



Course Syllabus Details

Topic	Detailed Information
Course Name	Remote College Trigonometry, Fall, 2022
Course CRN and Term	20823, Fall, 2022
GT Pathways Category	GT-MA1: Mathematics
Credits and Delivery Method	3 Credits. Remote Delivery.
Time Expectation	9 hours per week
Location of Class	Remote
Meeting Dates and Time	MW – 8:15 – 9:30 AM
Instructor	Harry S. (Steve) Mills
E-mail	Hmills1@online.aims.edu
Office Location	Remote
Phone Number	970-290-0550
Office Hours	TBA
Drop Deadline Date	September 2 nd , 2022 Your ability to add courses after this date may be limited. See your advisor for assistance with class scheduling.
Course Withdrawal Date	November 2 nd , 2022 Remember, withdrawal does not come with any reductions or refunds in tuition. A withdrawal will also place a “W” grade on your transcript. Please contact your advisor to see if a withdrawal is appropriate given your specific situation.
Other Important Dates	https://www.aims.edu/resource-library/academic-calendars
Student Services	https://www.aims.edu/student-life/student-services

Course Requirements

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Prerequisite(s)	Successful completion of MAT 1340 (College Algebra) with a ‘C’ or better.
Co-requisite(s)	None
Academic Policies – These Standards of Behavior statements apply to every course at Aims Community College and are hereby incorporated into this document.	Closely review these policies at: https://www.aims.edu/academic-policies
Materials	WebAssign access for homework and tests. Graphing calculator recommended, but online graphers also work. For tests, a scientific calculator.

Topic	Detailed Information
	Larson's Trigonometry, 10 th Edition is what the course is based on. But any edition you can acquire should suffice, if you want a physical book. Otherwise, there is an e-book included in the WebAssign.
Other Necessary Items	

Course Information

Course Description: Explores trigonometric functions, their graphs, inverse functions and identities. Topics include: trigonometric equations, solutions of triangles, trigonometric form of complex numbers, and polar coordinates. This course provides essential skills for Science, Technology, Engineering, and Math (STEM) pathways. This is a statewide Guaranteed Transfer course in the GT-MA1 category. Course is not repeatable for credit.

Course Learning Outcomes – According to the Colorado Community College Common Course Database, upon completion of this course, the student/learner should be able to:

1. Utilize basic definitions of trigonometric concepts.
2. Extend concepts of trigonometry to solve application problems.
3. Apply the six inverse trigonometric functions.
4. Graph trigonometric functions.
5. Make use of trigonometric identities.
6. Utilize methods of analytic trigonometry to solve trigonometric equations.
7. Apply definitions of the polar coordinate system to perform operations in the rectangular, polar and complex systems.

Topical Outline – These topics will be covered in class, but not necessarily in this order:

- I. Basic definitions of trigonometric concepts
 - A. Decimal degree and degree minute seconds
 - B. Radian and degree measure conversion
 - C. Definition of the six trigonometric functions using right triangles
 - D. Fundamental trigonometric identities
 - E. Trigonometric functions on the unit circle
 - F. Reference angles
 - G. Coterminal angles
- II. Concepts of trigonometry to solve application problems
 - A. Applications of right triangles
 - B. Arc length
 - C. Area of a sector

- D. Angular and linear velocity
- E. Law of Sines
- F. Law of Cosines
- G. Area using trigonometric functions
- III. Six inverse trigonometric functions
 - A. Definition of the six inverse trigonometric functions
 - B. Evaluation of inverse trigonometric expressions
 - C. Domain and range of the inverse trigonometric functions
 - D. Compositions of trigonometric and inverse trigonometric functions
- IV. Trigonometric functions
 - A. Graphing the six trigonometric functions with transformations
 - B. Graphing the six inverse trigonometric functions
 - C. An introduction to combinations of trigonometric and algebraic functions
- V. Trigonometric identities
 - A. Fundamental trigonometric identities (reciprocal, quotient and Pythagorean)
 - B. Sum and difference trigonometric identities
 - C. Double and half angle trigonometric identities
 - D. Cofunction trigonometric identities
 - E. Even and odd trigonometric identities
 - F. Proving and verifying non-standard trigonometric identities
- VI. Methods of analytic trigonometry to solve trigonometric equations
 - A. Using trigonometric identities to simplify equations and expressions
 - B. Solving trigonometric equations
 - C. Trigonometric equations graphically
 - D. Products/Quotients of Complex Numbers in Polar Form
 - E. Powers and roots of complex numbers
- VII. Definitions of the polar coordinate system to perform operations in the rectangular, polar and complex systems.
 - A. Converting points and equations between rectangular and polar form
 - B. Graphing polar equations
 - C. Trigonometric form of complex numbers
- VIII. Vector operations and parametric equations
 - A. Definition of vectors
 - B. Vector operations
 - C. Horizontal and vertical components
 - D. Angle between two vectors
 - E. Applications of vectors
 - F. Parametric equations

https://erpdnssb.cccs.edu/PRODCCCS/ccns_pub_controller.p_command_processor

State General Education and Common Learning Outcomes: (for GT Pathways Courses)

Competency: Quantitative Literacy:

Students should be able to:

- 1. Interpret Information**
 - a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
- 2. Represent Information**
 - a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

3. Perform Calculations

- a. Solve problems or equations at the appropriate course level.
- b. Use appropriate mathematical notation.
- c. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

4. Apply and Analyze Information

- a. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
- b. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
- c. Make judgments based on mathematical analysis appropriate to the course level.

5. Communicate Using Mathematical Forms

- a. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

Aims Common Learning Outcomes – These outcomes define the expectations of an Aims Community College education and provide the benchmarks against which the college holds itself accountable. Find the outcomes at

<https://www.aims.edu/departments/institutional-research/assessment>

Course Delivery Method

Remote. Lecture/Q&A MW 8:15 – 9:30. Most of your time will be spent doing WebAssign homework. You will also take your tests via WebAssign.

Code of Conduct

To keep our college community safe, students are expected to comply with health guidelines as directed by the College, public health officials, and/or ordinance of a municipality, county, Governor of the State of Colorado, or any Executive Order of the President of the United States. Download the complete copy of the [Student Code of Conduct](#).

MY rule is exercise common sense and common courtesy. If you do NOT, we'll find a rule in the Code of Conduct that you broke. I've never had to do that, because common sense prevailed.

Reuse of Instructional Materials

Reuse or distribution of instructional materials (e.g., PowerPoints, videos, class recordings, assessments, etc.) or student created content (e.g., online discussion posts, presentations, etc.) without approval is prohibited.

Attendance Policy

Attendance is 10% of your grade. Students who don't or can't attend at the appointed hour will be given an opportunity to make up for some of that with other tasks, like testing new software for next semester.

Communication and Feedback

Primary communication will be via e-mail, although you may certainly call me on my cell phone any time.

Grading

I keep it pretty simple:

Homework: 30%

Tests: 60%

E-Mail Settings: 5%

Attendance: 5%

Grading Scale

Percentage	Grade	Details
90% - 100%	A	(Superior and excellent)
80% - 89%	B	(Above average)
70% - 79%	C	(Average)
60% - 69%	D	(Below average level of achievement)
Below 60%	F	(Not acceptable)

Course Schedule: <https://harryzaims.com/122/122-fall-22/122-schedule-fall-22.pdf>