TRIGONOMETRY MATH 117 SUMMER 2015

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equisites: 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: Trigonometry (3 hours) meets five learning objectives as part of the general education requirement for quantitative reasoning. Students in Math 117 will be able to apply knowledge of the 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. Further, students will learn to model and solve problems appropriate for the field of study in majors of the sciences.

MATH 117 specifically meets the five learning objectives as detailed below:

Learning Objective 1: Interpret information presented in mathematical and/or statistical forms; *Learning Objective 2*: Illustrate and communicate mathematical and/or statistical information symbolically, visually and/or numerically;

Learning Objective 3: Determine when computations are needed and execute the appropriate computations;

Learning Objective 4: Apply an appropriate model to the problem to be solved;

Learning Objective 5: Make inferences, evaluate assumptions, and assess limitations in estimation modeling and/or statistical analysis.

MATHXL Student Access Code – REQUIRED Course ID: XL1V-21MW-201Z-5SC2

CALCULATOR: The graphing calculator (TI–83 or TI–84) is required. The TI-89 and any scientific calculator is not allowed.

CELL PHONES, IPODS, COMPUTERS & TEXT MESSAGING: These items and activities

<u>are strictly prohibited</u>. 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. Consequences of violations of this policy will result in pop quizzes for the entire class. There will be no partial credit, nor make-up quizzes given.

Attendance: Regular attendance in this course is mandatory. As an adult, you are

responsible for finding out what work you missed during your absence (either from classmates or from me). <u>A student who misses more than two (2) class meetings should officially withdraw from the course or expect a failing grade for the semester.</u> Furthermore, you are expected to be in class on time and present for the duration of the class. _

EXAMS: There will be 3 or 4 exams throughout the summer session. Each exam will be worth at least 100 points. Missing an exam is a serious matter. **Make-up exams will not be given** except under extenuating circumstances provided the instructor is informed <u>in advance</u>.

QUIZZES: Except in the case of extended absence due to serious illness, in-class quizzes **may not** be made up.

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HOMEWORK: Homework will be assigned daily and will be in the form of handouts and Math XL software unless otherwise specified. Students will be required to have access to a computer. If you do not have a home computer, you can use computers in any of the labs on south campus or main campus. These exercises will help you master the material. If you have any questions over the homework, I will answer these questions at the beginning of each class. You should realize that homework is time consuming and necessary for your mastery of the material. Homework will be graded on the computer unless otherwise specified and will be prescribed with strict deadlines for completion.

Hand-in assignments must be received by the instructor on the day they are due.

Final Exam: A comprehensive final exam will be given on Friday, June 19th.

Grading: The grade you receive in this course will be determined by the following:

Tests	\Rightarrow	50%
Daily work, Lab & Math×l	\Rightarrow	30%
Final Exam	\Rightarrow	20%

Final grades will be assigned as follows:

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

Western Kentucky University prepares students to be productive citizens of a global society and provides service and lifelong learning opportunities for its constituents.

Disability Accommodation: Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the **Student Success Center**, **Disability Services**, **DUC A-200**. The phone number is (270) 745 - 5004.

MATH 117C Course Outline

Algebra Review: Solving Quadratic Equations & Rationalizing /Simplifying Radicals

- 1.1 Angles
- 1.2 Angle Relationships & Similar Triangles
- 1.3 Trigonometric Functions
- 1.4 Using Definitions of Trig Functions
- 2.2 Trig Functions (Non-acute Angles)
- 2.3 Trig Function Values
- 2.4 Solving Right Triangles
- 2.5 Applications of Right Triangles
- 3.1 Radian Measure
- 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

- 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
- 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 and the Dot Product
- 7.5 Applications of Vectors
- 8.1 Complex Numbers
- 8.2 Trigonometric Form of Complex Numbers
- 8.3 The Product & Quotient Theorems
- 8.4 DeMoivre's Theorem

FINAL EXAM: June 19th