



THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

## SYLLABUS: MATH 1149 TRIGONOMETRY (AU 2025)

### Course overview

#### Course description

Trigonometric functions and applications of trigonometry to real world problems, vectors, polar coordinates and complex numbers. Prereq: A grade of C- or above in 1148, or permission of the department. Not open to students with credit for 1144, or for any Math course numbered 1150 (150) or above.

##### GEN:

###### Goals:

Successful students will be able to apply quantitative or logical reasoning and/or mathematical/statistical methods to understand and solve problems and will be able to communicate their results.

###### Expected Learning Outcomes:

Successful students are able to:

1. Use logical, mathematical, and/or statistical concepts and methods to represent real-world situations.
2. Use diverse logical, mathematical, and/or statistical approaches, technologies, and tools to communicate about data symbolically, visually, numerically, and verbally.
3. Draw appropriate inferences from data based on quantitative analysis and/or logical reasoning.
4. Make and evaluate important assumptions in estimation, modeling, and logical augmentation and/or data analysis.
5. Evaluate social and ethical implications in mathematical and quantitative reasoning.

##### GEL:

###### Goals:

Students develop skills in quantitative literacy and logical reasoning, including the ability to identify valid arguments, and use mathematical models.

###### Expected Learning Outcomes:

Mathematical or Logical Analysis

1. Students comprehend mathematical concepts and methods adequate to construct valid arguments.
2. Students comprehend mathematical concepts and methods adequate to understand inductive and deductive reasoning
3. Students comprehend mathematical concepts and methods adequate to increase their general problem solving skills.

## **Course learning outcomes**

By the end of this course, students should successfully be able to:

- Graph trigonometric functions and identify the main features of their graphs.
- Construct models using trigonometric functions.
- Apply trigonometry in a wide range of problems.

## Course material

### Required:

1. E-BOOK with ACCESS to ALEKS (for online homework): Click “**ALEKS-MATH**” in Carmen, to gain access to the e-book and Aleks. You **don't need to make a purchase** if CarmenBooks' fee is (most likely) included in your tuition.  
The textbook for this course is College Algebra & Trigonometry second edition, by Miller and Gerken, ISBN 9781264248667.
2. Calculators (for exams and quizzes): You **need** a calculator with basic functions (exponential and logarithmic functions, trigonometric and inverse trigonometric functions). You **may** use a graphing calculator such as TI-83/84 or a similar one, however calculators with CAS (Computer Algebra System) such as TI-89/92 **are not** permitted.

**Note:** Online calculators such as Desmos (desmos.com) are allowed to use for **homework assignments** only.

## Course Delivery

**Course Information:** The course information and regular announcements are posted in Carmen.

**Lectures and recitation classes:** The times and locations are listed in your OSU classes' schedule.

**Help with the course:**

- **OFFICE HOURS:** Both your lecturer and your recitation instructor have office hours.
- **The Math Stat Learning Center (MSLC)** offers free drop-in and appointment tutoring. Everyone can benefit from tutoring! The MSLC's drop-in tutor rooms are a great place to work on math homework or study for exams. Students often use the space like a library with the added benefit of a tutor or peers nearby. Tutoring appointments are weekly one-on-one, 30-minute appointments. You'll work with the same peer tutor each week to provide stability and mentoring-type support. MSLC tutors focus not only on helping you solve the problem at hand, but also work with you to build your understanding and knowledge to prepare you for exams.

<https://mslc.osu.edu/tutoring>

**Help with Aleks technical issues:**

For Immediate Assistance Reach, contact Customer Support Group:

<https://mhedu.force.com/aleks/s/> Phone: (800) 258-2374

**Help with technology:**

- **For help** with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.
- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** [8help@osu.edu](mailto:8help@osu.edu)
- **TDD:** 614-688-8743

## Assessment and course grade

### Homework:

#### Aleks:

The homework assignments are in Aleks. **To access your homework, click “ALEKS-Math” in Carmen** (this will also allow you to see your **homework scores in Carmen**).

#### Due dates:

Homeworks' due dates are on the “Course Schedule” section of this syllabus. They are also posted in Carmen and in Aleks.

#### Late homeworks:

Late homeworks will incur 10% late penalty, on problems submitted past their due date and before the hard deadline (as indicated in Aleks).

#### Scores:

The **lowest two scores** of your homeworks will be dropped.

### Quizzes:

#### Quizzes schedule:

The quizzes are take-home. They will be distributed and collected in recitation class. The collection dates are listed in the “Course Schedule” section of this syllabus (also posted in Carmen).

