

MATH 173

Basic Technical Mathematics 2

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Textbook

Algebra and Trigonometry (2nd Edition) by Beecher, Penna, and Bittinger

Notes on Geometry (To be distributed in class)

Evaluation

- Best 4 of 5 term tests: 50%
- Comprehensive final exam: 50%

A good proportion of the tests questions will be similar to the homework problems suggested in the book or to examples done in class. Homework will be posted on the course WEB page.

Tentative Schedule

Test 1	January 14	Test 2	January 28	Test 3	February 10
Test 4	February 25	Test 5	March 11		

The following percentage conversion to letter grade will be used:

Percentage:	0-49	50-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100
Letter grade:	F	D	C	C+	B-	B	B+	A-	A	A+

Course Outline

1. GRAPHS, FUNCTIONS, AND MODELS
 - Functions and Graphs (section 1.2)
 - Linear Functions, Slope, and Applications (section 1.3)
 - Equations of Lines (section 1.4)
 - The Algebra of Functions (section 1.6)
 - Symmetry and Transformation (section 1.7)
2. FUNCTIONS, EQUATIONS, AND INEQUALITIES
 - The Complex Numbers (section 2.2)
 - Quadratic Equations, Functions, and Models (section 2.3)
 - Analyzing Graphs of Quadratic Functions (section 2.4)
3. POLYNOMIAL AND RATIONAL FUNCTIONS
 - Polynomial Functions and Models (section 3.1)
 - Polynomial Division; The Remainder and Factor Theorem (section 3.2)
 - Theorems about Zeros of Polynomial Functions (section 3.3)
 - Rational Functions (section 3.4)

4. EXPONENTIAL AND LOGARITHMIC FUNCTIONS
 - Inverse Functions (section 4.1)
 - Exponential Functions and Graphs (section 4.2)
 - Logarithmic Functions and Graphs (section 4.3)
 - Properties of Logarithmic Functions (section 4.4)
 - Solving Exponential and Logarithmic Equations (section 4.5)
 - Applications and Models: Growth and Decay (section 4.6)
5. GEOMETRY
 - Triangles (G.1)
 - Similar Triangles (G.2)
 - Circles (G.3)
 - Congruent Triangles (G.4)
 - Angles and Parallel Lines (G.5)
 - Parallelograms and Trapezoids (G.6)
 - Rectangles and Squares (G.7)
 - Prisms and Circular Cylinders (G.8)
 - Pyramids and Circular Cones (G.9)
 - Spheres (G.10)
6. THE TRIGONOMETRIC FUNCTIONS
 - Trigonometric Functions of Acute Angles (section 5.1)
 - Applications of Right Triangles (section 5.2)
 - Trigonometric Functions of Any Angle (section 5.3)
 - Radians, Arc Length, and Angular Speed (section 5.4)
 - Circular Functions: Graphs and Properties (section 5.5)
 - Graphs of Transformed Sine and Cosine Functions (section 5.6)
7. TRIGONOMETRIC IDENTITIES, INVERSE FUNCTIONS, AND EQUATIONS
 - Identities: Pythagorean and Sum and Difference (section 6.1)
 - Identities: Cofunction, Double-Angle, and Half-Angle (section 6.2)
 - Proving Trigonometric Identities (section 6.3)
 - Inverses of the Trigonometric Functions (section 6.4)
 - Solving Trigonometric Equations (section 6.5)
8. APPLICATIONS OF TRIGONOMETRY
 - The Law of Sines (section 7.1)
 - The Law of Cosines (section 7.2)
 - Polar Coordinates and Graphs (section 7.4)
9. SYSTEMS OF EQUATIONS
 - Systems of Equations in Two Variables (section 8.1)
 - Systems of Equations in Three Variables (section 8.2)
10. CONIC SECTIONS
 - The Parabola (section 9.1)
 - The Circle and the Ellipse (section 9.2)
 - The Hyperbola (section 9.3)
11. SEQUENCES, SERIES, AND COMBINATORICS
 - Sequences and Series (section 10.1)
 - Arithmetic Sequences and Series (section 10.2)
 - Geometric Sequences and Series (section 10.3)
 - The Binomial Theorem (section 10.7)