NORTHEAST TEXAS COMMUNITY COLLEGE

Math1316.088 Trigonometry Competency-Based Online

Course Syllabus: May Minimester 2026

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

Instructor: Dr. Doug Richey
Office: MS 122
Phone: 903-434-8283
Email: drichey@ntcc.edu

Weekday	Office Hours
Monday	Online
Tuesday	Online
Wednesday	Online
Thursday	Online
Friday	Online

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description:

Three credit hours. The study of trigonometric functions and their applications. Topics include trigonometric functions of angles, right and oblique triangles, inverse trigonometric functions, trigonometric identities, equations, graphs, vectors, polar coordinates, and parametric equations.

Prerequisite(s): Math 1314 with a grade of "C" or better or an appropriate placement score

Student Learning Outcomes:

1. Compute values of trigonometric functions using radian and degree measure. (Competency 1 & 2)

2. Analyze and graph trigonometric functions and their transformations. (Competency 3)

3. Prove and apply trigonometric identities. (Competency 4 & 5)

4. Solve trigonometric equations. (Competency 6)

5. Solve right and oblique triangles using trigonometric methods. (Competency 7)

6. Apply trigonometry to real-world problems including modeling and vectors. (Competency 7 & 8)

Program Student Learning Outcomes:

Critical Thinking Skills

CT.1 Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

Communication Skills

CS.1 Students will effectively develop, interpret and express ideas through written communication.

Empirical and Quantitative Skills

EQS.1 Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical forms.

EQS.2 Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

EQS.3 Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

Course Competencies:

Competency	Focus Areas	Textbook Alignment (OpenStax/Lippman)
C1: Angles & Unit Circle	Degree/radian measure, unit circle, trig values	Ch. 5.1 – 5.4
C2: Right Triangle Trigonometry	Trig ratios, applications	Ch. 5.5
C3: Trigonometry Graphs	Graphs, amplitude, period, phase shift	Ch. 6.1 – 6.2
C4: Trigonometric Identities	Fundamental and Pythagorean identities	Ch. 7.1
C5: Advanced Identities	Addition, subtraction, double-angle identities	Ch. 7.2 – 7.4
C6: Trigonometric Equations	Solving equations, inverses	Ch. 6.3 – 6.5
C7: Oblique Triangles & Vectors	Laws of Sine/Cosines, vectors	Ch. 8.1, 8.4
C8: Polar & Parametric Applications	Polar coordinates, parametric equations	Ch. 8.2 – 8.3, 8.5 – 8.6

Evaluation/Grading Policy:

The breakdown of the course requirements is as follows:

%	Requirement
40%	Competency Mastery Checks
10%	Final Project
50%	Comprehensive Final Assessment

Semester grades will be earned as follows

Percentage	Letter Grade
90% and above	A
80 %–89%	B
70 %–79%	C
60%–69 %	D
59.9% and below	F

A series of online Blackboard engagement opportunities. Competency Mastery Checks with a minimum score of 80% (40% of final grade), online Practice, Final Project (10% - Blackboard Dropbox – minimum score of 80% required) and Comprehensive Final Assessment (MOM – minimum score of 80% required) will be worth 50% of your final grade. If you are unable to take your proctored final comprehensive assessment at NTCC's Testing Center then you must use TEAMs or have an approved proctor. If the final assessment is not proctored appropriately, a grade of zero will be given. For TEAMs, students are required to have access to a computer with high-speed internet, a microphone, a webcam, and appropriate system rights to download and install the necessary software. Please note, the college does not provide this equipment.

Students who demonstrate mastery through a pre-assessment may be exempt from completing practice for that competency.

Homework and Competency Mastery Checks are graded when submitted. Formative assessments are graded within 72 hours after the due date. The Final Assessment is graded when submitted.

*Competency Mastery Checks (MyOpenMath): 40%
*Final Project (Blackboard): 10%
*Comprehensive Final Assessment (MyOpenMath): 50% (Must be Proctored.)

The Comprehensive Final Assessment must be proctored. Failure to meet proctoring requirements will result in a score of zero.

*A minimum score of 80% is required to demonstrate mastery of each competency and to earn credit toward the final course grade. Competency Mastery Checks (three tries per competency mastery check), Final Project (one submission) and Comprehensive Final Assessment (two tries for comprehensive final assessment).

Required Instructional Materials:

MyOpenMath (MOM) accessed through Blackboard.
Textbook: Precalculus: An Investigation of Functions (OpenStax / Lippman & Rasmussen), trigonometry chapters (free digital).
Calculator: Scientific or graphing calculator required.

Publisher: MyOpenMath (MOM) **ISBN Number:** NA

Optional Instructional Materials:

Print copy of the textbook is highly recommended. Research indicates that students learn more and retain it longer from hard copy text.

Print Textbook Precalulus: An Investigation of Functions
Paperback: ISBN-13: 978-1-955576-00-0

Minimum Technology Requirements:

A scientific calculator is required. TI-83/84 is recommended.

The TI-84 Online Calculators is available for individual purchase by students through the TI Store. A single license for the TI-84 Online Calculator is $20 per year and the single license for the TI Nspire CX II Online Calculator is $27.50 per year. Both online calculator solutions come with full math functionality. For a full list of specifications and a comparison chart of the various functionalities for each of the online calculator solutions, please click on the appropriate link below.

- TI-84 Plus CE ONLINE Calculator - $20.00 per year for an individual license
- TI-Nspire CX II ONLINE Calculator - $27.50 per year for an individual license.

The link to the TI Store where students can purchase their individual licenses is found below:

TI STORE

Below are some technical requirements for using Blackboard that will help your experience in this course.

