

# MAT 171:

## Elements of Precalculus Syllabus

### General Information

**MAT171 Elements of Precalculus:** *4 hours, 4 credits.* The use of functions, graphs, and matrices to solve various applied problems. Geometry of linear, quadratic, logarithmic, and exponential functions.

**Prerequisite:** A grade of C (or better) in MAT 104 or placement by the Department.

**Notes:** Students may not receive credit for both MAT 171 and MAT 172. A grade of C (or better) in both MAT 171 and MAT 108 are needed to take MAT 175.

**Instructor:** *Your instructor will provide contact information, office hours and meeting times for your section*

### Grading Policy

**Expectations:** Students are expected to learn both the mathematics covered in class and the mathematics in the textbook and other assigned reading. Completing homework is part of the learning experience. Students should review topics from prior courses as needed and, if needed, go to their instructor's office hours, to the Math Lab or to problem sessions regularly.

**Homework:** Online homework using Pearson's MyLab will be assigned at the end of each lesson. Students will be required to complete these assignments as part of their final grade.

**Grades:** *Homework will be worth at least 15% of a student's final grade and the uniform final exam will be worth at least 35% of a student's final grade. Students must pass the department final exam to pass the course. The precise grading policy for your section will be distributed by your instructor.*

### Materials, Resources, and Accommodating Disabilities

**Textbook:** *Blitzer, Precalculus (Custom Lehman Version)* Students will receive purchasing information on their first day of class.

**Technology:** Students can use a Scientific Calculator in class and on homework.  
*Graphing Calculators are not permitted at all.*

**Tutoring:** Departmental tutoring is available in the Math Lab on the 2nd floor of Gillet Hall Room 233. *For updated information please visit the following website (<http://www.lehman.edu/academics/math-lab.php>)*

**Reserve:** Selected books have been placed on reserve in the library.

**Accommodating Disabilities:** Lehman College is committed to providing access to all programs and curricula to all students. Students with disabilities who may need classroom accommodations are encouraged to register with the Office of Student Disability Services. For more info, contact the Office of Student Disability Services, Shuster Hall, Room 238, 718-960-8441.

### Course Objectives

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

1. Graph linear, polynomial, rational, exponential, and logarithmic equations. (a,b)
2. Apply linear and quadratic equations to applications. (a,b,c)
3. Factor, add, subtract, multiply, and divide polynomials. (a,b,c)
4. Evaluate functions or expressions including using the quadratic formula. (a,b,c)
5. Represent and solve problems involving exponentials and logs. (b,c)

***These objectives will be assessed on the final exam along with other important techniques.***

*Last Updated: Summer, 2022*

## Course Topics

There is flexibility in the order and time allotted to each of the topics below, but all topics must be covered by the instructor and understood by the student. *Section numbers refer to the most RECENT edition of the text; consult with your instructor if you are using an older edition.*

**Lesson 1:** Chapter P – The Real Numbers, Inequalities, Absolute Value, Algebra

**Lesson 2:** 1.1 – Equations and Their Graphs

**Lesson 3:** 1.9 – Distance Formula and Circles

**Lesson 4:** 1.4 – Linear Equations

**Lesson 5:** 1.5 – Perpendicular and Parallel Lines

**Lesson 6:** 7.1 – Systems of Linear Equations in 2 Variables

**Lesson 7:** 1.2, 1.3 – Function Evaluation, Algebra, and Difference Quotients

**Lesson 8:** Review for Exam 1

**Lesson 9:** Exam I

**Students who fail this exam should consider dropping the course.**

**Please consult with your professor or a math advisor during office hours for more personalized advising.**

**Bring a copy of your exam and completed homework**

**Lesson 10:** 1.6 – Transformation of Functions

**Lesson 11:** P.5 – Quadratic Equations, Factoring, and the Quadratic Formula

**Lesson 12:** 2.2 – Graphing Quadratic Functions and Applications (See posted worksheet.)

**Lesson 13:** P.4 – Polynomial Algebra

**Lesson 14:** 2.3 – Polynomial Functions and Their Graphs

**Lesson 15:** P.6, 2.4 – Rational Expressions and Polynomial Long Division

**Lesson 16:** 2.6 – Rational Functions

**Lesson 17:** 1.7 – Function Composition

**Lesson 18:** 1.8 – Inverse Functions

**Lesson 19:** Review for Exam II

**Lesson 20:** Exam II

**Students who fail both exams should probably drop the course.**

**Please consult with your professor or a math advisor for more personalized advising. Bring a copy of your exams and completed homework.**

**Lesson 21:** P.2, P.3 – Review of Exponents, Radicals, and Rational Exponents

**Lesson 22:** 3.1 – Exponential Functions

**Lesson 23 & 24:** 3.2 – Introduction to Logarithms and Logarithmic Functions

**Lesson 25:** 3.3 – Exponential and Logarithmic Equations

**Lesson 26:** 8.1 – Matrix Solutions to Linear Systems

**Lesson 27:** Catch up or more on Matrices (8.2, 8.3)

**Lesson 28:** Review for the Final

**Final Exam:** A Uniform Final Exam will be given to all sections of Precalculus during Finals Week covering the entire course especially topics needed in future courses. A sample final will be distributed. No calculators will be permitted on the final exam.

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