICIES:

Academic Integrity

Academic Integrity is a standard set for this course. Students are expected to complete all of their coursework and assignments using their original words and ideas and will properly cite the words and ideas of others. Students are also expected to be honest in their interactions with the instructor. A student found to have not upheld these expectations is subject to failing this course and shall be subject to disciplinary action or sanction. The University catalog defines the term "academic dishonesty" in all its forms including, but not limited to:

- cheating on tests;
- copying from another student's test paper;

- using materials during a test not authorized by the person giving the test;
- collaboration with any other person during a test without authority;
- knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of an unadministered test or information about an unadministered test;
- bribing any other person to obtain an unadministered test or information about an unadministered test; substitution for another student or permitting any other person to substitute for oneself to take a test; plagiarism" which shall mean the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work offered for credit;
- "collusion" which shall mean the unauthorized collaboration with any other person in preparing work offered for credit.

Documented incidences of Academic Dishonesty will be referred to Office of the Vice President of Student Affairs.

Special Needs

If you have a disability that may prevent you from meeting course requirements, contact the instructor immediately to file a Student Disability Statement and to develop an Accommodation Plan. Course requirements will not be waived but reasonable accommodations will be developed to help you meet the requirements. You are expected to work with the instructor and the CWU Disability Support Specialist to develop and implement a reasonable Accommodation Plan. For contact information at Center for Disability Services (CDS) please visit <http://www.cwu.edu/~dss/cms/>.