THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SYLLABUS: MATH 1150
PRECALCULUS (AU 2025)

Course overview

Course description

Functions and applications: polynomial, rational, exponential, logarithmic, and trigonometric functions. Prereq: Math Placement Level M. Not open to students with credit for 1144, 1148, or for 1149 or above, or for any quarter Math course numbered 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:

- Identify varying and co-varying quantities in a problem setting.
- Become proficient in analyzing functions with various representations.
- Graph functions and identify the main features of their graphs.
- Construct models using “elementary functions” such as polynomial, exponential, logarithmic, and trigonometric functions.
- Apply trigonometry in a wide range of problems
- Have acquired prerequisites for Calculus.

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
- **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 three scores** of your homeworks will be dropped**.**

Quizzes:

Quizzes schedule:

The quizzes are held in recitation class, during recitation time. The dates are listed in the "Course Schedule" section of this syllabus.

Quizzes makeups:

Contact your recitation instructor as soon as you have an issue with taking a quiz during recitation time. A **valid excuse** is required.

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 1150 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 "pre-lectures" assignments in Carmen "Quizzes".

Exams and quizzes should be completed individually with no external help. Read carefully the "**Academic integrity policy**" section in this syllabus.

Grade Composition

Assignment category	*Percentage*
Homework	20%
Quizzes	15%
Exams	65%
Extra credit work	2%
Total	102%

Grading scale minimum cutoffs

A	**A-**	**B+**	**B**	**B-**	**C+**	**C**	**C-**	**D+**	**D**
90%	87%	83%	80%	77%	73%	70%	67%	63%	60%

List of recommended practice Problems

Section	Practice Problems (these are not due)	Section	Practice Problems (these are not due)
2.3	11 - 121 odd	5.2	13 – 99 odd
2.4	79, 85 – 89 odd	5.3	9 – 95 odd
2.6	9 – 101 odd	5.4	11 – 93 odd
2.7	7 – 71 odd, 89 – 111 odd, 135 – 137 odd	5.5	9 – 67 odd, 77 – 93 odd
2.8	5 – 109 odd	5.6	9 – 67 odd
3.1	7 – 55 odd	5.7	7 – 87 odd, 101 – 103 odd
3.2	1 – 87 odd	6.1	11 – 51 odd, 57 – 97 odd, 103 – 105
3.3	1 – 21, 39 – 41, 55 – 61, 71 – 81, 87 – 91 all odd	6.2	7 – 69 odd, 87 – 89 odd
3.4	29 – 47 odd, 85 – 99 odd	6.3	7 – 85 odd
3.5	1 – 43 odd, 53 – 71 odd	6.5	5 – 47 odd, 53 – 61 odd, 69 – 73 odd, 81 – 87 odd
3.6	7 – 47 odd	7.2	7 – 69 odd
3.7	1 – 83 odd	7.3	5 – 41 odd
4.1	1 – 73 odd	8.4	11 – 103 odd
4.2	9 – 59 odd, 71 – 77 odd	8.5	7 - 89 odd
4.3	9 – 49 odd, 55 – 121 odd	9.1	1 – 53 odd, 79 – 83 odd
4.4	7 – 97 odd	9.2	3 – 47 odd
4.5	5 – 151 odd	11.1	11 – 21 odd, 63 – 67 odd, 73 –77 odd
4.6	5 – 29 odd	11.2	9 – 21 odd, 51, 61
5.1	35 – 127 odd	11.3	15 – 33 odd, 69

Course schedule (subject to adjustments)

