



Course Syllabus Details

Topic	Detailed Information
Course Name	College Trigonometry - Blended
Course - Section and Term	MAT 1420 – ZS01 Spring, 2026
GT Pathways Category	GT-MA1
Credits and Delivery Method	3 Credits Remote via ZOOM:
Time Expectation	3 credits times 3 hours per credit = 9 hours per week
Location of Class	ZOOM Link: https://us02web.zoom.us/j/82201294961?pwd=YLRTQXE8Zo5aWhX501vVFB5EmEotd.1
Meeting Dates and Time	MW 8:15 AM – 9:30 AM
Instructor	Harry S. (Steve) Mills
E-mail	hmills1@online.aims.edu
Office Location	Door is always open (Meaning call me any time). We will meet in ZOOM: https://us02web.zoom.us/j/82201294961?pwd=YLRTQXE8Zo5aWhX501vVFB5EmEotd.1
Phone Number	970-290-0550
Office Hours	On Demand
Drop Deadline Date	Monday, February 2 nd
Course Withdrawal Date	Wednesday, April 8th
Other Important Dates	https://www.aims.edu/resource-library/academic-calendars



Topic	Detailed Information
Student Services	https://www.aims.edu/student-life/student-services
Mental Wellness	<p>If you are experiencing an immediate mental health concern the following resources are available:</p> <p>*Call or text 988 or visit 988 LIFELINE *Colorado Crisis Services @ 1-844-493-8255 or Text "Talk" to 38255</p> <p>Select Academic Policies to access more mental wellness and success resources. (https://www.aims.edu/academic-policies)</p>

Course Requirements

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Prerequisite(s)	A grade of 'C' in College Algebra
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 Academic Policies . (https://www.aims.edu/academic-policies)
Materials	<p>WebAssign access for homework and tests. Graphing calculator recommended, but online graphers also work. For tests, a scientific calculator.</p> <p>Larson's Trigonometry, 10th 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.</p>
Other Necessary Items	<p>The main thing is to be able to make clean, high-contrast, multi-page PDFs of your written work that are easy to read. You'll only have to do this 5 times this semester.</p> <p>If you have a good pen tablet for writing math and making PDFs of your written math (Not typed. Written.), you</p>



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	<p>should be golden. Just please use plain white wallpaper/background.</p> <p>You can also do your work on regular plain white paper. Not notebook paper. Letter paper without the lines. If you write dark (Pen is OK. Just put a line through your mistakes) and have access to a good scanner setup, that'll work. Here are some options:</p> <ol style="list-style-type: none">1. A pen tablet or other device you can write on.2. Printer/Scanner devices.<ol style="list-style-type: none">a. Personal printer/scannerb. Aims printers/scannersc. Kinko's, UPS Store, FedEx Office3. RocketBook PDFs4. CamScanner app (I've had good and bad results, depending on the phone and the skill of the student using it.)5. Here's a link to Tech Assistance at the Learning Commons. Student Technology and Academic Resources Support. <p>Your first written assignment will be all about making sure that you're submitting written work appropriately.</p>

Course Information

Course Description:

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.

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



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>

Remote. Lecture/Q&A MW 8:15 – 9:30 a.m. Most of your time will be split between doing WebAssign homework and Written Assignments.

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 always 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

Students who attend less need to communicate more. If you're absent and uncommunicative, don't expect me to bend things out of shape for you when you get behind, later.

Communication and Feedback

Primary communication will be in the remote classroom and office, via ZOOM. After that, e-mail on D2L using online.aims.edu e-mail tool with the correct settings, by "Ask Your Teacher" and "Request an Extension" on WebAssign, and at 970-290-0550 *any time*.

Grading

E-mail Settings: 5%

Attendance: 5%

WebAssign Homework: 30%

Written Homework: 30% (One assignment per week)

Written Midterm and Final Tests: 30% - These are in-person affairs. You will need to come to HORIZON HALL 107 on one of the scheduled days, of which there will be 2. Students who are too far remote to make it to Greeley can arrange alternate test locations. Just let me know that you have a need.

Your percent grade will therefore be calculated as follows:

$0.05 * \text{E-Mail Settings} + 0.05 * \text{Attendance} + 0.3 * \text{WebAssign Homework} + 0.3 * \text{Written Homework} + 0.3 * \text{Written Midterm and Final}$



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:

Spring, 2026 Schedule

For WebAssign Homework, see WebAssign, where you do the homework. That is the best source for what we're covering, when.

For Written Work, see "Assignments" on D2L.

For Written Tests:

Written Midterm: Wednesday, March 11th.

Written Final: Monday, May 11th.