

College Algebra Syllabus

MAT K172-T7 CRN 32725 Fall 2017

Three Rivers Community College Norwich, CT 06360

Max Wentworth, Instructor

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Phone Number (860) 456-1804 *Please call between the hours of 10:00 AM and 6:00 PM*

Class: Tuesday/Thursday 8:00-9:15AM Room E221

Office Hours: Tuesday/Thursday 11:15-12:15 Room D205-E

Course Description

Through lecture, discussion of material, and practice, this course continues the development of algebraic concepts and skills.

Objectives

This course is a thorough and rigorous algebra course, which strengthens the proficiency with algebraic skills and the conceptual understanding needed to be successful in the Calculus sequence.

The topics include: sets, polynomial, exponential, logarithmic and rational functions, rational exponents, polynomial, exponential, logarithmic and radical equations, linear and quadratic inequalities, absolute value equations and inequalities, linear systems.

Method of Evaluation

- 1) Take Home Assignments 10%
- 2) Quizzes 70%
- 3) Final 20%

Take Home Assignments are to be handed in on the due date. Students are encouraged to work together on take home assignments, but each student is responsible for understanding the material. Late assignments will be accepted one class after they are due with 5 points taken off. A zero will assigned for any take home which is not handed in before or during the grace period.

Quizzes will occur on Thursdays at the beginning of class. There will be no make-up quizzes. Your quiz grade will be based on the top 10 scores.

Final will be comprehensive on December 14, 2017.

Grade equivalents: A 93-100 A- 90-92 B+ 87-89 B 83-86 B- 80-82 C+ 77-79 C 73-76
 C- 70-72 D+ 67-69 D 63-66 D- 60-62 F Below 60

All students are required to maintain a learning portfolio in Digication that uses the Three Rivers College Template.

Academic Integrity

Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; and act at all times with honor.

ALL CELL PHONE WILL BE SHUT OFF AND PUT AWAY DURING CLASS

Required Text

Precalculus Graphs and Models, Coburn & Herdlick, McGraw Hill
Also, graph paper and a graphing calculator are required.

Disabilities Statement

If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible.

Matt Liscum, Counselor (860) 215-9265 Room A113

Learning Disabilities, ADD/ADHD, Autism Spectrum, Mental Health Disabilities

Elizabeth Willcox, Advisor (860) 215-9289 Room A113

Medical Disabilities, Mobility Disabilities, Sensory Disability

Please note: 1.) For academic adjustments, you will have to provide documentation of your disability to the DSP. 2.) Instructors cannot provide adjustments until you have delivered written authorization (from a DSP) to the instructor. 3.) Adjustments take effect when you deliver your written authorization to the instructor in person (provided there is adequate time for the instructor to make necessary arrangements). 4.) Adjustments do not apply to tests/assignments that were due prior to your delivering written authorization to your instructor in person.

College Withdrawal Policy

Students may withdraw, at the Registrar's Office, for any reason on or before December 11, 2017.

Resources

Free tutoring is available at the Tutoring and Academic Success Center (TASC).
Please use the service as needed.

After the successful completion of the course the student must be able to:

1. Define Absolute Value, Find Distances on the Number Line, on the Coordinate Plane
2. Simplify Expressions with Rational Exponents, Write them in Radical Form, Simplify, Combine, Rationalize Radical Expressions
3. Solve Linear and Quadratic Inequalities, Absolute Value Equations and Inequalities, Express Answers in Interval Form
4. Perform Operations on Complex numbers, Conjugates, Represent Complex Numbers Graphically.
5. Perform Operations on Radical Expressions, Rational Exponents, Solve Radical Equations
6. Find the Domain and Range of Functions, Combine Functions, Identify Odd and Even functions, Graph Piece-wise Defined Functions, Find Compositions of Functions, Inverses, and Transformations of Functions.
7. Find the Characteristics of Polynomial Functions, Solve Polynomial equations, Find Zeroes (roots) and X-intercepts of Polynomials, Apply the Fundamental Theorem of Algebra, The Remainder and Factor Theorem, Analyze End Behavior
8. Graph Rational Functions, Find Vertical, Horizontal, Slant Asymptotes
9. Graph Exponential and Logarithmic Function, Use Properties of Exponentials and Logarithms, Solve Exponential and Logarithmic Equations
10. Solve Systems of Linear Equations in Several Variables.
11. Partial Fraction Decomposition.

