

# Math 125 Outline

## Intermediate Algebra

(Beginning & Intermediate Algebra, Custom Edition for LAMC, by Elayn Martin-Gay)

Topics to be Covered	Sections from Text	Approximate Time Line
<b>Exponents and Polynomials:</b> Exponential Properties; Operations on Polynomials; <b>Negative Exponents</b> & Scientific Notation; <b>Dividing Polynomials</b>	Chap 3: All 7 sections (Mostly Review)	$\frac{1}{2}$ week
<b>Factoring:</b> Greatest Common Factor and Factoring by Grouping; Factoring Trinomials; Factoring Binomials; <b>Solving Quadratic Equations by factoring; Problem Solving</b>	Chap 4: All 7 sections (Mostly Review)	$\frac{1}{2}$ week
<b>Rational Expressions:</b> <b>Operations with Rational Expressions &amp; Complex Fractions;</b> Solving Rational Equations; Proportion and Applications	Chap 5: All 7 sections (Review)	1 week
<b>Graphing:</b> Graphing Linear Equations; Intercepts; <b>Slope and Rate of Change; Equations of Lines;</b> Graphing linear Inequalities in Two Variables; <b>Functions</b>	Chap 6: All 7 sections (Mostly Review)	$\frac{3}{4}$ week
<b>Solving Systems of Linear Equations:</b> Solving 2 by 2 Systems of Linear Equations by Graphing, by Substitution Method, and by Addition Method; <b>Solving linear systems in 3 variables; Applications</b>	Chap 7: All 5 sections (Mostly Review)	1 week
<b>Solving Systems of Equations by Matrices:</b> Applying elementary row operations on a matrix to put it in upper triangular form and be able to solve simple systems.	Appendix D	$\frac{1}{4}$ week
<b>Rational Exponents, Radicals and Complex Numbers:</b> <b>Simplifying Radicals; Operations with Radicals; Rationalizing one and two term denominators; Rational Exponents;</b> Solving Radical Equations, Complex Numbers	Chap 8: All 7 sections (Mostly Review)	1 week
<b>Quadratic Equations and Functions:</b> Solving Quadratic Equations by <b>Completing the Square</b> , by <b>Quadratic Formula</b> , by <b>Quadratic Methods</b> ; Nonlinear inequalities in one variable; <b>Graphing Quadratic Functions.</b>	Chap 9: All 6 sections	$1\frac{1}{2}$ weeks
<b>More on Functions and Graphs:</b> Graphing linear, <b>nonlinear</b> and piecewise-defined functions; <b>Transformations</b> on Graphs (shifting and reflecting); Variation.	Chap 10: All 4 sections	$\frac{3}{4}$ week
<b>Inequalities and Absolute Value:</b> Compound Inequalities; <b>Absolute Value Equations and Inequalities;</b> Graphing Systems of Linear Inequalities in Two Variables.	Chap 11: All 4 sections	1 week
<b>Exponential and Logarithmic Functions:</b> The Algebra of Functions; <b>Composite Functions;</b> Inverse Functions; <b>Exponential Functions and their graphs;</b> <b>Logarithmic Functions and their graphs; Properties of Logarithms;</b> <b>Solving Exponential and Logarithmic Equations.</b>	Chap 12: All 8 sections	2 weeks
<b>Conic Sections:</b> <b>Graphing and Identifying the Conics;</b> Solving Nonlinear Systems of Equations; Graphing Nonlinear Inequalities and Systems of Inequalities.	Chap 13: All 4 sections	1 week

**Note:** Topics in bold face are considered extremely important to the curriculum and should be emphasized accordingly. Class time for exams and quizzes should be scheduled using the two additional weeks in the semester not accounted for in this outline.

(1 week  $\approx$  5 hours of actual teaching time)

## **Support Materials or Services:**

All additional support material for this course will be included in MyLabsPlus (<http://lamc.mylabsplus.com/>). All faculty teaching Math 125 will have automatic access to MyLabsPlus, which is a dynamic online teaching and learning environment. A sample set of online assignments (including homework and practice tests) will be available. For help with MyLabsPlus, or for any questions on the additional support materials, please contact one of the coordinators below.

The Textbook contains study skills from the workbook *Strategies for Success: Study Skills for the College Math Student* by Marecek and Anthony-Smith. They are located at the beginning of the textbook, right before chapter one. These may be assigned as part of homework to help students with some essential skills.

The Math Center in CMS 121 offers free tutoring to students. Calculators and textbooks can be checked-out from the Math Center.

## **Student Learning Outcomes (SLO's):**

The following student learning outcomes must be included in your syllabus.

1. Solve, graph, and analyze various equations or systems of equations and inequalities.
2. Interpret, graph and analyze various functions.

Student Learning Outcomes will be assessed periodically but not every semester. During the SLO assessment semester, the math department will provide a set of questions for instructors to include in their final exam. Instructors will grade the questions according to a given rubric and will report the result of the assessment in a table format provided by the department.

## **General Departmental Policy:**

To ensure student success in future math courses, all topics identified in this outline must be adequately covered. For this reason, it is critical that you carefully plan your semester to include Exams, Quizzes, and Holidays.

During the semester, at least four major exams and a cumulative final are required. The exams should generally be closed book, and require students to demonstrate problem solving skills by showing work for a significant number of problems.

The final exam must be given at the time stipulated in the schedule of classes. It should contribute between 25% and 30% of the student's final grade in the course. Instructors are **required** to assign and grade homework which must count as 5-12% of the student's grade in the course. Homework may be collected and graded in the traditional manner or assigned and graded using course-specific website or publisher provided courseware for the required course textbook. The remaining percentage of the course grade must be based on proctored, individual quizzes and exams.

Instructors should try to be sensitive to the level of the course: treat review material as review, and teach to the level of the subject. For example, definitions and properties should be employed within the context of the underlying mathematical structure. Lack of proficiency in the prerequisite material and/or lack of commitment to the course work on the part of the student, should not affect the content of the course. The level of instruction, assigned work, and test questions, must conform to a college level curriculum.

Faculty who will not teach from the same text in the following semester are required to turn in their textbook at the end of the current semester.

## **Coordinators:**

For questions regarding the support material or this guideline, please contact:

Carole Akl (818)364-7873

email: [aklce@lamission.edu](mailto:aklce@lamission.edu)