MATH 117C Trigonometry Summer 2015

Instructor: Mrs. M. Jackson ***Office:*** C201 ***Phone:*** 780-2538 (my office)

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Office Hours: by appointment

Pre-Requisites: Four years of high school mathematics including Algebra I and II and geometry, and a satisfactory Math Placement Exam (MPE) score; or Math 116 with a grade of C or better.

***Course Description*:** In this course we will cover the following topics: unit circle, trigonometric functions and graphs, trigonometric identities and equations, right triangle trigonometry, laws of sines and cosines, DeMoivre's Theorem, vectors and applications of trigonometry. This course satisfies the Colonnade Quantitative Reasoning requirement.

General Education goals and Objectives:
After completing MA 117C, students will be able to use fundamental mathematical reasoning principles; use graphical, symbolic, and numeric methods to solve practical problems; and interpret information presented in tables or graphical displays.

Optional Textbook: Trigonometry, 10th Edition by Lial (2013)

***Required Technology*:** MathXL Student Access Code **Course ID: XL1W-K1WU-701Z-4SC2**

Calculator: The graphing calculator (TI–83 or TI–84) is required. The TI-89 is not allowed.

Attendance: **Regular attendance in this course in mandatory.** As an adult, you are responsible for finding out what work you missed during your absence (either from classmates or from me). **A student who misses more than two (2) class meetings should officially withdraw from the course or expect a failing grade for the semester.** *No distinction is made between excused and unexcused absences.*

Homework: Practicing new concepts outside of class is vital to your long-term understanding of the material. Therefore, homework problems will be assigned and completed daily on the computer using MathXL. **You must have access to a computer with online capabilities.** If you do not have a home computer, you may use computers in any of the labs on south campus or the main campus. In order to master the material in the homework stage, you are expected to work on each assignment until a grade of 100% is attained. Each homework assignment will be graded on the computer and will be assigned with a deadline. After the deadline passes, problems will be available to you for review only, not to improve your homework score. As you do your homework, you will need to work out the problems in an organized manner in a section of your course binder designated for **math homework only.** Non-computer homework may also be assigned.

Cell Phones. IPods, Computers & Text Messaging: These items and activities are strictly prohibited. If you have a cell phone with you, it must be set on silent and stored (that means completely out of sight). You may not use a cell phone as a calculator at any time. Text messaging during class is not allowed.

Make-up Exams: NO MAKE-UP EXAMS WILL BE GIVEN FOR THIS CLASS. If for some reason, a student must miss an exam then the student's percentage on the comprehensive final will be used to replace the missing exam score. If a student misses more than one exam, all subsequent missed exam scores will be recorded as zeros. If a student knows ahead of time that he or she will miss an exam, arrangements can be made with the instructor to take the exam **early**.

Course Grade: Your course grade will be based on computer homework assignments, worksheets, quizzes (which may be both announced **and** unannounced), 4 unit exams, and a comprehensive final exam. Quizzes **will not** be allowed to be made up **or** taken early regardless of the reason. However, when computing your grade, the lowest quiz score will be dropped. Worksheets will be due **no** later than the day of the unit exam and will not be accepted after that date. The grade you receive in this course will be determined by the following:

Exams	50%
Homework & Quizzes	30%
Final Exam	20%

Grading: Final grades will be assigned as follows:

100-90% A 89-80% B 79-70% C 60-69% D Below 60% F

Student Disability Services: In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in DUC A-200 of the Student Success Center in Downing University Center. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Course Outcomes:
Upon successful completion of this course students will be able to:

- Investigate trigonometry functions, both algebraically and graphically
- Become skilled in using trigonometric identities and algebraic properties to complete verifications and to solve equations
- Use trigonometric properties to solve applied problems that involve right triangles and oblique triangles
- Learn to create and operate with complex numbers written in trigonometric form

WKU QEP (Quality Enhancement Plan) Goal: "Western Kentucky University prepares students to be productive citizens of a global society and provides service and lifelong learning opportunities for its constituents."

Course Outline: The following course outline is subject to change at the discretion of the instructor. Any changes will be announced in class.

Unit 1 1.1 Angles 1.2 Angle Relationships & Similar Triangles 1.3 Trigonometric Functions 1.4 Using Definitions of Trigonometric Functions 2.1 Trig Functions (Acute Angles) 2.2 Trig Functions (Non-acute Angles) 2.3 Trigonometric Function Values 2.4 Solving Right Triangles 2.5 Applications of Right Triangles **Exam 1** **Unit 2** 3.1 Radian Measures 3.2 Applications 3.3 The Unit Circle & Circular Functions 3.4 Linear & Angular Speed 4.1 Graphs of Sine & Cosine 4.2 Translations of Sine & Cosine Graphs 4.3 Graphs of Tangent & Cotangent 4.4 Graphs of Secant & Cosecant **Exam 2**	**Unit 3** 5.1 Fundamental Identities 5.2 Verifying Identities 5.3 Sum/Difference Identities: Cosine 5.4 Sum/Difference Identities: Sine & Tangent 5.5 Double-Angle Identities 5.6 Half-Angle Identities 6.1 Inverse Circular Functions 6.2 Trigonometric Equations I 6.3 Trigonometric Equations II **Exam 3** **Unit 4** 7.1 Oblique Triangles & Law of Sines 7.2 The Ambiguous Case of the Law of Sines 7.3 The Law of Cosines 7.4 Vectors, Operations & the Dot Product 8.2 Trigonometric Form of Complex Numbers 8.3 The Product & Quotient Theorems 8.4 DeMoivre's Theorem **Exam 4** **Final Exam: August 13th**