Chapter 1

- 1.1 Rectangular Coordinate System
- 1.2 Linear Equations and Rates of Change
- 1.3 Functions, Function Notation, and the Graph of a Function
- 1.4 Linear Functions, Slope-Intercept and Point-Slope Forms
- 1.5 Solving equations and Inequalities and Problem Solving

Chapter 2

- 2.1 Analyzing the Graph of a Function
- 2.2 The Toolbox Functions and Transformations
- 2.3 Absolute Value Functions, Equations, and Inequalities
- 2.4 Basic Rational Functions and Power Functions
- 2.5 Piecewise-Defined Functions

A5E Rational Expressions and Equations

A6E Radicals, Rational Exponents and Radical Equations

Chapter 3

- 3.1 Complex Numbers
- 3.2 Solving Quadratic Equations and Inequalities
- 3.3 Quadratic Functions
- 3.4 Quadratic Models
- 3.5 The Algebra of Functions
- 3.6 Composition of Functions and Difference Quotient

Chapter 4

- 4.1 Synthetic Division, Remainder and Factor Theorem
- 4.2 Zeros of Polynomial Functions
- 4.3 Graphing Polynomial Functions
- 4.4 Graphing Rational Functions
- 4.5 More on Rational Functions
- 4.6 Polynomial and Rational Inequalities

Chapter 5

- 5.1 One-to-One Functions and Inverse Functions
- 5.2 Exponential Functions
- 5.3 Logarithms and Logarithmic Functions
- 5.4 Properties of Logarithms
- 5.5 Solving Exponential and Logarithmic Equations
- 5.6 Applications
- 5.7 Exponential and Logarithmic Models

Chapter 9

- 9.1 Linear Systems in Two Variables
- 9.2 Linear Systems in Three Variables
- 9.4 Partial Fraction Decomposition

College Algebra Homework

For each section, complete all concepts and vocabulary before doing the exercises.

<u>Section</u>	<u>Begin Page #</u>	<u>Exercise Number</u>
1.1	14	9, 11, 13, 17, 21, 29, 33, 35, 37, 39, 43, 45, 53, 57, 63, 71
1.2	28	9, 13, 21, 29, 33, 35, 39, 45, 47, 49, 52, 53, 57, 59, 63, 65, 71, 73
1.3	43	7, 9, 19-29 odd, 37-99 every other odd (EOO), 113, 117
1.4	59	7-87 EOO, 107, 111
1.5	75	7-59 EOO, 63, 65, 69, 71, 75, 77, 79, 83
2.1	114	9, 11, 15-43 odd, 57
2.2	130	7-27 EOO, 35, 39, 45, 47, 51, 57, 63, 65, 67, 93, 103, 109
2.3	143	7-55 EOO, 61, 63, 67
A5	A-60	$7+6k$ where k is an integer and $k \geq 0$.
2.4	159	7, 9, 11-61 EOO, 65, 67
2.5	172	9, 11, 13-25 EOO, 31, 39
2.6	183	7-41 EOO, 47-53 odd
A6	A-75	7-71 EOO
3.1	211	7-71 EOO
3.2	230	$7+6k$ where k is an integer and $k \geq 0$.
3.3	244	$7+6k$ where k is an integer and $k \geq 0$.
3.4	257	7-55 EOO
3.5	268	$7+6k$ where k is an integer and $k \geq 0$.
3.6	287	7-51 EOO, 59, 61
4.1	316	7-75 EOO, 79, 81, 85, 87
4.2	332	$7+6k$ where k is an integer and $k \geq 0$.
4.3	349	$7+6k$ where k is an integer and $k \geq 0$.
4.4	366	$7+6k$ where k is an integer and $k \geq 0$.
4.5	380	7-51 EOO, 53, 57
4.6	391	7-59 EOO
5.1	418	$7+6k$ where k is an integer and $k \geq 0$.
5.2	429	7-85 EOO
5.3	442	7-75 EOO, 81, 89, 101
5.4	453	7-67 EOO, 77, 79
5.5	465	7-59 EOO
5.6	477	7-59 EOO
5.7	487	$7+6k$ where k is an integer and $k \geq 0$.
9.1	848	$7+6k$ where k is an integer and $k \geq 0$.
9.2	861	$7+6k$ where k is an integer and $k \geq 0$.
9.4	889	7-23 odd

Note: This document is subject to change by instructor.

Board of Regents for Higher Education and Connecticut State Colleges and Universities Policy Regarding Sexual Misconduct Reporting, Support Services and Processes Policy:

Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:

“The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking.”

Title IX Statement of Policy:

“Title IX of the Education Amendments Act of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students are protected by Title IX, regardless of their sex, sexual orientation, gender identity, part or full-time status, disability, race, or national origin, in all aspects of educational programs and activities.”

Please Report Student Incidents to: Edward A. Derr, Student Diversity and Title IX Coordinator

Admissions Welcome Center * Office A116

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