#### Warning:

Please note that **you are not permitted** to seek help with your quizzes.

#### Scores:

The **lowest quiz score** will be dropped.

### Exams:

#### Exams Schedule:

The **dates** and **times** are indicated on the “Course Schedule” section of this syllabus. Attendance at the exams, at the scheduled time and place is required. You must have your **OSU ID** at each exam.

#### Exams Rooms:

Math 1149 has common **evening** exams that are **not** held in your regular classroom. Room assignments will be **posted** in Carmen “announcements” the week before each exam.

#### Exams make-ups:

You must get **permission** from your lecturer to take a make-up exam. **Makeup exams will be available for students having documented work, class conflict, or illness. STUDENTS SHOULD NOT MAKE TRAVEL ARRANGEMENTS THAT CONFLICT WITH THE FINAL EXAM. SUCH A CONFLICT IS NOT A VALID EXCUSE FOR MISSING THE REGULARLY SCHEDULED FINAL EXAM.**

### Extra credit work:

You have the opportunity to earn extra credit by completing the assignments in Carmen “Quizzes” for sections 5.7 and 6.1.

### WARNING:

**Exams and quizzes should be completed individually with no external help.** See the “**Academic integrity policy**” section in this syllabus.

**Grade Composition**

<i>Assignment category</i>	<i>Percentage</i>
Homework	20%
Quizzes	15%
Exams	65%
Extra credit work	1%
Total	101%

**Grading scale minimum cutoffs**

<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>	<b>C+</b>	<b>C</b>	<b>C-</b>	<b>D+</b>	<b>D</b>
90%	87%	83%	80%	77%	73%	70%	67%	63%	60%

**List of recommended practice Problems**

<b><u>Section</u></b>	<b><u>Practice Problems (these are not due)</u></b>
5.1	35 – 127 odd
5.2	13 – 99 odd
5.3	9 – 95 odd
5.4	11 – 93 odd
5.5	9 – 67 odd, 77 – 93 odd
5.6	9 – 67 odd
5.7	7 – 87 odd, 101 – 103 odd
6.1	11 – 51 odd, 57 – 97 odd, 103 – 105
6.2	7 – 69 odd, 87 – 89 odd
6.3	7 – 85 odd
6.5	5 – 47 odd, 53 – 61 odd, 69 – 73 odd, 81 – 87 odd
7.2	7 – 69 odd
7.3	5 – 41 odd
8.3	7 – 51 odd
8.4	11 – 103 odd
8.5	7 – 89 odd
11.1	11 – 21 odd, 63 – 67 odd, 73 – 77 odd
11.2	9 – 21 odd, 51, 61
11.3	15 – 33 odd, 69

