# **College Algebra [CMAT 1213] Syllabus**

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**Course Number and Title:** College Algebra [CMAT 1213]

(From the [statewide common course information](https://regents.la.gov/wp-content/uploads/2021/11/CmnCrsCatalog-2021-22-FINAL-APPROVED.pdf).)

**Course Brief Description:** In-depth treatment of solving equations and inequalities; function properties and graphs; inverse functions; linear, quadratic, polynomial, rational, exponential, and logarithmic functions with applications; systems of equations. (From the [statewide common course information](https://regents.la.gov/wp-content/uploads/2021/11/CmnCrsCatalog-2021-22-FINAL-APPROVED.pdf).)

**Credit Hours:** 3

**Prerequisite Knowledge:** To be successful in this course, students should have taken a “foundations of algebra” course as a prerequisite. Students can also take a corequisite support course with this course.

**Course Objectives:**

At the end of this course, students will be able to:

1. Solve equations and inequalities.
2. Graph and analyze mathematical functions.
3. Combine and evaluate functions.
4. Model and solve application problems.

**Course Materials:**

1. This course uses a free Pressbook resource: College Algebra (<https://louis.pressbooks.pub/collegealgebra/>)
2. This course is taught with MyOpenMath, a free online assessment platform (<https://www.myopenmath.com/>)

**Instructor Contact Information:** [*Kept as a placeholder for future adopters]*

* Name:
* Email:
* Phone:
* Office:
* Office Hours:
* Communication policy:

**Course Schedule:**

| **Week** | **Topics and Concepts** | **Corresponding Course Materials** |
| --- | --- | --- |
| 1 | Getting started on the course.  Chapter 1 – Prerequisites   * 1.1 Real Numbers: Algebra Essentials * 1.2 Exponents and Scientific Notation * 1.3 Radicals and Rational Exponents * 1.4 Polynomials * 1.5 Factoring Polynomials * 1.6 Rational Expressions | Welcome, Learner Support, and Getting Started Modules  Module 1: Prerequisites   * Read Chapter 1 in the Pressbook * Practice problems on Chapter 1 Review Exercises * Complete homework assignments for Sections 1.1 – 1.6 * View Chapter Practice Test |
| 2 | Chapter 2 – Equations and Inequalities   * 2.1 Linear Equations in One Variable * 2.2 Models and Applications | Module 2: Equations and Inequalities   * Read Sections 2.1 & 2.2 in Chapter 2 in the Pressbook * Practice problems on Chapter 2 Review Exercises (for Sections 2.1 & 2.2) * Complete homework assignments for Sections 2.1 & 2.2 |
| 3 | Chapter 2 – Equations and Inequalities   * 2.3 Complex Numbers * 2.4 Quadratic Equations | Module 2: Equations and Inequalities   * Read Sections 2.3 & 2.4 in Chapter 2 in the Pressbook * Practice problems on Chapter 2 Review Exercises (for Sections 2.3 & 2.4) * Complete homework assignments for Sections 2.3 & 2.4 |
| 4 | Chapter 2 – Equations and Inequalities   * 2.5 Other Types of Equations * 2.6 Linear Inequalities and Absolute Value Inequalities | Module 2: Equations and Inequalities   * Read Sections 2.5 & 2.6 in Chapter 2 in the Pressbook * Practice problems on Chapter 2 Review Exercises (for Sections 2.5 & 2.6) * Complete homework assignments for Sections 2.5 & 2.6 * View Chapter Practice Test |
| 5 | Chapter 3 – Functions   * 3.1 The Rectangular Coordinate Systems and Graphs * 3.2 Functions and Function Notation * 3.3 Domain and Range | Module 3: Functions   * Read Sections 3.1, 3.2, & 3.3 in Chapter 3 in the Pressbook * Practice problems on Chapter 3 Review Exercises (for Sections 3.1 – 3.3) * Complete homework assignments for Sections 3.1 – 3.3 |
| 6 | Chapter 3 – Functions   * 3.4 Rates of Change and Behavior of Graphs * 3.5 Composition of Functions * 3.6 Transformation of Functions | Module 3: Functions   * Read Sections 3.4, 3.5, & 3.6 in Chapter 3 in the Pressbook * Practice problems on Chapter 3 Review Exercises (for Sections 3.4 – 3.6) * Complete homework assignments for Sections 3.4 – 3.6 |
| 7 | Chapter 3 – Functions   * 3.7 Absolute Value Functions * 3.8 Inverse Functions | Module 3: Functions   * Read Sections 3.7 & 3.8 in Chapter 3 in the Pressbook * Practice problems on Chapter 3 Review Exercises (for Sections 3.7 & 3.8) * Complete homework assignments for Sections 3.7 & 3.8 * View Chapter Practice Test |
| 8 | Midterm Exam | Midterm Assessment Module |
| 9 | Chapter 4 – Linear Functions   * 4.1 Linear Equations in Two Variables * 4.2 Linear Functions | Module 4: Linear Functions   * Read Sections 4.1 & 4.2 in Chapter 4 in the Pressbook * Practice problems on Chapter 4 Review Exercises (for Sections 4.1 & 4.2) * Complete homework assignments for Sections 4.1 & 4.2 |
| 10 | Chapter 4 – Linear Functions   * 4.3 Modeling with Linear Functions * 4.4 Systems of Linear Equations: Two Variables | Module 4: Linear Functions   * Read Sections 4.3 & 4.4 in Chapter 4 in the Pressbook * Practice problems on Chapter 4 Review Exercises (for Sections 4.3 & 4.4) * Complete homework assignments for Sections 4.3 & 4.4 * View Chapter Practice Test |
| 11 | Chapter 5 – Polynomial and Rational Functions   * 5.1 Quadratic Functions * 5.2 Power Functions and Polynomial Functions * 5.3 Graphs of Polynomial Functions | Module 5: Polynomial and Rational Functions   * Read Sections 5.1 – 5.3 in Chapter 5 in the Pressbook * Practice problems on Chapter 5 Review Exercises (for Sections 5.1 – 5.3) * Complete homework assignments for Sections 5.1 – 5.3 |
| 12 | Chapter 5 – Polynomial and Rational Functions   * 5.4 Dividing Polynomials * 5.5 Zeros of Polynomial Functions * 5.6 Rational Functions | Module 5: Polynomial and Rational Functions   * Read Sections 5.4 – 5.6 in Chapter 5 in the Pressbook * Practice problems on Chapter 5 Review Exercises (for Sections 5.4 – 5.6) * Complete homework assignments for Sections 5.4 – 5.6 * View Chapter Practice Test |
| 13 | Chapter 6 – Exponential and Logarithmic Functions   * 6.1 Exponential Functions * 6.2 Graphs of Exponential Functions * 6.3 Logarithmic Functions | Module 6: Exponential and Logarithmic Functions   * Read Sections 6.1 – 6.3 in Chapter 6 in the Pressbook * Practice problems on Chapter 6 Review Exercises (for Sections 6.1 – 6.3) * Complete homework assignments for Sections 6.1 – 6.3 |
| 14 | Chapter 6 – Exponential and Logarithmic Functions   * 6.4 Graphs of Logarithmic Functions * 6.5 Logarithmic Properties * 6.6 Exponential and Logarithmic Equations * 6.7 Exponential and Logarithmic Models | Module 6: Exponential and Logarithmic Functions   * Read Sections 6.4 – 6.7 in Chapter 6 in the Pressbook * Practice problems on Chapter 6 Review Exercises (for Sections 6.4 – 6.7) * Complete homework assignments for Sections 6.4 – 6.7 * View Chapter Practice Test |
| 15 | Final Exam | Final Exam Module |

