

Precalculus

MATH 2312 section 005

Fall 2023

Instructor: Andrew Davis

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Office Hours: MTWR 5:00 pm – 5:30 pm and by appointment (zoom is fine)

Scheduled Lectures: TR, 5:30 pm – 6:50 pm, RBN 4027

**Course Overview:** A survey of college algebra, trigonometry, and analytical geometry to prepare students for calculus. Topics include algebraic functions and their graphs, exponential and logarithmic functions, trigonometric functions, and identities, two- and three-dimensional analytical geometry. Credit not given for both MATH 2312 and MATH 1316. Prerequisites: Appropriate score on ACT, SAT, or TSI.

### **Student Learning Outcomes:**

Upon completion of this course, students should be able to do the following:

- Develop analytical reasoning to solve algebraic problems such as finding the solutions to polynomial, rational, exponential, logarithmic, and trigonometric equations, as well as finding inverse functions.
- Represent trigonometric functions by drawing relevant pictures on the unit circle, by writing the correct trigonometric definitions, and by verbal description.
- Demonstrate a critical understanding of functions by graphing and analyzing functions, evaluating functions at specific real numbers and at variable values, computing new functions from old functions through algebraic operations, and applying known theory such as the Factor Theorem to factor polynomials and find their zeros.
- Calculate the values of trigonometric functions based on right-triangular and circular definitions.
- Solve right triangles given appropriate information about sides and angles.
- Prove the validity of trigonometric identities.

**textbook:**

- Precalculus: A Right-Triangle Approach MyLab (ISBN: 9780137519484)

An ebook of the textbook will be included, so purchasing an actual textbook is NOT REQUIRED.

- We will do our course using MyMathlab This is how we will be completing all homework. You will have a 1-2 week free access at the beginning of the semester, but after that you must purchase this to continue.

**Technology:**

- An approved scientific, non-graphing calculator. A TI-30X IIS is great and sold at Walmart and Target. Any others must be approved before use on an exam.
- Website: Canvas will be used for all grades and lecture materials. Go to [www.uttyler.edu/canvas](http://www.uttyler.edu/canvas) to log into Canvas using your patriots account. If you have enrolled in the course, you should have access to our class Canvas. You will find all important documents, grades, lecture videos, and announcements here.
- MyMathLab will be used for all homework through Canvas and buying the passcode for the software is required.
- A computer is needed to do the homework with internet access.

**Assignments and weights/point values**

Assignment Weight

Homework 30% (Drop 2)

Exams 1-3 50% (replace 1)

Final Exam 20% Cumulative

**Grading Scale:**

A 90% or greater

B 80 – 89%

C 70 – 79%

D 60 – 69%

F below 60%

UT Tyler obligation or for religious observances. You must notify me IN ADVANCE and provide appropriate documentation. Other makeups are granted only in extreme cases and at the discretion of the instructor. Makeups will not be granted after the fact under any circumstances.

#### Graded Course Requirements Information:

- Homework (30%, drop 2): In this course, we will be using an online homework platform through our textbook called MyMathLab. Make sure that you have the access code for this software to be able to practice the material. Homework will be assigned after the completion of a section and then due a week later at the time that class starts. You will be able to submit your homework late, but for only 80% credit. I will drop 2 homework assignments.
- Exams 1-3 (50%): Exams will always be announced with at least a weeks notice on Canvas and in class. There are NO MAKEUPS for Exams unless you contact me BEFORE your class's exam time. We will make arrangements for you to take your exam in a timely fashion. I will drop the lowest exam and replace it with the final exam if the final is higher.
- Final Exam (20%): The final exam is cumulative and will not be dropped.

#### **Plagiarism and Academic Dishonesty**

Any work you submit must represent your own effort. If I determine that this is not the case, I will prosecute plagiarism and academic dishonesty to the fullest possible extent. All exams are closed book.

#### **COVID-19 and other illnesses**

It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID, and any new threats that may be developing. Be diligent about preventative measures such as washing hands, covering sneezes/coughs, and social distancing. I encourage those who don't feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce exposure. Please work with your faculty members to maintain coursework and please consult existing campus resources for support.

### Changes to Syllabus

I reserve the right to make changes to the syllabus during the semester. Any changes to course policies will be announced in class and an updated version of the syllabus will be posted to

Canvas.

### Tentative Calendar

Week #	Date	Class topic	Readings/ homework	Assignments Due
1	Jan-14	Syllabus, intro to Graphs	1.1	Jan-21
	Jan-16	Functions	1.2	Jan-23
2	Jan-21	linear functions and graphs	1.3, 1.4, 1.5	Jan-28
	Jan-23	piecewise functions/algebra of functions/comp	1.5, 2.1, 2.2	Jan-30
3	Jan-28	Symmetry and transformations	2.3, 2.4, 2.5	Feb-4
	Jan-30	quadratic functions and factoring	3.2	Feb-6

4	Feb-4	quadratic functions	3.3	Feb-11
	Feb-6	Exam 1 (1.2-2.5)		
5	Feb-11	Radical and rational functions	3.4	Feb-18
	Feb-13	Poly Functions	4.1, 4.2	Feb-20
6	Feb-18	Div poly, remainder thm and factor thm	4.3, 4.4, 4.5	Feb-25
	Feb-20	Graphing rational functions	4.5	Feb-27
7	Feb-25	inverse and exp functions	5.1, 5.2	Mar-4
	Feb-27	logs and their properties	5.3, 5.4	Mar-6
8	Mar-4	solving exp and log equations	5.5	Mar-11
	Mar-6	angles	6.1	Mar-13
9	Mar-11	test 2 (3.2-5.5)		Mar-25
	Mar-13	Right Triangle Trigonometry	6.2, 6.3	Mar-27
10	Mar-25	Circular Trig	6.5	Apr-1
	Mar-27	Graph sine and cosine	6.6	Apr-3
11	Apr-1	Inverse of Trig function	7.4	Apr-8

	Apr-3	Identities and sum and difference	7.1	Apr-10
12	Apr-8	Id and double and half angle	7.2	Apr-15
	Apr-10	Trig equations	7.5	Apr-17
13	Apr-15	law of sine and cosine	8.1, 8.2	Apr-22
	Apr-17	Catch up day		
14	Apr-22	exam 3 (6.1-8.2)		
	Apr-24	review final		
15		Final exam		

[Student Resources](#)

[University Policies and Information](#)