# **Finite Mathematics [CMAT 1313] Syllabus**

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**Course Number and Title:** Finite Mathematics [CMAT 1313]
(From the [statewide common course information](https://regents.la.gov/wp-content/uploads/2021/11/CmnCrsCatalog-2021-22-FINAL-APPROVED.pdf).)

**Course Brief Description:** Systems of linear equations, matrices, and matrix algebra; linear inequalities; linear programming; counting techniques: permutations and combinations; probability; basic concepts in financial mathematics (annuities included); and an introduction to statistics. (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 Goals:**

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

1. Demonstrate mastery of review topics from college algebra
2. Solve systems of linear equations and inequalities by graphing, algebraically, and with matrices.
3. Solve linear programming problems.
4. Use Venn Diagrams to solve problems with sets and the relationship between sets.
5. Apply rules of symbolic logic to assess the validity of logical arguments.
6. Use basic counting principles, including combinations and permutations, to solve problems.
7. Recognize and solve simple interest, compound interest, and annuities.
8. Organize and interpret data in scenarios involving descriptive or inferential statistics.

**Course Materials:**

1. This course uses a free Pressbook resource: Finite Mathematics (<https://louis.pressbooks.pub/finitemathematics/>)
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. | Welcome, Learner Support, and Getting Started Modules |
| 2 | Chapter 1 – Linear Equations* 1.1 Use a General Strategy to Solve Linear Equations
* 1.2 Solve a Formula for a Specific Variable
* 1.3 Graph Linear Equations in Two Variables
* 1.4 Slope of a Line
 | Module 1: Linear Equations* Read Chapter 1 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 1.1 – 1.4
 |
| 3 | Chapter 2 – Matrices* 2.1 Systems of Equations
* 2.2 Solving Systems Using Matrices
* 2.3 Matrix Operations
* 2.4 Solving Systems with Inverses
 | Module 2: Matrices* Read Chapter 2 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 2.1 – 2.4
 |
| 4 | Chapter 3 – Linear Programming* 3.1 Inequalities in One Variable
* 3.2 Graph Linear Inequalities in Two Variables
* 3.3 Linear Programming
 | Module 3: Linear Programming* Read Chapter 3 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 3.1 – 3.3
 |
| 5 | Chapter 4 – Finance* 4.1 Simple and Compound Interest
* 4.2 Annuities
* 4.3 Payout Annuities
 | Module 4: Finance* Read Sections 4.1 – 4.3 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 4.1 – 4.3
 |
| 6 | Chapter 4 – Finance* 4.4 Loans
* 4.5 Multistage Finance Problems
 | Module 4: Finance* Read Sections 4.4 & 4.5 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 4.4 & 4.5
 |
| 7 | Midterm Exam | Midterm Assessment Module |
| 8 | Chapter 5 – Sets* 5.1 Basic Set Concepts
* 5.2 Subsets
* 5.3 Understanding Venn Diagrams
 | Module 5: Sets* Read Sections 5.1 – 5.3 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 5.1 – 5.3
 |
| 9 | Chapter 5 – Sets* 5.4 Set Operations with Two Sets
* 5.5 Set Operations with Three Sets
 | Module 5: Sets* Read Sections 5.4 & 5.5 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 5.4 & 5.5
 |
| 10 | Chapter 6 – Probability* 6.1 Concepts of Probability
* 6.2 Conditional Probability and Bayes Theory
* 6.3 Counting
* 6.4 Expected Value
 | Module 6: Probability* Read Sections 6.1 – 6.4 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 6.1 – 6.4
 |
| 11 | Chapter 7 – Logic* 7.1 Statements and Quantifiers
* 7.2 Compound Statements
* 7.3 Constructing Truth Tables
* 7.4 Truth Tables for the Conditional and Biconditional
 | Module 7: Logic* Read Sections 7.1 – 7.4 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 7.1 – 7.4
 |
| 12 | Chapter 7 – Logic* 7.5 Equivalent Statements
* 7.6 De Morgan's Laws
* 7.7 Logical Arguments
 | Module 7: Logic* Read Sections 7.5 – 7.7 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 7.5 – 7.7
 |
| 13 | Chapter 8 – Statistics* 8.1 Gathering and Organizing Data
* 8.2 Visualizing Data
* 8.3 Mean, Median, and Mode
* 8.4 Range and Standard Deviation
 | Module 8: Statistics* Read Sections 8.1 – 8.4 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 8.1 – 8.4
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| 14 | Chapter 8 – Statistics* 8.5 Percentiles
* 8.6 The Normal Distribution
* 8.7 Scatter Plots, Correlation, and Regression Lines
 | Module 8: Statistics* Read Sections 8.5 – 8.7 in the Pressbook
* Watch videos
* Complete homework assignments for Sections 8.5 – 8.7
 |
| 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**