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Math 4A - 55338: Trigonometry

Class meetings: Reedley College CCI 201, 11:00-12:50, M-Th, 1/12/15-3/12/15

Text: : Precalculus with MyLab 5/e, Lial

Prerequisite: Mathematics 102 and 103 or equivalent

Basic Skills Advisories: Eligibility for English 125 and 126

Description

This course in trigonometry of the plane concentrates on trigonometric functions and their applications. Topics covered include the trigonometric functions, solution of right triangles, radian measure, fundamental identities, angular measure, graphs, logarithms, functions of composite angles, oblique triangles, trigonometric equations, inverse trigonometric functions, and complex numbers, including powers and roots. The study of polar coordinates and polar equations is also covered.

Expectations / Responsibilities

Instructor

- Motivate and inspire student success.
- Provide a classroom climate in which the student takes responsibility for learning.
- Provide the necessary instruction and model the quality of work to be successful in Math 4A.
- Clearly communicate progress being made in a timely fashion.

Student

- Follow the class rule – **Be Nice**.
- Be in each class on time with *full participation* from *start to finish*.
- Stay off of your phone while in class.
- Complete assignments by the due date.
- Study Trigonometry daily.
- Learn the material that is taught and *seek additional assistance* when necessary.
- All written work must be neat, complete, concise and accurate to receive full credit.
- Promptly communicate any class related issues.
- If you miss a class in the first 3 weeks you may be dropped.
- If you miss any class time it may be counted as an absence.
- If you have more than 3 absences, you may be dropped.
- If your Homework average is below 90% on 2/18, you may be dropped.
- If your Test average is below 60% on 2/18, you may be dropped.

Grading

Scale **A** 90-100% **B** 80-89% **C** 70-79% **D** 60-69%

Tests 80% There will be 2 tests and a final. There are **no make-up tests**. A test may be taken early with prior approval.

Homework 20% Homework may consist of written assignments and assignments on MyLab. **No late homework is accepted.**

Testing Procedure

Tests are to be completed in pencil. There are **no make-up tests**. You may use a scientific calculator. No graphing calculator. **NO PHONE**.

If you are more than 10 minutes late for your arranged test, then the test will be a **ZERO**. The end time for the test is the end time for the class.

Once you have started the test, you must complete the test and turn it in before leaving the room.

You will be informed if notes, charts, and scantrons may be used for specific tests.

Academic Dishonesty

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

***NOTE:** If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act or section 504 of the Rehabilitation act please contact me as soon as possible.*

Please refer to SCCCD policies for guidance on all matters relating to this course.

Objectives

In the process of completing this course, students will:

- A. Evaluate trigonometric function values of both acute and obtuse angles using both special angle values and calculator values.
- B. Use the unit circle to determine the radian measure of angles and convert from radian to degree measure and vice versa.
- C. Derive the basic trigonometric identities, sum and difference formulas, and double-angle and half-angle formulas.
- D. Use the Law of Sines and Law of Cosines to solve both acute and obtuse triangles.
- E. Use polar coordinates to represent points and to graph polar equations.
- F. Represent vectors in the rectangular coordinate system and identify their magnitude and direction; perform operations (addition, subtraction, scalar multiplication and dot product) with vectors.
- G. Graph trigonometric functions.

Course Outline

A. Trigonometric functions: basic concepts, angles, angle relationships, similar triangles, definitions of the trigonometric functions, applications.

B. Acute angles and right triangles: trigonometric functions of acute angles, reference angles, coterminal angles, evaluating trigonometric functions (exact and approximate), solving right triangles, applications of right triangles.

C. Set up, sketch and analyze vector application problems.

D. Radian measure and circular functions: radian measure, applications of radian measure, circular functions of real numbers, linear and angular velocity.

E. Graphs of the circular functions: graphs of the sine and cosine, graphs of the other circular functions.

F. Trigonometric relations (identities): fundamental identities, verifying trigonometric identities, sum and difference formulas for cosine, sine and tangent, cofunction identities, double angle identities, half angle identities.

G. Inverse trigonometric functions and trigonometric equations: Inverse trigonometric functions, trigonometric equations, inverse trigonometric equations.

H. Polar coordinates and De Moivre's theorem: polar coordinates, complex numbers, De Moivre's Theorem

I. Applying computer and/or graphing calculator technology: using a scientific calculator to perform trigonometric calculations, using a graphing calculator and/or computer software to explore trigonometric graphs.