



# Math 55

## Course Information Sheet

**Textbook:** Rockswold, G., Krieger, T., Beginning & Intermediate Algebra, 2<sup>nd</sup> Ed., Pearson/Addison Wesley, 2009. ISBN-13: 978-0-321-50005-2.

**Course Outline of Record:** Every section of M55 is required to cover all of the material as listed on the Course Outline of Record. It is our contract with our transfer institutions, with each other and our students about what the course will detail. Failure to do so puts your students at a disadvantage, leads to discrepancies across the sections, and problems for the students in their next course. Any instructor who does not attempt to follow the course outline carefully risks the possibility of not being able to teach that course again at LPC. All course outlines of record can be found on the Las Positas College Website under Programs/Courses.

[http://www.laspositacollege.edu/programs/course\\_outlines/math\\_index.php](http://www.laspositacollege.edu/programs/course_outlines/math_index.php)

**Math 55 Course Materials** are available on the math department's blackboard site. These materials include: the course outline of record; a table summarizing teacher resources for this course (e.g., labs, group activities); core lab assignments; and, sample homework lists. To gain access to this site, please contact the course coordinators Kristine Woods and Randy Taylor.

**Departmental Suggestions regarding content:** Chapters 7 – 13

- Students in M65 will have covered an Introduction to Rational Expressions, multiplying and dividing, and adding and subtracting with like denominators (sections 7.1 – 7.3).
- Consider starting with Chapter 8: Introduction to Functions FIRST. There are several reasons for this: Chapter 8's content does not require a review from the previous course and therefore is a nice way to get all students engaged in the mathematics on a more equitable plane. Also, covering the Chapter 8 content first will lend to richer discussions of behaviors of rational functions (domain, range, asymptotes, etc.) in Chapter 7.
- Chapter 7: Rational Expressions and Chapter 11: Quadratic Functions and Equations do require a review of factoring. In Math 65 students may not have seen the factoring techniques for sum and difference of two cubes:  $a^3 + b^3$  and  $a^3 - b^3$ . Our suggestion is to allow some time to go over this technique from chapter 6.4 and also do a review of factoring techniques from Chapter 6.5 prior to covering Chapter 7.
- Consider covering Chapter 9: Systems of Linear Equations and Chapter 13: Conic Sections together after Chapter 11. Note that we are including "Matrix solutions of Linear Systems" (chapter 9.2) in our new course content – this is a change from our previous course content with the Tussy Gustafson text. However we are still not including determinants – so omit chapter 9.3.
- Chapter 14: Sequences and Series should be omitted.

**Student Learning Outcomes:** Student Learning Outcomes, SLOs, are learning proficiencies the Department feels every student enrolled in our math classes should be encouraged master. The course-level SLOs for Math 55 connect with our program level SLOs of: **Communication**, **Modeling** and **Problem-Solving**. These course-level SLOs should be listed in your syllabus for the course. Please refer to the Mathematics Department website for more SLO information.

Upon successful completion of Math 55, a student should be able to demonstrate:

- the ability to distinguish between a relation and a function (Communication).
- the ability to identify the domain and range of a given function (Problem Solving).
- the ability to solve an applied problem involving a quadratic function (Modeling).

**Math Lab Requirements:** There is a required TBA lab hour attached to this course, part of the course outline of record. To allow for maximum flexibility, the hour is TBA (to be arranged), rather than scheduled. To satisfy their lab requirement, students must go to the **Open Math Lab** in the **Integrated Learning Center**, ILC, to work on lab assignments. The Open Math Lab provides a place for students to get the help they need to succeed in math. Your syllabus must state that students are required to attend the lab for one hour per week for a minimum of 17 lab hours over the semester. We recommend a minimum of eight lab assignments be given (students may be given more than one week to complete an assignment). Lab assignments must be something more than doing homework. **CORE LAB** assignments for Math 55B have been created and are available on the Mathematics Department Blackboard website for all LPC Math 65 instructors. Contact the Math 55 course coordinators Kristine Woods and Randy Taylor for more information. In addition, there are many examples of good math labs that other instructors have created; we encourage you to talk with other instructors and share labs.

### **Recommended CORE LAB assignments for Math 55**

1. **Introduction to Functions** explores multiple representations, functions vs. relations, domain and range. [Based on section 8.1]
2. **Introduction to Rational Functions** supplements the text book's discussion of graphs of rational equations and asymptotes and ties the discussion of rational functions to function concepts learned in chapter 8. [Based on section 7.1]
3. **Rational Expressions and Equations.** This lab, originally written for Math 65, focuses on differentiating between the processes used to simplify rational expressions and perform operations with them, and the processes used to solve rational equations. [Based on section 7.6]
4. **Quadratic Functions: Max or Min?** This lab focuses on multiple representations for quadratic functions and using the vertex to find max or min value of a quadratic function. [Based on section 11.1]
5. **Exploring families of functions.** This lab extends the textbooks discussion about horizontal and vertical translation to other types of functions that the students have studied. [Based on section 11.2]
6. **Linear vs. Exponential Change.** This lab explores the distinction between linear and exponential change using models, tables and graphs. Recommendation: Start in class. [Based on section 12.2]
7. **Graphs of logarithms.** Students explore the relationship between logarithmic and exponential graphs. [Based on section 12.3]