

Arcadia University
Fall 2021
Math 110, Precalculus

Instructor: Ethan Lewis
Email: lewise@arcadia.edu (Do not use canvas email)
Office Hours: Immediately after class or By Appointment via Zoom
Text: Algebra and Trigonometry, 4th Edition, Stewart et al, Cengage, 2016,
ISBN-13: 9781305071742.
Time: TTh 2:10-3:50 pm, Boyer 109
Prerequisite: Math100 or placement exam

Course Description

This course is designed to give students proficiency with mathematics necessary for the study of Calculus. We review algebra (lines, quadratics, higher order polynomials, rational functions, etc.) and study exponential, logarithmic, and trigonometric functions.

Learning Outcomes

At completion of this course students should have the following skills:

- Recognize quadratics, cubics, higher order polynomials, rational functions, exponential, logarithmic, and trigonometric functions from their graphs or equations.
- Graph the functions listed just above from their equations.
- Determine the asymptotes of rational functions from their graphs or equations.
- Determine the (lowest possible) degree of a polynomial from its graph.
- Determine the solution set of a quadratic inequality from its equation or graph.
- Convert between exponential and logarithmic notation.
- Solve an exponential and logarithmic equation.
- Convert between degree and radian measure.
- Know the trigonometric values of common angles.
- Graph trigonometric functions.
- Determine the amplitude, phase shift and period of a sine (cosine) function from its equation or graph.

Technical Requirements for remote students

If you are taking the class remotely you will attend regularly scheduled classes via Zoom. To participate in these class meetings, you will need a computer or tablet with a camera, a microphone, and a stable internet connection.

Calculator: A TI-83/84 graphing calculator (or similar) is highly recommended. If you don't have one, you may rent from sites such as Rentacalc.com and graphtr.com. For homework you can use a TI-83/84 emulator, but you may only use a physical calculator during assessments. For instructions on how to install the emulator, see the reference module at the bottom of the Canvas modules page.

POLICIES:

1. **Be a good classroom citizen.** Bring your notebook, calculator, and textbook to each class. Turn off all cell phones, etc.
2. **Ask questions** in class, before or after class, during review sessions, or at the Learning Resource Network (LRN) when you don't understand a concept, technique, or answer. Make an appointment by e-mail to ask me questions via Zoom.
3. **Homework.** Do the assigned exercises after each class. The assigned problems can be found in the Overview tab of the Unit Module and the Assigned Homework module. Check your answers against the key in the text. Ask questions to address difficulties. Reserve 7-9 hours per week outside of class to work problems and study the material.
4. **Be Responsible.** Stay informed. Class notices are posted as announcements on Canvas and sent to your email account. If you miss a class, check Canvas for the assignment and watch the Zoom recording. The Zoom recording is accessed by clicking the Zoom tab then the Cloud Recordings tab.
5. **Participate.** Preparedness and active participation is expected of all students and affects your grade. Being repeatedly unprepared or absent may reduce your grade. A strong attendance record will affect course grades in borderline situations.
6. **Exams.** There are no make-up exams. If you have a conflict on a test day and inform me as soon as you know of the conflict, it may be possible to make other arrangements. If you miss an exam (except the Final which must be taken), your lowest score will count twice, and your highest possible course grade will be "B". Additional missed assessments receive zeros.

Procedure for Remote Students:

1. Your camera must be on with both hands visible at all times during an assessment.
 2. You must submit a single (multi-page with upright pages) pdf file of your work with your Formula Card included in your submission.
 3. Your camera must remain on until you are done submitting your work.
7. **Academic Honesty.** All work must be your own and you must behave appropriately during assessments. Violations cause a reduction in score, possibly to zero.

Getting Help: Help is always available. Here are some ways to get it:

1. My Office hours. Write me at lewise@arcadia.edu to make an appointment for Zoom.
2. Free peer tutoring from Arcadia's LRN.

You can go over HW problems, review notes, review for a test. Students have enjoyed this resource. You can make appointments through <https://arcadia.instructure.com/enroll/476LYR>. Over half the tutors can tutor Math 110, including all tutors for Math 201.