## Course schedule (subject to adjustments)

Week & Dates		Topics	Assignments due dates	
1	8/27 (W)	5.1 Angles and Their Measure ( <b>class meets in your Lecture room</b> )		<b>The bonus work's due dates are in Carmen "Quizzes".</b>
	8/28 (R)	Recitation ( <b>in your recitation room</b> )		
2	9/1 (M)	<b>Labor day. No classes</b>		
	9/3 (W)	5.1/5.2 Right Triangle Trigonometry		
	9/4 (R)			
3	9/8 (M)	5.2 continued	9/9 (T)	<b>Homework 1</b> (click "Aleks-Math" in Carmen)
	9/9 (T)			
	9/10 (W)	5.3 Trig. Functions of Angles		
4	9/11 (R)	<b>Quiz 1</b> (distributed in recitation)		
	9/15 (M)	5.3/5.4 Trig. Fun. And The Unit Circle		
	9/17 (W)	5.4 continued	9/18 (R)	<b>Quiz 1</b> (collected in recitation) through 5.2
5	9/18 (R)		9/22 (M)	<b>Homework 2</b> (click "Aleks-Math" in Carmen)
	9/22 (M)	5.5 Graphs of Sine and Cosine		
	9/24 (W)	5.5/5.6 Graphs of Other Trig. Func.		
6	9/25 (R)			
	9/29 (M)	<b>Review (through 5.5)</b>	9/30 (T)	<b>Exam 1</b> (6:30 pm - 7:25 pm) through 5.5
	9/30 (T)			
7	10/1 (W)	5.6 continued		
	10/2 (R)			
8	10/6 (M)	5.7 Inverse Trig. Functions	10/6 (M)	<b>Homework 3</b> (click "Aleks-Math" in Carmen)
	10/8 (W)	5.7 Inverse Trig. Functions		
	10/9 (R)			
9	10/13 (M)	6.1 Fundamental Trig. Identities		
	10/15 (W)	6.2 Sum & Difference Formulas		
	10/16 (R)	<b>Autumn break. No classes</b>		
10	10/20 (M)	6.2/6.3 Double & Half Angle Formulas	10/20 (M)	<b>Homework 4</b> (click "Aleks-Math" in Carmen)
	10/22 (W)	6.3 Double & Half Angle Formulas		
	10/23 (R)	<b>Quiz 2</b> (distributed in recitation)		
11	10/27 (M)	6.5 Trigonometric Equations		
	10/29 (W)	6.5 Trigonometric Equations		
	10/30 (R)		10/30 (R)	<b>Quiz 2</b> (collected in recitation) through 6.1
12	11/3 (M)	7.2 The laws of sines	11/3 (M)	<b>Homework 5</b> (click "Aleks-Math" in Carmen)
	11/5 (W)	7.2/7.3 Cont./Law of Cosines		
	11/6 (R)			
13	11/10 (M)	8.3 Complex numbers Polar form		
	11/12 (W)	8.4 Vectors		
	11/13 (R)			
14	11/17 (M)	<b>Review (through 7.2)</b>	11/17 (M) 11/18 (T)	<b>Homework 6</b> (click "Aleks-Math" in Carmen) <b>Exam 2</b> (6:30 pm - 7:25 pm) through 7.2
	11/18 (T)			
	11/19 (W)	8.4 cont./8.5 Dot Product		
15	11/20 (R)	<b>Quiz 3</b> (distributed in recitation)		
	11/24 (M)	8.5 continued		
	11/26 (W)	<b>No classes</b>		
16	11/27 (R)	<b>Thanksgiving. No classes</b>		
	12/1 (M)	11.1 The Ellipse	12/1 (M)	<b>Homework 7</b> (click "Aleks-Math" in Carmen)
	12/3 (W)	11.2 The Hyperbola		
17	12/4 (R)		12/4 (R)	<b>Quiz 3</b> (collected in recitation) through 8.4
	12/8 (M)	11.3 The Parabola		
	12/10 (W)	<b>Review</b>	12/10 (W)	<b>Homework 8</b> (click "Aleks-Math" in Carmen)
18	12/11 (R)	<b>Reading day. No classes</b>		
	12/12 (F)	<b>Final Exam</b>	12/12 (F)	<b>Final Exam</b> (6:00pm – 7:45pm)

# Grading and faculty response

## Faculty feedback and response time

The following list is provided to give you an idea of your instructors' availability throughout the course. Remember that you can call **614-688-HELP** at any time if you have a technical problem.

### Grading and feedback

For graded assignments, you can generally expect feedback within **one week**.

### E-mail

Instructors will reply to e-mails within **24 hours on school days**.

### Discussion board

Instructors will check and reply to messages in the discussion boards every **24 hours on school days**.

# Attendance, participation, and discussions

## Student participation requirements

Your attendance is based on your online activity and participation, in addition to recitation class attendance. Be sure you are logging in to the course in Carmen at least **three times** each week, including weeks with holidays. If you have a situation that might cause you to miss an entire week of class, discuss it with your instructor as *soon as possible*.



## Discussion and communication guidelines

The following are the expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation.
- **Tone and civility:** Please maintain a supportive learning community where everyone feels safe. No student should be marginalized in any form for questions or contributions made in class, during office hours, or in an online forum. Students should cooperate to help each other's understanding of the mathematical concepts covered in class regardless of their background.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

## Other course policies

### Student academic services

Student academic services offered on the OSU main campus  
<http://advising.osu.edu/welcome.shtml>.

### Student support services

Student support services offered on the OSU main campus <http://ssc.osu.edu>.

## Academic integrity policy

### Policies for this course

- **Exams and quizzes:** You must complete the exams and quizzes yourself, without any external help or communication.
- **Homework and extra credit assignments:** You may discuss problems with other students in this course, but the final write-up should be entirely your own.

### Ohio State's academic integrity policy

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

## Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

## Statement on title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at [titleix@osu.edu](mailto:titleix@osu.edu)

## Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12th Avenue.

## Accessibility of course technology

This course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video

## **Your mental health!**

As a student you may experience a range of issues that can cause barriers to learning such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](https://ccs.osu.edu) or calling 614- 292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org)