**Course Policies:**

**Technology Requirements**

You will need regular computer access, preferably a home computer with broadband Internet access. You should also have an alternative plan to complete online assignments in the event of computer or internet failure. This course is delivered via Moodle and MyOpenMath (integrated in Moodle).

**Computer Skills**

To be successful in this course, you should be comfortable with the following:

* using computer access with broadband internet
* using email for communication, especially sending an email attachment
* using Moodle
* using a calculator
* using a webcam (making sure it is connected and works properly)

**Evaluation of Learning**

* Assessments: The student will be assessed and graded using all the following assessment tools:

20% Homework

20% Discussion Forums

30% Midterm Exam

30% Final Exam

Homework is designed to give you practice on the learning objectives. Don't wait until last minute to start these! They will be given for each topic/section covered and students should work on them to reinforce the material in the course. No homework assignments will be accepted after the last day of the semester and after the Final Exam. No low or missing homework assignment grades will be dropped at the end of the semester.

Discussion Forums are designed for you to illustrate your knowledge of concepts covered, help your classmates learn something they struggle with in the course, and keep active participation between the course, your classmates, and the instructor. Specific directions for what to post in each forum are provided in the actual discussion. No graded discussion forum will be dropped at the end of the semester.

Exams are designed to demonstrate that you learned the material in the course and can apply it. These are the ultimate guide and indication of concepts learned in the course. The Midterm Exam and Final Exam will be given at the midway point and end of the semester, respectively. No low Exams scores will be dropped at the end of the semester. Exams will only be extended or made-up dependent on the student’s reason for missing or needing an extension.

* Activities:
  1. In the Moodle course there are links to the sections of the textbook and videos provided from YouTube. These should be used for learning the material in the course.
  2. In the Pressbook you will find H5P content (interactive activities with feedback). These should be used for self-practice – they are not part of the grade in the course.

**Grading Policy**

* Grading Scale:

|  |  |
| --- | --- |
| 90 – 100 | A |
| 80 – 89 | B |
| 70 – 79 | C |
| 60 – 69 | D |
| 0 – 59 | F |

* Late Policy for Homework: Homework assignments can be completed late with a penalty, using the MyOpenMath LatePass. The following is the LatePass policy for the course:

1. Any homework assignments completed during the LatePass period will have a X%-point deduction. This is better than a zero though!
2. You can use a LatePass on each individual Section Assignment and you can only ask for a LatePass once per assignment.
3. Using a LatePass will extend the due date of the homework assignment until the end of the semester. No homework assignments will be accepted after the last day of the semester and after the Final Exam.

* Late Policy for Other Assessments: No other assessments will be accepted submitted late.

**University Policies and Support:** [*Kept as a placeholder for future adopters]*

* **Code of Conduct**
* **Online Etiquette**
* **Academic Integrity**
* **Diversity Statement**
* **Accessibility and Disability Services**
* **Technology Support**
* **Academic Support Services**