MODERN ALGEBRA FOR TEACHERS

MATH 406 | FALL 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:
Canvas account with enrollment in MATH 406

Software and Hardware Required
- 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	MLM 1.0
Solve and graphically represent real life and mathematical problems using numerical and algebraic expressions, equations, inequalities, and systems of equations.	Exercises, Quizzes, Tests, and Projects	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	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	MLM 3C
Understand operations on algebraic expressions and functions (e.g., polynomials, rationals, and roots).	Exercises, Quizzes, Tests, and Projects	MLM 3D
Apply arithmetic properties to algebraic expressions and equations.	Exercises, Quizzes, Tests, and Projects	MLM 3E
Write equations and inequalities in equivalent forms.	Exercises, Quizzes, Tests, and Projects	MLM 3F
Analyze and model functions.	Exercises, Quizzes, Tests, and Projects	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	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	50
Practice quizzes for each Module	50
Test for each Module	125
Reasoning Projects for each Module	100
Written Exam for each Module	250
Reasoning Group Blog Post for each Module	75
Final	100
Total Points	**750**

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

The instructor will read and reply to all e-mails promptly. You will receive specific feedback in the form of electronic comments appended to your electronic submission. I will use the Announcements tool in CANVAS 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:

AMERICANS WITH DISABILITIES ACT (ADA).

Students with disabilities who require academic adjustments in this class should have documentation of their "Confirmation of Eligibility for Academic Adjustments" from the Disability Support Services Office. Students with disabilities without this form should contact the Disability Support Services Office, Bouillon 205 or dssrecept@cwu.edu or 963-2171 immediately. This should be provided to the instructor as soon as possible so we can meet to discuss how the approved adjustments will be implemented in this class.

ACADEMIC HONESTY

Academic dishonesty is defined in the CWU Student Conduct Code (11.B). If academic dishonesty is confirmed, the instructor may issue a failing grade for the specific assignment and/or for the course. Withdrawing from a course does not excuse academic dishonesty. In circumstances when academic dishonesty is confirmed, a W can be replaced by a letter grade.

Collaboration is encouraged for developing your knowledge and skill, BUT

- The final product must be your original work. Your thoughts are considered original if you connect your interpretation of the reading with your personal experience and values, and you openly acknowledge where you got information.
- Sometimes it is inappropriate to consult others at all. For instance, the two written examinations are structured as take-home exercises requiring a professional integrity to work independently.

ACADEMIC MATURITY

In this class we emphasize a disposition toward working independently because teachers function autonomously without the frequent feedback students enjoy. In this course, you are expected to read the written word carefully for its intended meaning and purpose. Unfortunately, many students are accustomed to a much more passive role. Worse, some students cannot make a decision without the personal attention of the instructor. Strategies for being independent will be shared in this class and your sincere effort to develop independence will be readily observed. If you have difficulty reading, you must take the initiative to seek help but in a timely manner, that is, well in advance of any target dates.

Calendar

The calendar with all dates class will meet, major due dates for assessments can be found in CANVAS.