



Mathematics

## Math 1720 Course Syllabus

### Course Title:

Trigonometry

### Course Description:

Trigonometry. Three credits. This course satisfies the True Blue Core Quantitative Literacy requirement and meets specific requirements for programs as outlined in the MTSU Undergraduate Catalog.

#### Quantitative Literacy (Quant Lit) (3 hours)

- For all catalogs 2024-2025 and beyond, this course meets the True Blue Core (TBC) curriculum requirement for Quantitative Literacy (Quant Lit). To learn more about TBC requirements: <https://w1.mtsu.edu/truebluecore/core.php>.
- For all catalogs prior to 2024-2025, this course meets the general education curriculum requirements for Mathematics (3 hours). To learn more about general education requirements for catalogs prior to 2024-2025: [https://w1.mtsu.edu/gen\\_ed/requirements.php](https://w1.mtsu.edu/gen_ed/requirements.php).
- **The TBC outcome for Quantitative Literacy:** Students demonstrate the ability to interpret, represent, calculate, apply, and analyze numerical data in a variety of settings, and will make assumptions and communicate those assumptions based on quantitative information.

### Course Prerequisites:

A grade of C or better in MATH 1710 (College algebra), or equivalent.

### Instructor Information:

Instructor:

Office:

E-mail:

Phone:

Office Hours:

### Attendance:

Attendance is required at each class meeting. Participation in University sanctioned activities or in military duties and situations where the institution's policy on inclement weather is applicable are considered excused absences. However, non-attendance does not relieve a student of the responsibility for work covered or assigned. The instructor will keep a record of attendance for each student.

## Required Materials:

Textbook: Trigonometry, 12th Edition by Lial, Hornsby and Schneider,  
Pearson  
Calculator: A TI-83 or TI-84 Plus graphing calculator is required  
for this course.

## Course Purpose:

The goal of Math 1720 is to expand students' understanding of trigonometric concepts beyond the entry-level requirements for college and to extend their knowledge of trigonometry through relevant mathematical modeling with applications, problem solving, critical thinking skills, and the use of appropriate technologies.

## Course Requirements:

In order to accomplish the learning outcomes of this course, the learner is required to:

- Attend class lectures
- Participate in class activities
- Read and study assignments
- Solve assigned problem sets
- Complete test, quizzes, homework, etc.
- Complete a comprehensive final exam by the scheduled date/time for their respective section as stated in the Academic Calendar on MTSU Pipeline.

## Course Objectives:

Upon completion of this course the student will have:

- Enhanced mathematical skills and problem-solving skills.
- Applied mathematical methods to the solution of practical problems.
- Explored the capabilities of the graphing calculator to better understand trigonometric concepts.
- Developed an understanding of trigonometric functions from graphical, numeric, and symbolic viewpoints.
- Developed familiarity with the practical use of trigonometric functions in modeling real-world phenomena.
- Gained facility in the use and verification of trigonometric identities and their applications.

## Course Topics:

### ❖ Algebra Review Topics

- Exponents and Scientific Notation
- Basic techniques for solving equations
- Solving inequalities Equations and inequalities involving absolute value
- Graphical representation of equations and inequalities

### ❖ Functions and Relations

- Definitions of Relation and Function
- Symbolic, graphic, numeric and verbal representation of functions and relations
- The use of functions in mathematical modeling
- Domain and Range of relations and functions

- Function evaluation: symbolically, graphically and numerically
- Graphical x- and y- intercepts of functions
- Odd and even functions and their graphs
- (One to one-) functions and their inverses

#### ❖ Basic Trigonometric Concepts

- Angles and their measure, arc length and radius
- Angle versus slope
- Sine, cosine and tangent as ratios in a right triangle
- The interpretation of the tangent as a slope in a right triangle
- Co-secant and secant as the reciprocals of sine and cosine
- The Pythagorean identities
- Verification of trigonometric identities
- Determining distance and elevation from angle measurements
- Using the Laws of Sines and Cosines to complete non-right triangles
- Heron's formula for the area of a triangle