You will see the NTCC Tech Support email address and phone number below. Please contact them if you run into any technical problems during the semester. Please let your instructor know you are having difficulties as well.

If you need further NTCC technical support services, please contact Austin Baker or Mary Lou Pemberton at:
abaker@ntcc.edu or 903-434-8279
mpemberton@ntcc.edu or 903-434-8270

Blackboard will work on both a Mac and a PC. (Chrome Books are known to have issues with Blackboard.) It is best to access Blackboard through Fire-Fox or Chrome as your web browser. If you have trouble with any of the activities working properly, you might change your web browser as your first solution. The Default Browser in Windows 10 is Edge. This browser does not do well with Blackboard! If you go to Windows Accessories you will find Internet Explorer still on your computer but is not your default browser. If you have any difficulties navigating with Edge, close it and go to Internet Explorer.

To use TEAMs you must have access to a computer with high-speed internet, a microphone, a Webcam, and appropriate systems rights to download any necessary software. Please note, the college does not provide this equipment.

You can download Blackboard Student for your smart phone from the Play store or the App store.

More information is available for Technology Requirements and Support under the Student Resources – Technical Support Tab in Blackboard

Required Computer Literacy Skills:

As an online student you will have a much different "classroom" experience than a traditional student. In order to ensure that you are fully prepared for your online part of the course, following is a list of expectations and requirements: Students in a hybrid and/or on-line program should be comfortable with and possess the following skill sets:

1. Self-discipline
2. Problem solving skills
3. Critical thinking skills
4. Enjoy communication in the written word

As part of your online experience, you can expect to utilize a variety of technology mediums as part of your curriculum:

1. Communicate via email including sending attachments
2. Navigate the World Wide Web using a Web browser such as Internet Explorer
3. Use office applications such as Microsoft Office (or similar) to create documents
4. Be willing to learn how to communicate using a discussion board and upload assignments to a classroom Web site
5. Be comfortable uploading and downloading saved files
6. Have easy access to the Internet
7. Navigate Blackboard, including using the email component within Blackboard. Instructions and tutorials for this are provided in your course.

For more information or technical assistance on using the Learning Management System, please refer to the Home Page, Orientation Module, in the important technical requirements, information and support folder in Blackboard.

Course Structure and Overview:

This is an online competency-based course where students are required to access graded activities on the Blackboard Learning Management System. Students are required to complete online mastery checks, final project, and comprehensive final assessment. It is particularly important for students to keep up with course materials and assignments since this is a self-paced course. Students are expected to watch instructional videos, read course textbook, and complete online assignments located in the Learning Management System, Blackboard by the course end date.

Communications:

Emails, TEAMs and phone messages will be responded to within 24 hours. If you do not receive a response within 24 hours, then the email or phone message was not received. Posts in the Discussion Forum “Questions, Comments, and/or Concerns?” will be monitored by the instructor. Responses by the instructor will be within 72 hours of post. Students are expected to abide by Netiquette rules when communicating online. See this link for details: Netiquette Rules.

The college’s official means of communication is via your campus email address. I will use your campus email

address and Blackboard to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

Institutional/Course Policy:

No late work will be accepted without prior approval by the instructor. Students are always expected to be respectful toward classmates and professor! Review Student Conduct in the Student Handbook. It is the student's responsibility to check Blackboard for important information/announcements regarding the course. Students should be working on course material via Blackboard every week. Do not wait until the last minute to complete and submit assignments in case of technology issues.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Statement Regarding the Use of Artificial Intelligence (AI) Technology:

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:
APA (7th edition)

OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. https://chat.openai.com/

MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, https://chat.openai.com/.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies

stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodation for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Tentative Course Schedule (Competency-Based Progression):

This course is designed as a competency-based, self-paced learning experience rather than a traditional calendar-based schedule. Students will progress through course content by demonstrating mastery of each competency. The official course term runs from May 18 through June 5 (May Minimester); however, students are permitted to continue working and completing competencies through August 15, 2026, as needed.

Students are required to complete competencies in the designated order. Each competency builds upon the skills and knowledge developed in the previous competency; therefore, mastery of one competency is required before progressing to the next.

To successfully complete the course, students must demonstrate mastery (minimum score of 80%) on each competency, as outlined in the syllabus. You must demonstrate mastery on the comprehensive final assessment and final project (minimum score of 80%).

Although this is a self-paced course, students are strongly encouraged to maintain consistent engagement and steady progress.

Required Competency Sequence:

C1 → C2: Foundations (Angles, Unit Circle, Right Triangle Trigonometry)
C3 → C4: Graphs and Fundamental Identities
C5 → C6: Advanced Identities and Trigonometric Equations
C7 → C8: Applications (Oblique Triangles, Vectors, Polar & Parametric)

Students should plan to:

Engage with course materials regularly throughout the term.
Complete competencies sequentially and at a steady pace.

Monitor progress in Blackboard and MyOpenMath.
Communicate with the instructor as needed for support.

Important: All coursework, including the Final Project and Comprehensive Final Assessment, must be completed by August 15, 2026. No work will be accepted after this date without prior approval.

C1 – Angles and Unit Circle (SLO 1)
C2 – Right Triangle Trigonometry (SLO 1)
C3 – Trigonometric Graphs (SLO 2)
C4 – Fundamental Identities (SLO 3)
C5 – Advanced Identities (SLO 3)
C6 – Trigonometric Equations (SLO 4
C7 – Oblique Triangles and Vectors (SLO 5 & 6)
C8 – Polar/Parametric Applications & Comprehensive Final Exam (SLO 6)