

Building Construction Engineering

SYLLABUS

Elementary Logic

Propositions, logical connectives, quantifiers.

Set Theory

Set membership, inclusion, set operations; Cartesian product.

Polynomials

Polynomial division, factorization of polynomials, irreducible polynomials.

Radicals

Square root of a non negative real number and its properties.

Equations and inequalities

First and second degree algebraic equations and inequalities. Properties of the order relations in \mathbb{R} . Solving equations and inequalities using factorization of polynomials. Rational equations and inequalities. Simple irrational equations and inequalities. Absolute value equations and inequalities. Logarithmic equations and inequalities. Exponential equations and inequalities.

Plane coordinate geometry

Coordinate system. Straight lines. Intersection of straight lines. Parallel and perpendicular straight lines. Circles, parabolas, ellipses, hyperbolas.

Basic functions

Graph and properties of the exponential and logarithmic function. Sine, cosine and tangent of an angle. Trigonometry: addition and subtraction of angles, double angle formulas, half angle formulas. Application to triangles. Graphs of the sine, cosine and tangent functions.