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Math 4A-51818: Trigonometry

Class meets: TBA

Text: : Trigonometry with **MyLab** - Lial, Hornsby, Schneider, 9th ed.,

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

- Study Trigonometry and check your email daily!
- Complete assignments on **MyLab** by the due date.
- Attend all face-to-face meetings as arranged.
- Learn the material that is taught and *seek additional assistance* when necessary.
- Promptly communicate any class related issues.
- A student may be dropped if they have not enrolled on **MyLab** by 6 PM on Wednesday, 1/11.

Important Dates

| | | |
|-------------------|---|--|
| January 27, 2012 | F | Last day to register for a full-term fall class |
| January 27, 2012 | F | Last day to drop a fall full-term class to avoid a "W" |
| February 10, 2012 | F | Last day to change a class to/from Pass/No Pass |
| March 9, 2012 | F | Last day to drop a full-term class to avoid a grade |
| TBD | | Final Exam: exact time and location TBD |

Grading

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

Tests 70% There are **4 Face-to-Face Tests**.

Homework 20% Homework assignments will be completed online.

Quizzes 10% Quizzes will be completed online.

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.
- H. Use the trigonometric functions to determine sides and angles of right and oblique triangles.

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.