

MATH 026

Course Description: 01:640:026. Intermediate Algebra (E3)

Prerequisite: 01:640:025 or demonstrated proficiency in Elementary Algebra. Absolute value equations and inequalities; functions; linear graphs and systems; rational and polynomial expressions; radical expressions and rational exponents; quadratic functions, graphs, equations, and inequalities; topics in analytic geometry

SYLLABUS

Text: Hirsch/Goodman, Understanding Intermediate Algebra, 6th Ed., 2006: Thomson Brooks/Cole Publishing Co.

| <u>Periods</u> | <u>Sections</u> | <u>Topics</u> |
|----------------|-----------------|---|
| ½ | 1.1 - 1.5 | (Course orientation) Real numbers: their operations and properties. The number line. Algebraic expressions. Translating sentences into algebraic form. Basic first-degree equations and inequalities. |
| 2 | 2.1 - 2.4 | First-Degree equations and Inequalities and their applications. Interval notation, Absolute Value Equations and Inequalities. |
| 3 | 3.1 - 3.5 | Graphing Straight Lines. Functions. |
| 2½ | 4.1 - 4.4 | Equations of a Line. Linear Systems in Two variables. Graphing Linear Inequalities in Two Variables. |
| 2 | 5.1 - 5.5 | Polynomial functions. Operations with Polynomials. Factoring. |
| 1 | EXAM I | |
| 1 | 5.6 - 5.7 | Solving polynomial equations by factoring. Polynomial division |
| 3 | 6.1 – 6.8 | Rational Expressions and Functions. Operations with rational expressions. Rational and literal equations, and their applications. |
| 2 | 7.1 - 7.3 | Integer Exponents. Scientific Notation. Rational Exponents (and radical notation). |
| 3 | 7.4 - 7.8 | Radical expressions. Operations with radicals. Radical equations. Complex Numbers |
| 1 | EXAM II | |

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| 2 | 8.1 - 8.4 | Quadratic Functions. Quadratic equations and their applications. |
| 1 | 8.5 | Equations reducible to quadratic form. |
| 1 | 8.6 | Graphing Quadratic Functions. |
| 1 | 8.7 | Quadratic and Rational Inequalities. |
| 1 | 8.8 | The Distance Formula: Circles. |
| 1 | | Catch-up and Review. |