**COURSE TITLE**: TRIGONOMETRY

**BOOK:** Addison Wesley Longman; “Trigonometry” 7th Edition;

Authors: Lial, Hornsby, Schneider

Copyright 2001

**OBJECTIVES**: Trigonometry places emphasis on the understanding of definitions and principles of trigonometry and their applications to problems solving. It includes the circular function concepts, identities, radian measure, and triangle solutions. Use of the right triangle and its properties and applications are shown through construction and formula solution. Scientific calculators are used heavily throughout this course.

**MATERIAL COVERED**:

Entire Course uses anchor M11.C.1.4.1

**Chapter 1: The Trigonometric Functions**

Section 1.1: Basic concepts M11.C.3.1.1

Section 1.2: Angles M11.B.2.1.1

Section 1.3: Angle Relationships and similar triangles

Section 1.4: Definitions of the trigonometric functions M11A.1.1.1, M11.A.1.1.3

Section 1.5: Using the definitions of the trigonometric functions

# Chapter 2: Acute Angles and Right Angles

Section 2.1: Trigonometric functions of acute angles

Section 2.2: Trigonometric functions of non-acute angles

Section 2.3: Finding trigonometric function values using a calculator

Section 2.4: Solving right triangles M11.A.1.1.1, M11.A.1.1.3, M11.C.1.2.1, M11.C.1.2.2

Section 2.5: Further applications of right triangles M11.A.2.1.2, M11.A.2.1.3

**Chapter 3: Radian Measure and the Circular Functions** M11.A.2.1.1, M11.C.1.1.1, M11.C.1.1.2

Section 3.1: Radian measure

Section 3.2: Applications of radian measure M11.B.2.3.1

Section 3.3: Circular functions of real numbers

Section 3.4: Linear and angular velocity

**Chapter 4: Graphs of the Circular Functions** M11.A.1.3.1, M11.A.1.3.2, M11.D.1.1.3, M11.D.2.1.1, M11.D.2.1.2, M11.D.4.1.1

Section 4.1: Graphs of the sine and cosine functions

Section 4.2: Translations of the graphs of the sine and cosine functions

Section 4.3: Graphs of the other circular functions

**Chapter 5: Trigonometric Identities**

Section 5.1: Fundamental identities

Section 5.2: Verifying trigonometric identities

Section 5.3: Sum and difference identities for cosine

Section 5.4: Sum and difference identities for sine and tangent

Section 5.5: Double-angle identities

Section 5.6: Half-angle identities

**Chapter 6: Inverse Trigonometric Functions and Trigonometric Equations**

Section 6.1: Inverse trigonometric functions M11.D.1.1.2

Section 6.2: Trigonometric equations I

Section 6.3: Trigonometric equations II

Section 6.4: Equations involving inverse trigonometric functions

**Chapter 7: Applications of Trigonometry and Vectors**

Section 7.1: Oblique triangles and the law of sines

Section 7.2: The ambiguous case of the law of sines

Section 7.3: The law of cosines