**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

**I. GENERAL COURSE INFORMATION**

Course Number: MATH 1830

Course Title: Trigonometry

Credit Hours: 3

Prerequisites: MATH 1828 College Algebra with a grade of C or better OR MATH 1826

 College Algebra with Review with a grade of C or better OR appropriate

 placement score

Division/Discipline: Academics Division/Mathematics

Course Description: A study of trigonometric functions, identities, complex numbers, and solutions of triangles.

**II. INSTRUCTOR INFORMATION**

**III. COLLEGE POLICIES**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. [Most up-to-date documents are available on the College webpage.]

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

**IV. COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Trigonometry is an approved fundamental general education course at Barton Community College that can be used to fulfill degree requirements. In addition, it provides those students majoring in physical sciences or engineering with the prerequisites to begin the Calculus sequence.

This course transfers credit to all Kansas Regent Universities, and may be used to help fulfill a general education requirement at many. Depending on the program and institution, this course may transfer as part of the core curriculum.

General education requirements and the transferability of all college courses will vary among institutions, and perhaps even among departments, colleges, or programs within an institution. Institutional requirements may also change without prior notification. Students are responsible to obtain relevant information from intended transfer institutions to insure that the courses the student enrolls in are the most appropriate set of courses for the transfer program. http://bartonccc.edu/transfer/schools

The learning outcomes and competencies detailed in this course syllabus meet or exceed those specified for this course by the Kansas Core Outcomes Groups project, and as approved by the Kansas Board of Regents – <http://kansasregents.org/transfer_articulation>.

**V. ASSESSMENT OF STUDENT LEARNING**

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Course Outcomes, Competencies, and Supplemental Competencies:

A. Analyze given information of a triangle in a plane and the rectangular coordinate system.

1. Define the trigonometric functions using both a right triangle and the unit circle.

2. Define and interpret radian measurement.

3. Recognize and apply circular functions as real-valued functions.

4. Solve for unknown sides/angles within right triangles

5. Determine trigonometric functions values for special angles (multiples of π/6, π/4 and π/3)

6. Find solutions of oblique triangles using the Law of Sines and Law of Cosines.

B. Compile information concerning a trigonometric function to sketch the graph.

1. Determine the period of a trigonometric function.

2. Determine the amplitude of a trigonometric function.

3. Determine the vertical translation of a trigonometric function.

4. Determine the horizontal or phase shift of a trigonometric function.

5. Determine the reflection of a trigonometric function.

6. Compare the arithmetic combinations to the parent graph of the trigonometric function to sketch the graph.

7. Graph inverse trigonometric functions.

8. Graph within the polar coordinate system.

C. Derive and prove trigonometric identities

1. Change and use equivalent forms of Pythagorean, reciprocal, quotient, negative-angle, double-angle, half-angle, angle-sum, and angle-difference identities.

2. Verify trigonometric identities using Pythagorean, reciprocal, quotient, negative-angle, double-angle, half-angle, angle-sum, and angle-difference identities.

3. Derive the trigonometric form of complex numbers.

D. Solve and perform calculations of trigonometric functions.

1. Apply inverse trigonometric functions to find the measure of an angle in degrees and/or radian measure.

2. Solve equations involving trigonometric functions.

3. Solve applied problems including but not limited to vectors.

4. Perform calculations with the trigonometric form of a complex number including products and quotients.

5. Convert between rectangular and polar coordinates.

**VI. INSTRUCTOR’S EXPECTATIONS OF STUDENTS IN CLASS**

**VII. TEXTBOOKS AND OTHER REQUIRED MATERIALS**

**VIII. REFERENCES**

**IX. METHODS OF INSTRUCTION AND EVALUATION**

**X. ATTENDANCE REQUIREMENTS**

**XI. COURSE OUTLINE**