**Math 1316 – Trigonometry**

**Textbook: PreCalculus 10/e**

Michael Sullivan, Addison Wesley, 10th ed,

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**Catalog Description:**
3 Credits (3 hrs. lec.) Trigonometric functions and their applications, solutions of right and oblique triangles, trigonometric identities and equations, inverse trigonometric functions, graphs of the trigonometric functions, vectors and polar coordinates. (2701015319) Prerequisite: [MATH 1314](http://catalog.lonestar.edu/content.php?filter%5B27%5D=MATH&filter%5B29%5D=&filter%5Bcourse_type%5D=-1&filter%5Bkeyword%5D=&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=22&expand=&navoid=8470&search_database=Filter#tt695) OR placement by testing; College Level Readiness in Reading AND Writing

**Course Learning Outcomes:**
The student will:

* Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
* Compute values of the six basic inverse trigonometric functions.
* Graph trigonometric functions and their transformations.
* Prove trigonometric identities.
* Solve trigonometric equations.
* Solve right and oblique triangles.
* Use the concepts of trigonometry to solve applications.
* Compute operations of vectors.
* Represent complex numbers in trigonometric form.

**Book Sections:**

**Chapter 6**

6.1 Angles and Their Measure

6.2 Trigonometric Functions: Unit Circle Approach

6.3 Properties of the Trigonometric Functions

6.4 Graphs of the Sine and Cosine Functions

6.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions

6.6 Phase Shift; Sinusoidal Curve Fitting

**Chapter 7**

7.1 The Inverse Sine, Cosine, and Tangent Functions

7.2 The Inverse Trigonometric Functions (continued)

7.3 Trigonometric Equations

7.4   Trigonometric Identities

7.5   Sum and Difference Formulas

7.6 Double-angle and Half-Angle Formulas

7.7 Product-to-Sum and Sum-to-Product Formulas

**Chapter 8**

8.1 Applications Involving Right Triangles

8.2 Law of Sines

8.3 Law of Cosines

8.4 Area of a Triangle

**Chapter 9**

9.1 Polar Coordinates (optional)

9.2 Polar Equations and Graphs

9.3 The Complex Plane; DeMoivre’s Theorem

9.4 Vectors

9.5 The Dot Product

9.6 Vectors in Space

9.7 The Cross Product (optional)