Math 2312.006 - Precalculus

Fall 2024

TuTh 9:30 - 10:50 am in RBN 4034

Instructor:	Dr. Maddie Dawsey
Office:	RBN 4048
Office Hours:	TuTh 8-9 am and We 1:30-3 pm, or by appointment
Email:	mdawsey@uttyler.edu
Website:	All course materials will be posted on Canvas

Textbook

Precalculus from OpenStax (Print ISBN: 1938168348).

This is an open-access textbook, so it is freely available here: www.openstax.org/details/precalculus. You can read it online, download a PDF version, or buy a print copy for about $40 (paperback) or $58 (hardcover).

Course Description

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, and two- and three- dimensional analytical geometry.

Course Learning Objectives

We will cover Chapters 1-7. By the end 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 zeroes.
- 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.

Important Dates

September 2	Labor Day Holiday
September 9	Census Date
November 4	Withdrawal Deadline
November 25-29	Thanksgiving Break
December 9-13	Final Exams

Grading Scheme

Your final letter grade will be determined by the following grading scheme, subject to the rules below:

Homework	**5%**
In-Class Activities	**25%**
Midterm Exams	**40% (20% each)**
Final Exam	**30%**

definitely an A	90 - 100
at least a B	80 - 89.99
at least a C	70 - 79.99
at least a D	60 - 69.99
definitely an F	0 - 59.99

To pass the course with a C or higher, you must earn a grade of 50 or higher on the final exam AND the average of your two midterm exam grades must be 50 or higher.

Attendance
Students must attend every class in person in order to complete the required activities. You are responsible for any announcements made during class.

Homework (5%)
Homework from the textbook will be posted on Canvas after each class. The homework problems for each week will be due on Canvas by the beginning of class the following Tuesday, unless otherwise specified by the professor. Homework will be graded for completion, but keep in mind that taking homework assignments seriously will help prepare you for activities and exams. Late homework will not be graded and will receive a grade of zero. Your lowest homework grade will be dropped at the end of the semester.

In-Class Activities (25%)
In class each day, we will work on an activity as we learn the required precalculus material. Activities will be worksheets containing real-life applications to supplement your understanding of each chapter. After each class, you will be required to submit a single PDF scan of your notebook with your notes for that day on Canvas – it is recommended that you organize your notes by date. Late submissions will not be graded and will receive a grade of zero. Your lowest activity grade will be dropped at the end of the semester.

Exams (20% each)
There will be two midterm exams, each worth 20% of the final course grade. The tentative schedule is:

Exam 1	**Thursday, September 26**
Exam 2	**Thursday, November 14**

Make-up exams for documented absences that are required as part of a UT Tyler obligation or for religious observation will be granted. For all make-ups of this type, prior notification and documentation are required. Other make-ups will be granted only in extreme cases and at the sole discretion of the professor. Missed exams that are not made up within one week will earn a grade of zero.

Final Exam (30%)
The final exam is cumulative and will be Thursday, December 12 at 9:30 - 11:30 am in our usual classroom.

Technology
Students will be required to have a device capable of internet access and access to Canvas, as well as either a PDF scanning app (iPhone Notes, Microsoft OneDrive, CamScanner, etc.) or access to a physical scanner. No laptops, cell phones, calculators, or other devices will be permitted on exams.

Student Resources
The Mathematics Learning Center (MLC), RBN 4021, is an open access computer lab for math students. There are tutors on duty during the fall and spring semesters to assist students who are enrolled in early-career courses. More information can be found here: https://www.uttyler.edu/math/math-learning-center.

The PASS Tutoring Center, located in LIB 401, also offers free tutoring for early-career courses and has walk-in hours. More information, including a current schedule and instructions for making tutoring appointments, can be found here: https://www.uttyler.edu/tutoring.

Other resources that are readily available to you include:

- Your textbook. Remember that each section has links to relevant online resources and YouTube videos.
- Your professor (via office hours or email).
- Acceptable[1] online resources, such as YouTube videos or free online tutorials.

[1]The use of artificial intelligence (AI), online Q&A blogs like Math Stack Exchange, and online solution manuals like Chegg is not permitted in this course. Please refrain from using AI tools and online solutions.

University Policies

For university policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, Campus Carry, Social Security and FERPA Statement, please see the University Information module on the course Canvas page.

Tentative Schedule

WEEK	DAY	PLANNED MATERIAL	ACTIVITY
Week 1 8/26–8/30	Tuesday	Algebra Review	
	Thursday	Chapter 1	Temperature Regulation in a Green Building
Week 2 9/2–9/6	Tuesday	Continue Chapter 1	
	Thursday	Continue Chapter 1	
Week 3 9/9–9/13	Tuesday	Continue Chapter 1	
	Thursday	Chapter 2	Maglev Train Travel
Week 4 9/16–9/20	Tuesday	Continue Chapter 2	
	Thursday	Continue Chapter 2	
Week 5 9/23–9/27	Tuesday	Chapter 3	Satellite Communications
	Thursday	EXAM 1 (Chapters 1-2)	
Week 6 9/30–10/4	Tuesday	Continue Chapter 3	
	Thursday	Continue Chapter 3	
Week 7 10/7–10/11	Tuesday	Continue Chapter 3	
	Thursday	Continue Chapter 3	Minimizing Costs of Storage Containers
Week 8 10/14–10/18	Tuesday	Continue Chapter 3	
	Thursday	Continue Chapter 3	
Week 9 10/21–10/25	Tuesday	Chapter 4	How Many Transistors Fit on a Computer Chip?
	Thursday	Continue Chapter 4	
Week 10 10/28–11/1	Tuesday	Continue Chapter 4	
	Thursday	Chapter 5	Lunar Landers in Action
Week 11 11/4–11/8	Tuesday	Continue Chapter 5	
	Thusday	Continue Chapter 5	
Week 12 11/11–11/15	Tuesday	Chapter 6	
	Thursday	EXAM 2 (Chapters 3-5)	
Week 13 11/18–11/22	Tuesday	Continue Chapter 6	
	Thursday	Continue Chapter 6	
Week 14 11/25–11/29	Tuesday	*Thanksgiving Break*	
	Thursday	*Thanksgiving Break*	
Week 15 12/2–12/6	Tuesday	Continue Chapter 7	
	Thursday	Continue Chapter 7	
Week 16	Thursday	FINAL EXAM	