Week & Dates		Topics	Assignments due dates	
1	8/26 (T) 8/27 (W) 8/28 (R) 8/29 (F)	Recitation (**in your recitation classroom**) 2.3 Functions (**in your lecture hall**) 2.4/2.6 Linear Functions/ Transformations of Graphs		**The pre-lectures bonus work due dates are in Carmen "Quizzes".**
2	**9/1 (M)** 9/2 (T) **9/3 (W)** 9/4 (R) 9/5 (F)	**Labor day. No classes** 2.7 Analyzing Graphs of Functions 2.8 Algebra of Functions	**9/3 (W)**	***HW 1*** *(click "ALEKS-Math" in Carmen)*
3	9/8 (M) 9/9 (T) **9/10 (W)** **9/11 (R)** 9/12 (F)	3.1/3.2 Quadratic/Polynomial Functions 3.2/3.3 Poly. Fun./Division of Polynomials 3.3/3.4 Division of Poly/ Zeros of Polynomials	**9/10 (W)** **9/11 (R)**	***HW 2*** *(click "ALEKS-Math" in Carmen)* ***Quiz 1*** *(in recitation)* through 2.8
4	9/15 (M) 9/16 (T) **9/17 (W)** 9/18 (R) 9/19 (F)	3.5/3.6 Rational Functions/Graphs of Rat. Fun. 3.7 Polynomial and Rational Inequalities 4.1 Inverse Functions	**9/17 (W)**	***HW 3*** *(click "ALEKS-Math" in Carmen)*
5	9/22 (M) **9/23 (T)** 9/24 (W) 9/25 (R) **9/26 (F)**	**Review** 4.2 Exponential Functions 4.3 Logarithmic Functions	**9/23 (T)** **9/26 (F)**	***Exam 1*** *(6:30 pm – 7:25 pm)* through 3.7 ***HW 4*** *(click "ALEKS-Math" in Carmen)*
6	9/29 (M) 9/30 (T) **10/1 (W)** 10/2 (R) 10/3 (F)	4.4 Properties of Logarithms 4.5 Exponential and Logarithmic Equations 4.6 Modeling with Exp. and Log. Functions	**10/1 (W)**	***HW 5*** *(click "ALEKS-Math" in Carmen)*
7	10/6 (M) 10/7 (T) **10/8 (W)** **10/9 (R)** 10/10 (F)	5.1 Angles and Their Measure 5.2 Right Triangle Trigonometry 5.3 Trigonometric Functions of Any Angle	**10/8 (W)** **10/9 (R)**	***HW 6*** *(click "ALEKS-Math" in Carmen)* ***Quiz 2*** *(in recitation)* through 4.6
8	10/13 (M) 10/14 (T) **10/15 (W)** **10/16 (R)** **10/17 (F)**	5.4 Trig. Functions Defined on The Unit Circle 5.5 Graphs of Sine and Cosine Functions **Autumn break. No classes** **Autumn break. No classes**	**10/15 (W)**	***HW 7*** *(click "ALEKS-Math" in Carmen)*
9	10/20 (M) 10/21 (T) **10/22 (W)** 10/23 (R) 10/24 (F)	5.5/5.6 Graphs of Trig. Functions 5.6 Graphs of Other Trig. Functions 5.7 Inverse Trig. Functions	**10/22 (W)**	***HW 8*** *(click "ALEKS-Math" in Carmen)*

Week & Dates		Topics	Assignments due dates	
	10/27 (M)	**Review**		
	10/28 (T)		**10/28 (T)**	***Exam 2*** *(6:30 pm – 7:25 pm)* *through 5.6*
10	10/29 (W)	5.7 Inverse Trig. Functions (continued)		
	10/30 (R)			
	10/31 (F)	6.1 Fundamental Trigonometric Identities	***10/31 (F)***	***HW 9*** *(click "ALEKS-Math" in Carmen)*
	11/3 (M)	6.2 Sum and Difference Formulas		
	11/4 (T)			
11	**11/5 (W)**	6.3 Double Angle and Half Angle Formulas	**11/5 (W)**	***HW 10*** *(click "ALEKS-Math" in Carmen)*
	11/6 (R)			
	11/7 (F)	6.5 Trigonometric Equations		
	11/10 (M)	6.5 Trigonometric Equations		
	11/11 (T)	**Veterans Day. No classes**		
12	**11/12 (W)**	7.2 The laws of Sines	**11/12 (W)**	***HW 11*** *(click "ALEKS-Math" in Carmen)*
	11/13 (R)			
	11/14 (F)	7.2/7.3 Laws of Sines/Law of Cosines		
	11/17 (M)	8.4 Vectors		
	11/18 (T)			
13	**11/19 (W)**	8.4/8.5 Vectors/Dot Product	**11/19 (W)**	***HW 12*** *(click "ALEKS-Math" in Carmen)*
	11/20 (R)		**11/20 (R)**	***Quiz 3*** *(in recitation)* *through 6.5*
	11/21 (F)	8.5 Dot Product		
	11/24 (M)	9.1/9.2 Syst. Of Lin. Equ. In two/Three variables		
	11/25 (T)			
14	**11/26 (W)**	**No classes**	**11/26 (W)**	***HW 13*** *(click "ALEKS-Math" in Carmen)*
	11/27 (R)	**Thanksgiving. No classes**		
	11/28 (F)	**No classes**		
	12/1 (M)	11.1 The Ellipse		
	12/2 (T)			
15	12/3 (W)	11.2 The Hyperbola		
	12/4 (R)			
	12/5 (F)	11.3 The Parabola		
	12/8 (M)	**Review**		
	12/9 (T)			
16	**12/10 (W)**	**Review**	**12/10 (W)**	***HW 14*** *(click "ALEKS-Math" in Carmen)*
	12/11 (R)	**Reading day. No classes**		
	12/12 (F)		**12/12 (F)**	***Final Exam*** *(6:00 pm – 7:45 pm)*

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**: You must complete the exams yourself, without any external help or communication.
- **Individual homework assignments**: You may discuss problems with other students in this course, but the final write-up should be entirely your own. You are not allowed to copy from resources that explicitly compile solutions to textbook problems (many of these also tend to be wrong!).
- **Reusing past work**: In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you have explored in previous courses, please discuss the situation with your instructor.
- **Collaboration and informal peer-review**: The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of written work is encouraged, remember that comparing answers on a test or individual assignment is not permitted.

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

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; 614-292-3307; 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 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