

Cincinnati Christian University  
Math 230 99 College Algebra (Online)  
Fall 2019 3 semester credit hours

Instructor: Katie Menard, Adjunct Professor	
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### CCU Mission Statement

CCU is committed to providing a Christ-centered, liberal arts education taught with a Christian worldview in students' chosen fields of study.

This course will provide students with an understanding of mathematics that will enhance the study of every discipline. The purpose of this course is to develop skills in mathematical reasoning in order to apply it in real world situations.

### Foster School of Biblical Studies, Arts & Sciences

Cincinnati Christian University exists to educate men and women to live by Biblical principles and transformed lives, empowering them with character, skills, insight, and vision to advance the kingdom and to impact society for Christ. CCU is committed to providing a Christ-centered, liberal arts education taught with a Christian worldview in students' chosen fields of study.

### Course Description

A study of algebraic expressions, equations, inequalities, relations, functions and graphs, polynomial and rational functions, systems of linear equations and inequalities, and complex numbers. A wide range of applications will be included. Prerequisite: Satisfactory performance on a placement examination or successful completion of MATH 010.

### Arts & Sciences Outcomes

CCU's Arts & Sciences program is designed to prepare students to

1. communicate effectively in both oral and written forms in a variety of rhetorical contexts, including Standard English,
2. adeptly utilize modern research and writing tools,
3. identify decisive events and ideas in the human experience and assess their influences on modern culture and thought,
4. employ critical and creative thinking and mathematics and scientific principles for problem solving, literary and socio-cultural analysis, intercultural understanding, and research in the sciences and humanities,
5. demonstrate the integration of academic insights and experiences by constructing and employing a personal framework in which ethical decisions can be made in light of societal values and a Christian worldview.

### Learning Objectives:

After completing this course, students should be able to:

- Graph lines and parabolas (supports A&S 4)
- Solve linear equations/inequalities in one variable (supports A&S 4)
- Factor, add, subtract, multiply, and divide polynomials (supports A&S 4)
- Evaluate functions or expressions and apply the quadratic formula (supports A&S 4)
- Manipulate formulas involving radicals, exponentials and logarithms (supports A&S 4)

These objectives will be assessed on weekly tests and quizzes.

### Required Text and Technology

Sullivan, *College Algebra*, Tenth Edition. Pearson, 2016 ISBN: 978-0-321-97947-6

- Please note: A hard copy of the textbook is optional. However, if you choose to order a hard copy of the textbook, please be sure you have a NEW access code for MyMathLab.
- If you choose to only purchase the MyMathLab access code, you will also have an e-Text available through your MyMathLab access.

**All students are required to have access to MyMathlab and a graphing calculator.**

### Grading Policy

Students are expected to learn both the mathematics covered in the PowerPoint presentations and the mathematics in the textbook. Completing homework is part of the learning experience. Approximately three hours of homework will be assigned each week.

When reviewing for quizzes and tests, students can and should: (a) consult appropriate sections in the text, (b) go to the Learning Center, (c) do problems on a weekly basis, assigned or not, from sections previously covered and (d) utilize the resources on MyMathlab. The more problems you do, the more you will retain.

Letter grades will be assigned based on the published grade point system in the CCU Academic Catalog. Grades will be comprised of the following:

Tests	40%
Quizzes	15%
Homework	25%
Midterm Exam	10%
Final Exam	10%

### Quizzes/Tests

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Quizzes and tests assess whether the objectives are being met. If a student misses a scheduled quiz or test without making previous arrangements with the instructor, it cannot be made up unless the instructor makes an exception. Even then, a penalty may be given. It is the responsibility of the student to take the test early or schedule a makeup test date.

### **Homework**

Assignments will be given and due weekly based upon determined need. They will consist of assignments on MyMathLab, and other items.

### **Late Assignments**

An assignment will be considered late if it is not submitted by the due date and time. 20% will be deducted from the score per day for late assignments.

Assignments that are late due to severe illness or an emergency situation *may* be accepted depending on the circumstances. If you find yourself in a situation that prohibits you from completing your assignments on time, it is in your best interest to address that issue with your instructor **prior** to the due date.

