Math 306 Course Contents

Chapter 1 Real Numbers

1.1	Pythagorean Theorem
	Sides of a right triangle
	Converse of the Pythagorean Theorem
1.2	Rational Numbers
	Natural numbers – Integers
	Rational numbers
	Decimal representation of a rational number
	Writing a decimal rational number as a reduced fraction
	Rational numbers and the Number Line
1.3	Irrational numbers
	Irrational numbers and the Number Line
1.4	Real numbers
	The Real Number Line
1.5	Intervals
	Intervals as line segments
	Intervals represented by a ray
1.6	Natural number exponents
	Power of a real number
	Multiplying 2 powers with the same base
	Quotient of 2 powers with the same base
	Power of a power
	Power of a product
1.7	Power of a quotient
1.7	Negative exponents Scientific notation
1.0	Product of a real number by a power of 10
	Scientific notation
1.9	Rational number exponents
1.5	n th root of a real number
	Rational exponents

Chapter 2 Algebraic Expressions

- 2.1 Monomials
- 2.2 Monomial operations Addition and subtraction of monomials Multiplication of monomials Division of monomials
- 2.3 Polynomials
- 2.4 Polynomial operations

Sum and difference of polynomials Product of polynomials (FOIL) Identities Division of polynomials Removing the common factor

Chapter 3 Equations and inequalities

- 3.1 Equations
 - Properties of equality Solving an equation
- 3.2 Inequalities Properties of inequalities Inequalities with one unknown Solving an inequality Solving an inequality in a given domain

Chapter 4 Relations and functions

4.1	Relations and functions
	Relation
	Function
	Cartesian graph of a function
4.2	Modes of representation of a function
	Modes of representation of a function
	Drawing a function's graph
4.3	Rate of change of a function
	Rate of change of a function
	Rate of change of a line
4.4	Constant function and linear function
	Polynomial functions
	Constant functions
	Direct variation linear function
	Partial variation linear function
4.5	Finding the rule of a linear function
4.6	System of 1 st degree equations with 2 variables
4.7	Changing the parameters of a linear function
	Changing parameter a in the rule $y = ax$
	Changing parameter b in the rule $y = ax + b$
4.8	Rational function
4.9	Inverse of a function
	Inverse relations

Inverse of a function

Chapter 5 Solids

5.1	Views of a solid
	Coded blueprint and views of a solid
5.2	Perspectives of a solid
	Oblique perspective
	Axonometric perspective
	Linear perspective
5.3	Prisms – Pyramids – Cylinders
	Prisms
	Pyramids
	Cylinders
5.4	Cones
	Cones
	Properties of cones
	Net of a cone

5.5 Spheres

Chapter 6 Area and Volume of solids

6.1	Area of solids
	Units of Area
	Total area of a cube
	Area of a prism
	Area of a cylinder
	Area of a pyramid
	Area of a cone
	Area of a sphere
6.2	Area of decomposable solids
6.3	Volume of solids
	Units of volume

Units of volume Units of capacity Volume of a prism Volume of a cylinder Volume of a pyramid Volume of a cone Volume of a sphere

- 6.4 Volume of decomposable solids
- 6.5 Missing measures of a solid

Chapter 7 Isometry and similitude

- 7.1 Isometric figures Similar figures
 - Ratio of perimeter and area of similar figures
- 7.2 Isometric solids Similar solids Ratio of area and volume of similar solids

Chapter 8 Probability

- 8.1 Basic counting principle
- 8.2 Permutations and Combinations Permutations
 - Permutations Combinations
- 8.3 Probability of events Operations between events
- 8.4 Random variables Discrete random variables Continuous random variables

Chapter 9 Statistics

9.1	Statistical Surveys
	Census – Poll – Study
	Discrete quantitative variables – Continuous quantitative variables
9.2	Statistical tables and diagrams
	Diagrams: Bar graph – Circle graph
	Broken line graphs
	Histograms
9.3	Sampling techniques
	Simple random sampling – Systematic sampling
	Stratified Sampling
	Cluster Sampling
9.4	Sources of Bias
9.5	Measures of central tendency
	Mean – Mode – Median
	Weighted mean
9.6	Measures of position
	Quartiles
9.7	Measures of dispersion
	Range – interquartile range
9.8	Box- and-whisker plots
9.9	Stem-and-leaf plots