#### ❖ Analytical Trigonometry

- Sine and cosine as the coordinate functions of the unit circle
- Graphing trigonometric functions by scale adjustment
- Modeling periodic phenomena using (co-)sine functions
- The addition and subtraction rules for (co-)sines and tangents
- The double- and half-angle formulas for sines and cosines
- Product-to-sum and sum-to-product formulas for sines and cosines
- Power reduction formulas
- The inverse trigonometric functions: their graphs, domains and ranges
- The solution of trigonometric equations

### Course Evaluation and Grading:

- Alternative assessments, such as, collaborative investigations, projects, presentations, homework, group work, attendance etc. will account for 25% of the final grade. (most of this is the online homework)
- In-class quizzes and tests will account for 55% of the final grade.
- Comprehensive final exam accounts for 20% of the final grade. The final will only be given at the time noted below (under Important Dates) in the regular class meeting room. If you do not take the final exam, you will automatically be assigned the grade of F for the course.

### Final Exam:

The final examination is a Mathematics Department, multiple-choice, comprehensive examination given to all students enrolled in MATH 1720. Students are required to take the final examination at the official University-scheduled date and time. Official final examination dates and times are determined by class meeting time and are listed on the [University Registrar's homepage](https://www.mtsu.edu/registration/registration-guide/): (<https://www.mtsu.edu/registration/registration-guide/>).

The final examination is closed book. Students are allowed to use one 8.5"x 11" sheet of notes to the exam. Students must provide their own note page. Examination pamphlets and scratch paper are provided by the exam proctor.

Unexcused absences for the final examination result in a course grade of F.

MATH 1720-D (online sections) requires a proctored final examination to be taken at the MTSU Testing Center or an approved alternate testing site. Individual instructors may require additional proctored assessments.

Note: Students are required to bring the following materials to the final examination: (1) a large scantron, Form No. 4521, (2) a TI 83 or 84 Plus graphing calculator, (3) a #2 pencil, and (4) an 8.5" x 11" page of notes.

**Grading Scale:**

Percentage	Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
Below 60	F

**If you do not take the final exam, you cannot pass the course.**

**Important Dates:**

Last Day to drop without a grade:

Last Day to drop with a W:

Final exam Time and Date:

**Drop/Withdrawal Policy and Dates:**

Please note the Drop Policy and Withdrawal Procedures as they are stated in the Current Registration Guide. A grade of "I" will be given only in accordance with the University Policy. No grade of "W" will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student's control. In particular, a "W" will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an "F" can have ramifications on financial aid.

**General conduct in class:**

The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU.

**Judicial Statement / Academic Misconduct:**

Please review the [information on Academic Integrity and Misconduct](#). Academic integrity is a hallmark of Middle Tennessee State University. We expect students to present original work for all academic assignments turned in for credit and appropriately credit all sources used.

Academic misconduct includes, but is not limited to:

1. Plagiarism: The adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper attribution. This includes self-plagiarism, which occurs when an author submits material or research from a previous academic exercise to satisfy the requirements of another exercise and uses it without proper citation of its reuse.

2. Cheating: Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. This includes unapproved collaboration, which occurs when a student works with others on an academic exercise without the express permission of the professor. It also includes purchasing assignments or paying another person to complete a course for you.
3. Fabrication: Unauthorized falsification or invention of any information or citation in an academic exercise.

Going online and using information without proper citation, copying parts of other students' work, creating information to establish credibility, or using someone else's thoughts or ideas without appropriate acknowledgment is academic misconduct. If you have a question about an assignment, please ask me to clarify. All cases of academic misconduct will be reported to the Director of Student Academic Ethics and may result in failure on the test/assignment or for the course.

## **Grade Appeals**

[University Policy 313, Student Grade Appeals](#), provides an avenue for MTSU students to appeal a final course grade in cases in which the student alleges that unethical or unprofessional actions by the instructor and/or grading inequities improperly impacted the final grade.

