MODERN ALGEBRA FOR TEACHERS

MATH 406 | SPRING QUARTER 2017

INSTRUCTOR:
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COURSE DESCRIPTION:
In this course middle level mathematics teaching candidates will explore and demonstrate their ability to understand and use algebra concepts and structures. A emphasis will be put on connecting algebra processes to the algebra axiomatic system through informal mathematical arguments.

COURSE RATIONALE:
Effective middle school teachers must understand and be able to teach the connections between algebra concepts and procedures. Especially the underpinning of algebra in the operations of rational and real numbers.

COURSE GOALS:
- Teacher candidates will be able to use mathematical reasoning to formally and informally explain both the how and why for algebraic properties and procedures.
- Teacher candidates will be able to solve problems related to algebra properties and function principles.
- Teachers candidates will be able to design math tasks to teach algebra connections within and outside of mathematics.

COURSE RESOURCES:
Course Textbook: No textbook

Canvas
- Canvas account with enrollment in MATH 406

Software and Hardware
- Livetext account and created Teaching Secondary Mathematics Portfolio.
- Documents in this course will be presented in .pdf. You will need Adobe Reader which you can obtain for free at http://get.adobe.com/reader/ . Written assignments may be presented as a Microsoft Word document (.doc). If you do not have Microsoft Word, you can use Open Office Writer (free at http://www.openoffice.org/.)

COURSE OBJECTIVES:

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

Outcomes	Assessment	Standards
Explain and use CCSS.Math mathematical practices.	Exercises, Quizzes, Tests, and Projects	WA MLM 1.0
Solve and graphically represent real life and mathematical problems using numerical and algebraic expressions, equations, inequalities, and systems of equations and inequalities.	Exercises, Quizzes, Tests, and Projects	WA MLM 3A
Understand the connections between proportional relationships, lines, and linear equations and use them to solve real world and mathematical problems.	Exercises, Quizzes, Tests, and Projects	WA MLM 3B
Use functional notation and interpret expressions for functions as they arise in terms of the situation they model (e.g., linear, quadratic, simple rational, and exponential).	Exercises, Quizzes, Tests, and Projects	WA MLM 3C
Understand operations on algebraic expressions and functions (e.g., polynomials, rationals, and roots).	Exercises, Quizzes, Tests, and Projects	WA MLM 3D
Apply arithmetic properties to algebraic expressions and equations.	Exercises, Quizzes, Tests, and Projects	WA MLM 3E
Write equations and inequalities in equivalent forms.	Exercises, Quizzes, Tests, and Projects	WA MLM 3F
Analyze and model functions.	Exercises, Quizzes, Tests, and Projects	WA MLM 3G
Explain the interrelationship between the various representations of a function (e.g., graphs, tables, algebraic expressions, concrete models, and contexts).	Exercises, Quizzes, Tests, and Projects	WA MLM 3H

ASSIGNMENTS AND EVALUATION GUIDELINES:

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

Assignment	Points
Exercises for each Module	40
Practice quizzes for each Module	40
Test for each Module	200
Algebra Project	50
Final	100
Total Points	**430**

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%, 0-60% = F Please see the CWU Catalog for the eligibility for an incomplete (I).

Performance Expectations

All of the assignments and directions can be found on Canvas. If a course deadline was missed, assessment alternatives are left up to the discretion of the instructors.

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/.