

## Weekly Course Plan

**Week 1 (August 26-30)** Rational numbers. Addition, subtraction, multiplication and division of fractions. Complex fractions. Real numbers and operations on them. Order of arithmetical operations. Notion of variable. Algebraic expressions. Evaluation of an algebraic expression. Operation with algebraic expressions.

**Reading:** R2 (p.7-8), R3 (p.17-22, 24-25), R4 (p.31-35).

**Week 2 (September 2-6, no classes 9/2 and 9/3)** Number line. Intervals. Absolute value of a real number.

**Reading:** R2 (p.10-12), R3 (p.16-17).

**Week 3 (September 9-13)** Notion of equation. Equivalent equations. Solution of an equation. Linear equations. Number of solutions of a linear equation. Linear equations involving absolute value. Linear inequalities. Equivalent inequalities. What is a solution of an inequality. Double inequalities.

**Reading:** 1.1 (p.44-53), 1.6 (p.83-101), 1.4 (p.76-80).

**Week 4 (September 16-20)** Text problems leading to linear equations (How to translate a text into a mathematical language, how to introduce a variable, how to interpret algebraic expressions involved into solution, how to analyze the answer, how to solve a problem in different ways.)

**Reading:** 1.2-1.3 (p.57-72).

**Week 5 (September 23-27)** Rectangular coordinate system (a reminder). Linear equations in two variables. Graph of a linear equation. Lines on a plane. Intercepts, slope, vertical and horizontal lines.

**Reading:** 2.1 (p.128-137).

**Week 6 (September 30-October 4) in-class Exam 1 on the first class this week**  
Different forms of a linear equation: standard, intercept, slope-intercept, point-slope form, two-points form. Parallel and perpendicular lines.

**Reading:** 2.2-2.3 (p.145-152, 157-165).

**Week 7 (October 7- 11)** Systems of two linear equations and their geometrical interpretation. Text problems leading to systems of linear equations. Systems of linear inequalities. Linear inequalities involving absolute value.

**Reading:** 3.1-3.3 (p.236-240, 246-250, 253-257), 3.5 (p.270-276), 1.7 (p. 103-110).

**Week 8 (October 14- 18)** Notion of a function and its graph. Domain of a function. Linear functions.

**Reading:** 2.6-2.7 (p.192-198, 204-205).

**Week 9 (October 21- 25)** Integer exponents and operations on them. Radicals. Exponential notation for radicals.

**Reading:** 4.1 (p.320-326), 6.1 (p.496-504).

**Week 10 (October 28-November 1) Oct. 31 8:45pm-10:15pm Exam 2**  
Quadratic polynomials and quadratic equations. Quadratic formula. Factoring quadratic polynomials.

**Reading:** Supplement *Quadratic Equations and Parabolas*.

**Week 11 (November 4-8)** Quadratic functions and their graphs. Vertex, axis of symmetry, intercepts of a parabola.

**Reading:** Supplement *Quadratic Equations and Parabolas*.

**Week 12 (November 11-15)** Polynomials in one variable and operations on them. Polynomial in several variables. Factoring polynomials.

**Reading:** 4.2-4.3 (p.329-334, 340-344), 4.7 (p.382-388).

**Week 13 (November 18-22)** Rational expressions and operations on them.

**Reading:** 5.1 (p. 422-428), 5.3-5.5(p.437-444, 447-451, 454-460).

**Week 14 (November 25-29, no classes 11/27, 11/29)** Review.

**Monday, December 2** is the last day of classes.

**December 10 2:15pm-5:00pm Exam 3**