

METHODS AND MATERIALS IN MATHEMATICS - SECONDARY

MATH 324 | SPRING QUARTER 2015

INSTRUCTOR:

Dr. Teri Willard

Class Meeting Time: 3:00 – 4:40, M & W

Meeting Room – Hertz 120

Field Experience: Time and Location by Student

Office: Bouillon Hall 114

Office Hours: 1:00 to 1:50 am, M – Th or by appointment or email

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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 standards-based curriculum, mathematical reasoning, problem 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 as a substitute for EFC 340 and EFC 350.

COURSE RATIONALE:

Curriculum and Evaluation Standards for School Mathematics (NCTM, 2000) outlines 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. Achievement of these goals will be developed by examining the latest brain research and best practices in mathematics. Since it has been shown that many teachers will teach as they were taught, it is crucial that pre-service training include knowledge of educational research and best practices. In particular, effective learning will take place when student(s) (a) examine their own preconceptions, (b) perform activities consistent with professionals in the field, and (c) become 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 inferences about what students know and can do; and evaluate the feedback and further instruction students will 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) that is aligned with the CCSSM.
- Teacher candidates will apply their knowledge of instruction, curriculum, and classroom management to enable 6-12 students to achieve learning targets aligned with CCSS Math while maintaining a positive learning environment.

COURSE RESOURCES:

- Canvas account with enrollment in MATH 324
- Textbook: *Building Classroom Discipline* Eleventh Edition, C. M. Charles

- LiveText account
- Handouts provided by the instructor
- 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 current – **ABSOLUTELY ESSENTIAL!**

COURSE OBJECTIVES:

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

Outcomes	Assessment	Standards
Explain what effective mathematics teaching is and how students learn mathematics.	Philosophy of Teaching Mathematics, Dispositions of Teaching Secondary Mathematics; pertinent material in Livetext portfolio	CTL 1
Plan for instruction and assessment. Demonstrate this by describing their plans for the learning segment and by explaining how their instruction is appropriate for the students they are teaching.	Dispositions of Teaching Secondary Mathematics, pertinent material in Livetext	CTL 1 WAC V
Effectively instruct and engage students in learning aligned to the CCSS Mathematics Standards. Demonstrate this by reflecting on their instruction and by the assessments made by their field supervisor.	classroom activities; specific lesson plans, unit plan (learning segment), teaching in a local classroom; pertinent material in Livetext	CTL 1 WAC V
Assess student learning by analyzing student work and use this information to guide instruction and plan next step instruction.	classroom activities, specific lesson plans, unit plan (learning segment), teaching in a local classroom; pertinent material in Livetext	CTL 1 WAC V
Identify the language demands required by the mathematics lesson candidate's plan. Directly teach both language function and vocabulary in a manner that develops mathematical understanding.	classroom activities, specific lesson plans, unit plan (learning segment), teaching in a local classroom; pertinent material in Livetext	CTL 1 WAC V
Communicate learning targets and require students to reflect on their progress in meeting the learning targets.	classroom activities, specific lesson plans, unit plan (learning segment), teaching in a local classroom; pertinent material in Livetext	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 Mathematics.	Plan, teach, and evaluate a learning segment (at least 3 lessons that are part of a two week unit) in a local school; classroom activities, specific lesson plans, unit plan (learning segment), teaching in a local classroom. pertinent material in Livetext	CTL 1 WAC V
Develop, implement, and reflect on a classroom management system that could be used in a mathematics classroom.	Write a plan for a classroom management system based upon research and course readings. pertinent material in Livetext	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 five focus goals in this course are:

- 1. field experience:** This includes teaching, tutoring, and/or assisting a classroom teacher depending on the needs in the classroom in which you are placed. You can expect to observe and support the instruction of the cooperating teacher during the first two weeks and take more leadership in the instruction during the final 8 weeks. (You must teach one lesson for the mini-TPA. See table below.). Expect to spend at least 5 hours teaching, planning, and tutoring per week. Keep notes on your experience because you will be writing a reflection on your experience and will need some specifics.
- 2. classroom management/discipline plan:** The plan includes a parent letter and behavior modification plan. Out-of-class **reading** and **quizzes** are part of this goal.
- 3. Specific lesson plans and mini-TPA assessment:** These assessments include preparing a learning segment and preparing for and teaching a lesson(s) in the classroom.
- 4. written reflections:** These assignments assess your beliefs and practices.
- 5. class attendance and participation:** Class meets twice per week with occasional graded activities based upon participation.

Your Livetext portfolio will contain evidence of goals **1 – 4**. **Critical:** If you do not post the starred items (*) in your LiveText Portfolio you will receive a grade of F for the class.

Assignment	Points
Field Experience	(170)
Field experience time (online reports) The minimum requirement is 30 hours including actual classroom time and planning time.	80
* Written reflections on topics such as equitable teaching practices, stimulating curriculum, etc – posted in Livetext portfolio	30
* Field Observation Evaluation Documents (self, peer, instructor) – completed and attached on Livetext Portfolio	60
Classroom Management/Discipline	(120)
Classroom Management Quizzes 6 @ 10 points (one drop)	50
Context Section and Parent Letter – a part of the final document	20
* Final Classroom Management Plan (includes edited Context and Parent Letter)	50
Lesson Plans and Mini-TPA	(260)
You will be writing several lesson plans that you will not teach. These plans will have an abbreviated format from the TPA requirements.	60
Drafts of Various Sections with Strict Due Dates	80
* Mini-TPA Assessment: Unit Plan Official Write-up: This will include your edited drafts of the sections noted above. Sections to be completed are Tasks 1, 2, and 3 include the complete lesson plan for the lesson you teach including all handouts. This will be scored using the TPA rubrics.	120
Class Attendance and Participation	(100)
Class activities, participation, and attendance (2 drops allowed)	100
Livetext Portfolio (Notice: Your evaluations are in the 1st category – 30 pts.)	(50)
The portfolio must be submitted and complete on the due date. You will receive a 20 point reduction per late day. If you do not include all the starred items, a grade of F for the class will result.	50
Total Points	700

Candidates will be assigned tutoring/teaching positions during the first week of class. Candidates can expect to observe and support the 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-, 57-60% = F Please see the CWU Catalog for the eligibility requirements for an incomplete (I).

COURSE POLICIES:**Instructor Feedback/Communication**

Student work will be submitted in hard copy form. After comments have been made, the final products are to be posted to your LiveText portfolio. Suggested revisions of all assignments are to be made after the first submission. If multiple submissions are required due to poor quality work, your grade will be affected at the discretion of the instructor.

Suggestions for Success

Take responsibility for your own achievement of the performance objectives. You can get individual help by e-mail or in person in my office. If at any time you have trouble-using Canvas or do not understand an assignment make sure to contact me. Use the activities, assignments, assessments and people (me, your classroom supervising teacher, classmates) to ensure that you understand the mathematical teaching concepts and can demonstrate 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 arise, contact me.
- All course assignments must be completed to pass the course and must be posted in your Livetext portfolio.

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/>.