College Algebra, K172, CRN 12866

James Chadic

Spring 2018

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Office Hours: Tuesday/Thursady 3:00-6:00pm, and by appointment   Location of Office Hours: T.A.S.C.

Class Hours: Monday/Wednesday 6:30-7:45pm   Class Room: D224

Prerequisite

Intermediate Algera or other higher courses

Required Material

1. Precalulus Graphs and Models by John W. Coburn and J.D. Herdlick, a graphing calculator is also required.

2. Graphing calculators will be needed for many homework problems and it is **REQUIRED** that you bring one to every class. The use of Cell phones tablets are **STRONGLY PROHIBITED**.

3. A notebook and something to write with. In order to succeed in this class these things are a must.

Course Description

This course is a thorough and rigorous algebra course that strengthens the understanding of functions, their properties, multiple representations, and operations with functions. The function families studied include: polynomial, exponential, logarithmic, rational, and radical functions. Students will also learn linear and quadratic inequalities, absolute value equations and inequalities, linear and noninear systems.

Evaluations

Quizzes/Homework 25%,   Take home Exams & Class Exams 50%,   and Final exam 25%.

1. Take home Exam will be due in a week from giving, once turn in then you will take the in class exam.

2. Quizzes will be **EVERY WEEK OR 2 WEEKS** and it will be only for 20 minutes **ONLY**.

Grading Policy

This is how the grade will be scale in the class. There will be **NO CURVE**. However, I will **not stop and deny you** if you want to improve your grade, meaning you are allow to do retakes as many times as you want, (just be aware that it will be harder compare to your previous one). Below is the measurements for the minimum/maximum for each letter grade.

- From $93 \rightarrow 100 \implies A$ $92 \rightarrow 90 \implies A-$
- From $89 \rightarrow 87 \implies B+$ $86 \rightarrow 83 \implies B$ $82 \rightarrow 80 \implies B-$
- From $79 \rightarrow 77 \implies C+$ $76 \rightarrow 73 \implies C$ $72 \rightarrow 70 \implies C-$
- From $69 \rightarrow 67 \implies D+$ $66 \rightarrow 63 \implies D$ $62 \rightarrow 60 \implies D-$
- From $59 \rightarrow 0 \implies F$

Class Cancellation

In case of increment weather, check the college website for class cancellations or call 860-215-9000 for recorded message.

During Class

I**WILL NOT TOLERATE** the use of electronics in this class, **EXCEPT** if this is an accomadation. Please refrain from using computers for anything but activities related to the class. Phones are prohibited as they are rarely useful for anything in the course. Eating and drinking are allowed in class but please refrain from it affecting the course. Try not to eat your lunch in class as the classes are typically active.

Attendance Policy

It is **VERY IMPORTANT** you attend class because if you do not you will see the outcome of it at the end of the semester and also it might impact your **FINANCIAL AID**, so please be mindful of that. Attendance is expected in all lecture. Valid excuses for absence will be accepted before class. In extenuating circumstances, valid excuses with proof will be accepted after class. For every class missed your knowledge about the subject will be decreasing, and in term of moving forward it will be difficult in your part. It is **YOUR RESPONSIBILITY** to find what you miss **NOT MINE**. Your life, your choice, and your education.

Academic Integrity and Honesty

At TRCC, we expect the highest standards of academic honesty. All students are expect to demonstrate integrity in the completion of their coursework. Academic integrity means doing one's own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be fill and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

Accommodations for Disabilities

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. Please note that accommodations cannot be provided until you provide written authorization from a DSP.
College Disabilities Service Provider:

- Matt Liscum, Counselor he can be reach at (860) 215-9265, and his office is at Room A113. He will be able to provide service for people that has learning disabilities, ADD/ADHD, Autism Spectrum, and Mental Health Disabilities.

- Elizabeth Wilcox, Advisor, she can be reach at (860) 215-9289, and her office is at Room A113 as well. She will be able to help people with medical, mobility, and sensory disabilities.

Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and TRCC policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and TRCC policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. CT State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at **STUDENT HANDBOOK** Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office.

Digication Statement

All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool, students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her earning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportu-

nities. If desired, students will have the option to create multiple portfolios.

Course Objectives

Upon completion of the course, student should be able to:

1. Define absolute value, find distances on the number line and the coordinate plane.

2. Simplify expressions with rational exponents, write them in radical form, simplify, combine and rationalize radical expressions.

3. Solver 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 functionâĂŹs, combine functions, identify even and odd functions, graph piece-wise functions, find composition of functions, inverse and transforms of functions.

7. Find the characteristics of polynomial functions, solve polynomial equations, find zeros (roots) and $x-$ intercepts of polynomials, apply the Fundamental Theorem of Algebra, The Remainder Theorem, The Factor Theorem, analyze end behavior.

8. Graph rational functions, find vertical, horizontal and slant asymptotes.

9. Graph exponential and logarithmic functions, use properties of exponents and logarithms, solve exponential and logarithmic equations.

10. Solve systems of linear equations in several variables

Course Content

Chapter 1: Relations, Functions, and Graphs

1. Rectangular Coordinates, Graphing Circles and Other Relations

2. Linear Equations and Rates of Change

3. Functions, Function Notation, and the Graph of a Function

4. Linear Functions, Special Forms, and More of Rates of Change

5. Solving Equations and Inequalities Graphically; Formulas

6. Linear Function Models and Real Data

Chapter 2: More on Functions

1. Analyzing the Graph of a Function

2. The Toolbox Functions and Transformations

3. Absolute Value Functions, Equations, and Inequalities

4. Basic Rational Functions and Power Functions

5. Piecewise-Defined Functions

6. Variation: The Toolbox Functions in Action

7. (Appendix A 5-E) Solving Rational Equations

8. (Appendix A 6-F) Solving Radical Equations

Chapter 3: Quadratic Functions and Operations on Functions

1. Complex Numbers

2. Solving Quadratic Equations and Inequalities

3. Quadratic Functions and Applications

4. Quadratic Models: More on Rates of Change

5. The Algebra of Functions

6. The Composition of Functions

Chapter 4: Polynomial and Rational Functions

1. Synthetic Division: the Remainder and Factor Theorems

2. The Zeros of Polynomial Functions

3. Graphing Polynomial Functions

4. Graphing Rational Functions

5. Additional Insights to Rational Functions

6. Polynomial and Rational Inequalities

Chapter 5: Exponential and Logarithmic Functions

1. One-to-One and Inverse Functions

2. Exponential Functions

3. Logarithms and Logarithmic Functions

4. Properties of Logarithms

5. Solving Exponential and Logarithmic Equations

6. Applications from Business, Finance, and Science

7. Exponential, Logarithmic, and Logistic Equation Models

Chapter 9: Systems of Equations and Inequalities

1. Linear Systems in Two Variables with Applications

2. Linear Systems in Three Variables with Applications