### **Academic Integrity**

This class will follow CCU's regulations pertaining to academic integrity. A copy may be found in CCU's Student Handbook.

### **Accommodations**

Students who require academic accommodations due to a documented physical, psychological, or learning disability may request assistance from the Student Services Department. Students are encouraged to complete this process within the first two weeks of the semester. The Student Services Department is located on the upper level of Presidents Hall. You may also contact the office by phone at 513-244-8150.

***Tentative Course Outline on the following pages.***

### **Course Outline**

Details of chapter assignments and due dates will be posted on MyMathLab and on [Canvas](#).

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	<b>Tentative Dates</b>
<p><b>Chapter R: Review</b></p> <p>R.1 Real Numbers            R.2 Algebra Essentials            R.3 Geometry Essentials            R.4 Polynomials            R.5 Factoring Polynomials  <del>R.6 Synthetic Division</del> (omit)            R.7 Rational Expressions  <del>R.8 <math>n^{\text{th}}</math> Roots, Rational Exponents</del> (omit)</p> <p><b>Chapter R Test</b></p>	<b>8/19 - 8/23</b>
<p><b>Chapter 1: Equations and Inequalities</b></p> <p>1.1 Linear Equations            1.2 Quadratic Equations            1.3 Complex Numbers; Quadratic Equations in the Complex Number System</p> <p><b>Chapter 1 Quiz</b></p> <p>1.4 Radical Equations; Equations Quadratic in Form; Factorable Equations            1.5 Solving Inequalities            1.6 Equations and Inequalities Involving Absolute Value</p> <p><b>Chapter 1 Test</b></p>	<b>8/26 - 9/6</b>
<p><b>Chapter 2: Graphs</b></p> <p>2.1 The Distance and Midpoint Formulas            2.2 Graphs of Equations in Two Variables; Intercepts; Symmetry            2.3 Lines</p> <p><b>Chapter 2 Quiz</b></p> <p>2.4 Circles            2.5 Variation</p> <p><b>Chapter 2 Test</b></p>	<b>9/9 - 9/20</b>
<p><b>Chapter 3: Functions and Their Graphs</b></p>	<b>9/23 - 10/4</b>

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3.1 Functions 3.2 The Graph of a Function 3.3 Properties of Functions <b>Chapter 3 Quiz</b> 3.4 Library of Functions; Piecewise-defined Functions 3.5 Graphing Techniques <b>Chapter 3 Test</b>	
<b>Midterm Exam</b>	<b>Week of 10/7</b>
<b>Chapter 4: Linear and Quadratic Functions</b> 4.1 Properties of Linear Functions and Linear Models 4.2 Building Linear Models from Data 4.3 Quadratic Functions and Their Properties <b>Chapter 4 Quiz</b> 4.4 Build Quadratic Models from Verbal Descriptions and from Data 4.5 Inequalities Involving Quadratic Functions <b>Chapter 4 Test</b>	<b>10/14 - 10/25</b>
<b>Chapter 5: Polynomial and Rational Functions</b> 5.1 Polynomial Functions and Models 5.2 Properties of Rational Functions <b>Chapter 5 Quiz</b> 5.3 The Graph of a Rational Function 5.4 Polynomial and Rational Inequalities <b>Chapter 5 Test</b>	<b>10/28 - 11/8</b>
<b>Chapter 6: Exponential and Logarithmic</b> 6.1 Composite Functions 6.2 One-to-one Functions; Inverse Functions	<b>11/11 - 11/22</b>

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6.3 Exponential Functions <b>Chapter 6 Quiz</b> 6.4 Logarithmic Functions 6.5 Properties of Logarithms 6.6 Logarithmic and Exponential Equations <b>Chapter 6 Test</b>	
<b>Mixed Review for Final Exam</b>	<b>12/2 - 12/9</b>
<b>Final Exam</b>	<b>Week of 12/9</b>

*The instructor reserves the right to change or amend any part of this course plan as deemed necessary.*