Grading:	%
Exams (3 – Includes Final)	69
Quizzes (4/5)	31

Final Course Grade is determined from your numerical grade. Below are grade ranges (pluses and minuses are given at the upper and lower 3 points of each range):

Final Average	100 - 90	80 - 89	70 - 79	60 - 69	Below 60
Final Grade	A	B	C	D	F

Schedule: (Subject to change)

<u>Chapter</u>	<u>~Duration</u>	<u>Sections</u>	<u>Topics</u>
P	1 week	P.3-P.8	Prerequisite Material
1	1.5 weeks	1.1-1.4, 1.7	Equations and Graphs
2	1.5 weeks	2.1-2.8	Functions
3	2 weeks	3.1-3.3, 3.6-3.7	Polynomial and Rational Functions
4	3 weeks	4.1-4.7	Exponential and Logarithmic Functions
5 & 6	4 weeks	5.1-5.4, 6.2-6.4	Trigonometry

<u>Exam</u>	<u>Day</u> (Subject to change)
Exam 1	Tuesday, 10/12
Exam 2	Tuesday, 11/23
Final	Tuesday, 12/21 at 1 pm

Math 110 F21 Homework (see Canvas modules for due dates)

Each assignment is to be completed by the next class after the material has been covered. Ranges are odd numbers only, unless otherwise noted.

P.3 no calculator #11-17, 27, 35, 37, 41 (w/calc)

P.4 no calculator #19-23, 39, 41, 47-51, 59, 61, 85

P.5 #19, 21, 29, 31, 37, 39, 45, 51, 55-61

P.6 #7-17, 23-27, 31-33, 63-67, 89, 91

P.7 #7-11, 12, 15-19, 25, 27, 33, 39, 41

P.8 #7-11, 19-23, 61-65

1.1 #7, 25, 27, 35, 37

1.2 #9, 11, 41, 43, 47, 49, 57, 59, 67-73

1.3 #9, 11, 17-25, 29-39

1.4 #5, 7, 15, 29-35, 41, 57-61

1.7 #7-13, 19-27, 33, 37, 39, 79-83

2.1 #21, 31, 33, 39, 41, 51-65, 79, 81, 85

2.2 #35-39, 49-55

2.3 #31-35, 37, 43-46 all, 55, 57

2.4 #7-15, 29, 31, 35

2.5 #19-23, 31-35, 39, 41

2.6 #4, 19-39, 45, 49,, 53-71

2.7 #9-13, 17, 19, 27-43, 47-51

2.8 #7-19, 20, 25-41 odd, 49, 85, 87

3.1 #5, 7, (without part a: 9, 11, 25, 27), 51, 53

3.2 #1, 5-27, 31-35, 51-57, 85, 87

3.3 #3, 5, 9-17

3.6 #21-37, 43, 45, 49-53

3.7 #3-11

4.1 #2, 3-7, 13-33, 41, 43, 53, 55

4.2 #5-13, 23, 25

4.3 #4, 9-31, 35- 41, 45, 49, 53, 55, 73, 75, 97, 99

4.4 #9-35, 49-53, 59, 61

4.5 #3-7, 11-23, 49-63, 89, 91

4.6 #1-7, 13-19

4.7 #1, 3, 8, 11-13

5.1 Radian Measure #5-9, 17-21, 29, 31, 35, 37, 41, 43, 47-57, 75, 77

5.2 The Trig Ratios #3-19, 23-27, 37-41, 53-57

5.3 The Trig Func'ns #5-9, 13-17, 25-29, 37, 39, 47, 49, 65

5.4 Inverse Trig Func'ns #5-13, 17-33, 43

6.2 Basic Identities #53-57

6.3 Trig Graphs #7-11, 19-23, 33-39, 47-53, 83, 85

6.4 More Graphs #3-7, 19-23, 35-37, 61

The Code of Academic Responsibility may be found here:

<https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6004-code-academic-responsibility>

Violations of this code are handled as described here:

<https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6005-violations-code-academic>

Academic Support:

Tutoring takes place in the Learning Resource Network Lab in Knight Hall, Room 142. Please stop by the LRN to schedule an appointment. Appointments are recommended, but drop-in may be available.

Disability statement: Arcadia University provides reasonable accommodations for students with documented disabilities. If you require accommodations or other academic supports due to a physical, psychological, psychiatric or learning disability, you should contact Disability Support Services at (215) 572-4033.

Title IX Statement:

Arcadia University is committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. The only exceptions a faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at

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