

## Course Details

Course Name	College Trigonometry
Course CRN and Term	41105
GT Pathways Category	GT-MA1
Credits and Delivery Method	3 Credits, Remote
Time Expectation	9 hours per week
Location	Remote
Meeting Dates and Time	8:15 – 9:30 a.m.
Instructor	Harry S. (Steve) Mills
Instructor E-mail	<a href="mailto:hmills1@online.aims.edu">hmills1@online.aims.edu</a>
Instructor Office Location	EDBH 134K
Instructor Phone Number	970-290-0550
Office Hours	TBA
The drop deadline for this course is	January 27 <sup>th</sup> , 2021 Your ability to add courses after this date may be limited. See your advisor for assistance with class scheduling.
The course withdrawal date for this course is	April 7 <sup>th</sup> , 2021 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	<a href="https://www.aims.edu/student/schedule/calendars/">https://www.aims.edu/student/schedule/calendars/</a>
Student Services	<a href="https://www.aims.edu/student/services.php">https://www.aims.edu/student/services.php</a>

## Course Requirements

Prerequisite(s)	MAT 121 College Algebra or higher, all with grade of C or better, or assessment.
Co-requisite(s)	None
Standards of Behavior & Policies – These statements apply to every course at Aims Community College and are hereby incorporated into this document.	Closely review these policies at: <a href="https://www.aims.edu/policies/standard-syllabus/">https://www.aims.edu/policies/standard-syllabus/</a>
Materials	Trigonometry, by Larson, 10 <sup>th</sup> Edition, ISBN: 9781337278461 is the textbook, officially, but we’ll be doing homework on WebAssign, which comes bundled with eBook. Go to <a href="http://webassign.net">webassign.net</a> and register for the course: Instructor: Steve Mills Class Key: <b>aims 6937 5485</b> WebAssign is the bare-minimum investment. If it’s between that and buying the book, then get the WebAssign.
Other	



## Course Information

### Course Description:

**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) Radian and degree measure conversion
  - b) Definition of the six trigonometric functions using right triangles
  - c) Fundamental trigonometric identities
  - d) Trigonometric functions on the unit circle
  - e) Reference angles
  - f) 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
- 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
- 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

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

Insert the required state general education common learning outcomes from the state website found at this link:

**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/prospective/common-learning-outcomes.php>

**Course Delivery Method** Remote lecture, video archives.



## **Code of Conduct**

In an effort 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. A complete copy of the Student Code of Conduct can be found at [www.aims.edu/student/conduct](http://www.aims.edu/student/conduct).

And we'll use that Student Code of Conduct any time a student forgets common sense and common courtesy. You remember those 2 things and refrain from cheating, then nothing more need be said.



## **Face Coverings**

To help mitigate the transmission of COVID-19, it is required that all students wear masks or other face coverings in classrooms, laboratories and other similar spaces where in-person instruction occurs. The masks/face coverings must cover both nose and mouth, be worn for the duration of class, inside all college buildings, and outside whenever you are or are likely to come within 6 feet of another person. Students who do not comply with face covering and social distancing expectations will be asked to leave class and referred to the Dean of Students. We are a community of care and together we will work to ensure we can all engage in learning in the safest way possible.

## **Reuse of Instructional Materials**

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



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- **Attendance** – Your attendance will be measured primarily by your progress in the course and performance thereon. As lectures are recorded and notes are posted, there’s a lot of flexibility, here, except for me, of course. In the event that your final grade is borderline between 2 letter grades, your attendance, recorded by the ZOOM program, will be factored in. Otherwise, it’ll all come down to your *performance*.
- **Communication and Feedback**  
Good thing about feedback: It’s instant.  
Bad thing about feedback: It’s online.  
This course, being designated “remote,” will administer all homework and tests online, through WebAssign.

Use hmills1@online.aims.edu to contact me by e-mail. This may also be accomplished by clicking on “E-Mail” in the Course Shell and clicking on “Mills, Steve” in the listing.

Call or text me at 970-290-0550 if you have something urgent, or wish for a 1-on-1.

As I have posted videos and notes on virtually all of the homework, I will not be giving a full-blown formal lecture, generally. Instead, I will expect students to read ahead and hit me with questions, so I can spend our time together on what you need, when you need it. I really want you to make use of the resources available and I don’t want to waste time telling you things you already got from the videos, where I explain pretty much everything in a problem-solving context.

If you want to make sure of your attendance numbers, just join the ZOOM and continue your work, with an ear out (or not) for what’s being said. I care about the learning, not jumping through hoops for bureaucrats. You would be wise to check out the notes, regardless, but as long as you’re keeping up on the homework and performing adequately, I’m not very interested in riding herd on you.

**IMPORTANT NOTE:** As we *are* testing online, using a learning management system, you get two (2) shots at every test. So take it early, then take it again after reviewing it. I *think* I can set it up that way with one test. If I can’t I’ll just copy it and post a 2<sup>nd</sup> version of it for a re-take. One of the benefits of WebAssign testing.

- **Grading**  
Tests: 70%  
Homework: 20%  
Attendance: 10%\*

\*Attendance at the live lecture will only count if it can make a difference. If I see you’re on the cusp of 2 different letter grades, I’ll drill deeper into your actual attendance, a permanent and perfect record of which is maintained automatically by the ZOOM program documentation accompanying the recordings.



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Grading Scale

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-spring-21/syllabus-and-schedule/122-schedule-spring-21.pdf>