

## Course Syllabus Details

| Topic                       | Detailed Information   |
|-----------------------------|--|
| Course Name                 | College Trigonometry (Remote)  |
| Course - Section and Term   | MAT 1420 – R11<br>Spring, 2025   |
| GT Pathways Category        | GT-MA1   |
| Credits and Delivery Method | 3 Credits<br>Remote via <a href="https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1">ZOOM</a> :<br><a href="https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1">https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1</a> |
| Time Expectation            | 3 credits times 3 hours per credit = 9 hours per week  |
| Location of Class           | ZOOM Link:<br><a href="https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1">https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1</a><br>Passcode: 660077  |
| Meeting Dates and Time      | 8:15 – 9:30 am, MW   |
| Instructor                  | Harry S. (Steve) Mills   |
| E-mail                      | <a href="mailto:hmills1@online.aims.edu">hmills1@online.aims.edu</a>   |
| Office Location             | Door is always open (Meaning call me any time). We will meet in ZOOM:<br><a href="https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1">https://us02web.zoom.us/j/82201294961?pwd=IYLRTQXE8Zo5aWhX501vVFB5EmEotd.1</a><br>Passcode: 660077                               |
| Phone Number                | 970-290-0550   |
| Office Hours                | On Demand  |
| Drop Deadline Date          | Monday, February 3 <sup>rd</sup>   |
| Course Withdrawal Date      | Wednesday, April 9 <sup>th</sup>   |
| Other Important Dates       | <a href="https://www.aims.edu/resource-library/academic-calendars">https://www.aims.edu/resource-library/academic-calendars</a>  |



**Aims**  
COMMUNITY COLLEGE  
COURSE SYLLABUS

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|------------------|---|
| Student Services | <a href="https://www.aims.edu/student-life/student-services">https://www.aims.edu/student-life/student-services</a>   |
| Mental Wellness  | <p>If you are experiencing an immediate mental health concern the following resources are available:</p> <ul style="list-style-type: none"> <li>*Call or text 988 or visit 988 LIFELINE</li> <li>*Colorado Crisis Services @ 1-844-493-8255 or Text “Talk” to 38255</li> </ul> <p>Select <a href="https://www.aims.edu/academic-policies">Academic Policies</a> to access more mental wellness and success resources.<br/>(<a href="https://www.aims.edu/academic-policies">https://www.aims.edu/academic-policies</a>)</p> |
|                  |   |

## Course Requirements

| Topic  | Detailed Information  |
|--|---|
| 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 <a href="https://www.aims.edu/academic-policies">Academic Policies</a> .<br>( <a href="https://www.aims.edu/academic-policies">https://www.aims.edu/academic-policies</a> )  |
| 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, 10<sup>th</sup> 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 (<b>Not typed. Written.</b>), you should be golden. Just please use plain white wallpaper/background.</p> |

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|-------|--|
|       | <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"> <li>1. A pen tablet or other device you can write on.</li> <li>2. Printer/Scanner devices.             <ol style="list-style-type: none"> <li>a. Personal printer/scanner</li> <li>b. Aims printers/scanners</li> <li>c. Kinko's, UPS Store, FedEx Office</li> </ol> </li> <li>3. RocketBook PDFs</li> <li>4. CamScanner app (I've had good and bad results, depending on the phone and the skill of the student using it.)</li> <li>5. Here's a link to Tech Assistance at the Learning Commons. <a href="#">Student Technology and Academic Resources Support</a>.</li> </ol> <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

[https://erpdnssb.ccs.edu/PRODCCCS/ccns\\_pub\\_controller.p\\_command\\_processor](https://erpdnssb.ccs.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>

Remote. Lecture/Q&A MW 8:15 – 9:30 a.m. 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 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: 20%

Written Homework: 20% (One assignment per week)

WebAssign Chapter Quizzes: 15%

Written Midterm and Final Tests: 35% (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.)

Your percent grade will therefore be calculated as follows:

$$0.05 * \text{E-Mail Settings} + 0.05 * \text{Attendance} + 0.2 * \text{WebAssign Homework} + 0.2 * \text{Written Homework} + 0.15 * \text{WebAssign Chapter Quizzes} + 0.35 * \text{Written Midterm and Final}$$

**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: Pending.