

Course Number/Title: MA122 Plane Trigonometry
Department: Mathematics

Required Text: Bittinger, Beecher, Ellenbogen, Penna. (2013). *Algebra and Trigonometry Graphs and Models* (5th ed.) ISBN-13: 9780-321-78397-4

Course Placement: High School Senior

Instructor: Miss Wetter

Email: dwetter@ruraltel.net

Year: Spring 2013

Credit Hours: 3

Days/Time: M – F

Room #: IDL

Pre-requisite: MA178 or equivalent

Phone: 787-673-4223

Office Hours: 7:45 a.m. – 4:00 p.m.

Rationale: This course will provide the student with an opportunity to introduce and reinforce many of the concepts of trigonometry, may be used to meet a program requirement in mathematics for some associate degree programs, may be used as an elective by any student wishing to study trigonometry, and as a preliminary course needed for the study of calculus.

Course Description: This course includes trigonometric functions and their applications, solution of triangles, trigonometric identities and equations and graphical analysis of the trigonometric functions.

CCC Student Learning Outcomes Addressed in This Course:

1. effective oral and written communication skills
2. a higher level of critical and creative thinking processes
3. ability to solve problems using a variety of techniques and methods
4. ability to utilize the technology relevant to the learner's discipline

Course Outline: This course provides an understanding of the concepts of trigonometry and the ability to apply these concepts to problems. Concepts of trigonometry are found in a variety of disciplines, including mathematics, physical science, engineering, computer science, and areas of scientific research. Trigonometry is thus a useful course for students in those programs.

Course Learning Objectives:

Upon completion of the course the student will be able to:

- Graph and implement the graphing calculator
- Find Trigonometric ratios exact and approximate
- Use trigonometric identities
- Solve and graph trigonometric equations
- Apply the Law of Sines and the Law of Cosines
- Manipulate complex numbers
- Use vector operations in applications

Course Competencies: The student will demonstrate a mastery of the following skills:

- Define terminology used with angles
- Use algebra skills to solve equations
- Demonstrate knowledge of the Pythagorean theorem
- Demonstrate knowledge of the relationship in 30-60-90 and 45-45-90 right triangles
- Graph trigonometric and algebraic functions in the Cartesian plane
- Find the distance between two points
- Compute coterminal angles
- Put an angle in standard position in the co-ordinate system
- Define the six basic trigonometric functions
- Know the signs of the functions in all four quadrants
- Calculate all functions of an angle given a point on the terminal side of an angle
- Demonstrate knowledge of the reciprocal relationships
- Demonstrate knowledge of the ratio identities
- Demonstrate knowledge of the Pythagorean identities
- Prove identities using the basic relationships
- List the trigonometric functions as ratios of the sides of a right triangle
- Calculate complementary functions
- Solve right triangles
- Solve application problems involving vectors
- Operate a calculator to determine functions and inverses
- Convert from a decimal degree to degrees minutes and seconds and vice versa
- Compute reference angles
- Manipulate complex numbers and perform operations on complex numbers

Graph polar coordinates

Convert coordinates from polar to rectangular and vice versa

Revised & Approved May 2003

Kansas Core Outcomes

The learning outcomes and competencies detailed in this syllabus meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.

Instructional Methods

Mathematics is a "participatory activity" ... the more you do, the more you learn & master. In general, new concepts/skills/procedures will be presented, discussed and demonstrated in the classroom with student-teacher interaction being desirable. Problems that reinforce and expand upon presentations will be assigned and these are expected to be completed by the next class period. Problems may be discussed in class with adequate opportunities for "follow-up" and clarification(s).

Assignment Policy

Assignments are expected the next class period after they are assigned and will not be accepted after the test on the chapter. Assignments will not be accepted unless they are complete. Please include full name, class, page number and problem numbers. Do assignments in pencil and on regular notebook paper.

Copy the problems as appropriate. Show all of your work even if it seems obvious. Circle the answer at the conclusion of the problem or make sure the final answer is obvious. Keep assignments neat and legible. If an assignment is unreadable, it will not be accepted and should be redone. When faxing or emailing assignments please number your pages (for example 1 of 3, 2 of 3, 3 of 3) and be sure your name is on each page.