## **Free Tutoring:**

Take advantage of our FREE tutoring service and learn how to study, get help with understanding difficult course material, receive better test grades, or simply improve your grade point average. Tutoring is available in *study skills* and *learning strategies* that includes sessions on time management, notetaking, when and where to study, and memory principles. Tutoring is also available in over 200 courses including biology, history, computer information Systems, physics, math, psychology, chemistry, economics, recording industry, and many more. The central location for tutoring is the Tutoring Spot, located in Walker Library, but is also conducted at various other campus sites.

For available tutoring opportunities, visit <http://mtsu.edu/studentsuccess/tutoring.php#on>. For questions, call the Tutoring Spot at 615-904-8014.

## **Hope (Lottery) Scholarship Information**

Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility. If you drop this class, withdraw, or stop attending this class, you may lose eligibility for your lottery scholarship, and you may not be able to regain eligibility.

For additional Lottery rules, please refer to your [Lottery Statement of Understanding form](#) or contact your [MT One Stop Enrollment Counselor](#).

## **Make-Up Policy:**

Make-ups will not be given for anything other than in-class exams, and only with the instructor's prior consent (emergencies accepted). A University approved excuse must be provided in order to be given a make-up exam and, depending on circumstances, the instructor has the right to not give a make-up exam.

## **Mental Health:**

As a college student, you may experience a range of challenges and issues that can interfere with your physical and mental well-being, hinder your academic experience, and negatively impact your daily life.

Some of these experiences may include overwhelming depression/sadness, anxiety, high levels of stress, use of alcohol/drugs, difficulty sleeping, difficulty concentrating, and/or loss of motivation. These challenges and issues can lead to thoughts of self-harm and suicide. If you or any of your classmates are experiencing these issues, it is important to reach out and ask for help. Discuss your situation with a friend, a family member, your instructor, or an academic advisor. Remember: Everyone struggles. It's okay to talk about it. Ask for help. YOU ARE NOT ALONE!

## **Outreach and Support Programs**

The MTSU community is committed to the academic achievement of each student, and we know that struggling to address basic needs can affect a student's ability to perform academically. If you are having trouble finding a safe and stable place to live or enough food to eat, please contact Danielle Rochelle (615-898-2808 or [Danielle.Rochelle@mtsu.edu](mailto:Danielle.Rochelle@mtsu.edu)), come by the MTSU Food Pantry at the MT One Stop, or speak with your instructor to get the assistance and resources you need.

## **Reasonable Accommodations for Students with Disabilities:**

Middle Tennessee State University is committed to campus access in accordance with Title II of the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973. Any student interested in reasonable accommodations can consult the [Disability & Access Center \(DAC\)](#) website and/or contact the DAC for assistance at 615-898-2783 or [dacemail@mtsu.edu](mailto:dacemail@mtsu.edu).

## **Student Resources**

[Frequently Used Student Resources](#)

## **Technical Support**

Students who experience technical problems including, but not limited to, logging into their course, timing out of their course, using the course web site tools, should be encouraged to contact the [MTSU Help Desk](#) online (24/7) or at 1-615-898-5345.

## **Title IX**

Students who believe they have been harassed, discriminated against or been the victim of sexual assault, dating violence, domestic violence or stalking should contact a Title IX/Deputy Coordinator at 615-898- 2185 or 615-898-2750 for assistance or review [MTSU's Title IX website](#) for resources. MTSU faculty are concerned about the well-being and development of our students and are legally obligated to share reports of sexual assault, dating violence, domestic violence and stalking with the University's Title IX coordinator to help ensure student's safety and welfare. Please refer to [MTSU's Title IX website](#) for contact information and details.

## **The True Blue Pledge**

[I am True Blue](#)

As a member of this diverse community, I am a valuable contributor to its progress and success. I am engaged in the life of this community. I am a recipient and a giver. I am a listener and a speaker. I am honest in word and deed. I am committed to reason, not violence. I am a learner now and forever. I am a BLUE RAIDER. True Blue!

Find us on Social Media:

