Math 130 Trigonometry
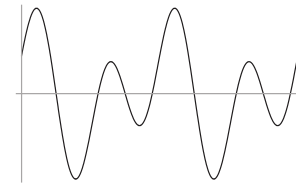
Fall 2009   Tu Th 8:10 – 9:50 (Section AA)

Instructor:	Jon Freedman Office: 2307 Phone: 738 – 7032 e-mail: freedmanj@smccd.edu Website: www.smccd.edu/accounts/freedmanj/

Office Hours: MWF 9 – 10;   M Th 1:30 – 2:30;   and most other times *by arrangement*.

Prerequisite: Math 120 with C or better, or appropriate score on placement test.

Important Details: (1) Math 130 is a prerequisite for majors in Engineering, Mathematics, and Physics. Check yours.

(2) Transfer: CSU (B4); UC (credit limit).

Text: Sullivan. *Trigonometry A Unit Circle Approach.* 8th ed. New Jersey: Pearson Prentice Hall 2008. (grey cover).

Materials: A TI–84 (or TI–83+) graphing calculator is required for this course. Other graphing calculators may perform the same functions and may be acceptable but see me about this. If you have a TI–89, TI–92, or other technology that can perform symbolic manipulations you may not be allowed to use it on some forms of assessment.

Important Dates:

Last day to Add this course:	Tuesday, September 1
Last day to Drop this course without a W:	Friday, September 11
Last day to Withdraw from class:	Wednesday, November 18
Holidays:	9/7; 11/11 – 13; 11/26 – 27
Last regular class:	Thursday, December 10
Final Exam (comprehensive):	Monday, December 14 11:10 – 1:40 pm

Assignments: Most assignments will be given online through My Mathlab (packaged with the textbook or available online). There will be several projects and some group assignments in class.

Grading:

Assignments (homework, classwork, quizzes) (30%)

3 – 5 Tests (50%)

Final (20%)

You will also be required to pass a techniques test in order to pass the class. You may retake the test as often as you wish but you must pass it with at least 95% proficiency.

I will drop your worst test score (Not the final). There will be no makeup tests. If you are late for a test you will have only the remaining time to complete the test (so don't be late). If you know you are going to miss a test date, contact me at least three days in advance and we can arrange an alternate test to be taken in advance of the class test date.

I will excuse your worst score from each category (HW, tests, quizzes) but will not give makeup work. I will give quizzes often. I will drop your worst quiz. There will be no makeup quizzes.

Grading Scale:

$$A \geq 90\%$$
$$80\% \leq B < 90\%$$
$$70\% \leq C < 80\%$$
$$60\% \leq D < 70\%$$
$$F < 60\%$$

Attendance: Your involvement in class and your participation in the process of discovering concepts will be fundamental in your understanding of math. I try not to lecture directly from the book but rather to provide experiences enhanced by the book. You will miss a lot of material if you do not attend and it is unlikely that you will pass the course.

Withdrawal Policy: If you decide to drop this class you must do so formally either by using WebSMART or by filing the correct form with the registrar's office. The likelihood of you passing the class after four absences is almost 0. If you miss more than 8 hours of class and still desire to remain in the class you must meet with me and convince me that you can learn the material necessary to pass the class.

Course Contents: We will cover the majority of Chapters 1 through 5, as well as some supplemental materials. By the completion of the course you will be able to demonstrate the following skills:

- Knowledge of the definitions of the six trigonometric ratios and the ratios associated with special triangles (30– 60 and 45 – 45). The ability to set up and solve equations involving these ratios and any right triangle.

- Complete knowledge of reference angles, coterminal angles, the relationship between radian and degree measure.

- For the functions $f(x) = A \sin B(x + C) + D$ and $f(x) = A \cos B(x + C) + D$ you will be able to identify amplitude, vertical and horizontal shifts, and period.

- You will be able to sketch a graph of the functions $f(x) = A \sin B(x + C) + D$, $f(x) = A \sin (Bx + C) + D$, $f(x) = A \cos B(x + C) + D$, $f(x) = A \cos (Bx + C) + D$, $f(x) = \tan x$, $f(x) = \sec x$ from their formula and you will be able to reverse this process and write the equation from the graph.

- You will be able to derive a cyclic function $f(x) = A \sin B(x + C) + D$ or $f(x) = A \cos B(x + C) + D$ to represent data from a table or situation.

- You will be able to derive the Pythagorean identity $\sin^2 x + \cos^2 x = 1$ and the equivalent identities it implies. You will be able to derive the identity relating $\sin x$, $\cos x$, and $\tan x$.

- You will be able to apply definitions and the two identities above to derive other identities including double angle and half angle formulas.

- You will know and be able to apply the Law of Sines and the Law of Cosines.

- You will know the manipulations of vector arithmetic including dot products

- You will be able to use the graphing calculator to help you analyze complex functions, derive formulas from data, and perform various analyses on a trigonometric function.

- You will know the polar and trigonometric representations of complex numbers and the arithmetic associated with these representations.

Tutoring: Think seriously about joining MESA (Rm. 7309). If you have any interest in Mathematics, Engineering, or the Sciences you should join MESA and make use of their many support resources. Just sitting in a supportive environment can be a tremendous help.

The Learning Center (TLC) is a good resource for semi-free tutoring in all of your classes.

Assistance: In Coordination with the DSP&S office, reasonable accommodations will be provided for qualified students with disabilities. If you have an accommodation letter, please meet with me during my office hours to discuss your needs. For more information, please contact DSPS office in building 2 at 738-4280.

Academic Dishonesty: I strongly encourage you to form study groups and to work together to understand the material covered in this class. Explaining a concept is a valuable way for you and another to develop your insight and your skills. Copying work is of no value to you academically. Consequently, if I find that you are submitting any part of another's work as your own, you will not receive credit for it and it will not be dropped as a lowest score. The same holds true for any other kind of academic dishonesty. There is no situation that could arise in this class that would justify risking expulsion. If you are having any difficulty, PLEASE see me about it so that we can work together in resolving the issue.