Test Policy

Dates of tests are announced on the course website, on the schedule of assignments, and in class. Unless there are extenuating circumstances for absence or arrangements are made with the instructor, you must be in attendance for the tests; otherwise you will not be allowed to make them up.

Academic Integrity Policy

Colby Community College defines academic integrity as learning that leads to the development of knowledge and/or skills without any form of cheating or plagiarism. This learning requires respect for

Colby's institutional values of quality, service and integrity. All Colby Community College students, faculty, staff, and administrators are responsible for upholding academic integrity.

Cheating is giving, receiving, or using unauthorized help on individual and group academic exercises such as papers, quizzes, tests, and presentations through any delivery system in any learning environment. This includes impersonating another student, sharing content without authorization, fabricating data, and altering academic documents, including records, with or without the use of personal and college electronic devices.

Plagiarism is representing or turning in someone else's work without proper citation of the source. This includes unacknowledged paraphrase, quotation, or complete use of someone else's work in any form. It also includes citing work that is not used and taking credit for a group project without contributing to it. The following procedure will be used for students who violate the policy:

- First Offense – Student will receive a zero for the assignment and the student will be reported to the Dean of Academic Affairs.
- Second Offense – The student will be reported to the Dean of Academic Affairs and removed from the class.
- Third Offense – The student will be reported to the Dean of Academic Affairs and dismissed from the college.

Any questions about this policy may be referred to the Dean of Academic Affairs.

Assessment

Colby Community College assesses student learning at several levels: general education, program, and course. The goal of these assessment activities is to improve student learning. As a student in this course, you will participate in various assessment activities. An example of your work, a paper, some test questions, a presentation, or other work may be selected for assessment. This process will not affect your grade, will not require you do additional work and your evaluation will be confidentially handled. Results of these activities will be used to improve teaching and learning at Colby Community College.

Attendance Policy

Attending class is the means by which you learn the content of the course, share ideas and interact with other students, turn in assignments and receive feedback from your instructor. Attendance is very important and cannot be made up. If you will be absent for a school related activity, please contact the instructor. Also in the case of illness, please contact the instructor. All other absences will be considered unexcused and no credit will be given for assignments or tests given on that date.

Withdrawal for Non-Attendance

If you miss class a lot, you will be dropped from this course. According to college policy you will be withdrawn for non-attendance at mid-term if you have missed more than one third of the total class meetings without any attempt to make arrangements with the instructor. This withdrawal could affect your financial aid and/or your athletic eligibility. It may also mean that it could take you longer to achieve your academic goals.

Cell Phone Policy

It is your choice to be in this class. When you come to class, the instructor and fellow students demand your attention and respect. Cell phone usage, including text messaging, iPod usage, or usage of any other electronic device is not allowed in class. Any student who cannot meet these expectations will be asked to leave the classroom and will be counted absent for that day. Please turn off all cell phones prior to entering the classroom. Cell phones will not be allowed for calculator usage on tests.

Textbook

Bittinger, Beecher, Ellenbogen, Penna. Algebra and Trigonometry Graphs and Models, 5th Edition. Pearson, 2013. ISBN-13: 9780-321-78397-4

Resources

Your classroom textbook should serve as your primary resource for the course. It is also desirable (and strongly recommended) that you have a graphing calculator. I will provide support for TI-83, TI-84, and TI-89 calculators.

Accommodations for Students With Disabilities

According to the Americans with Disabilities Act, it is the responsibility of each student with a disability to notify the college of his/her disability and to request accommodation. If a member of the class has a documented learning disability or a physical disability and needs special accommodations, he/she should contact Student Support Services, which is located in the Student Union.

Disclaimer

I reserve the right to change any information contained in this document, when necessary, with adequate notice given to the student. Notice shall be given in the classroom during class. No other notice is required. It is the students' responsibility to keep up with any changes, modifications, adjustments or amendments that are made to this document.