

Math 112 A Syllabus

Fall 2026

Course Description

A continuation of MTH 111. Topics include inverse functions, techniques of integration, applications of the integral, and infinite sequences and series. Prerequisite: Math 111.

Textbook

Title: *University Calculus Early Transcendentals, Fourth Edition*

Authors: Hass, Heil, Bogacki, Weir, and Thomas

Publisher: Pearson

ISBN: 978-0-13-499554-0

Course Objectives

Students successfully completing this course should be able to:

- Differentiate and integrate hyperbolic, logarithmic, exponential and inverse trigonometric functions.
- Evaluate integrals using techniques including integration by parts, partial fractions, trigonometric integrals, and trigonometric and other substitutions.
- Solve integral application problems including area, volume, surface area, work, curve length, and center of mass.
- Solve separable and first order linear differential equations.
- Understand and use parametric curves and polar coordinates.
- Determine convergence of and compute improper integrals.
- Determine whether an infinite sequence converges or diverges and compute the limit.
- Determine whether an infinite series converges absolutely, converges conditionally or diverges using techniques including the direct comparison, limit comparison, root, ratio, integral, p-series, nth-term and alternating series tests.

- Compute the radius and interval of convergence of a power series.
- Compute the sum of a convergent geometric series and a convergent telescoping series.
- Compute Taylor series and binomial series.

Grading

Point Distribution

Item	Percentage
Exam 1	16.5%
Exam 2	16.5%
Exam 3	16.5%
Exam 4	16.5%
Final Exam	34.0%

Grading Scale

Grade	Range
4.0	$[90, \infty)$
3.5	$[85, 90)$
3.0	$[80, 85)$
2.5	$[75, 80)$
2.0	$[70, 75)$
1.5	$[65, 70)$
1.0	$[60, 65)$
0.0	$[0, 60)$

Averages are not rounded.

At the end of the semester, if your final exam score is higher than your lowest midsemester exam score then the final exam score will replace the lowest midsemester exam score.

In order to get a 2.0 or higher in the course, your grade on the final exam must be at least 50%, regardless of your average.

Homework

Homework will not be graded. However, if you do not do the homework you should expect to fail the course.

Exams

There will be no makeups for exams for any reason. Your low exam grade will be replaced by your final exam grade if your final exam grade is higher.

Do not make travel plans until the final exam schedule is released. I will follow the registrar's final exam schedule strictly.

Attendance

Attendance is required. More than four unexcused absences will result in a failing grade for the course, regardless of your average.

How To Succeed in Calculus

Do the homework. Do homework every day. If you do not understand the homework, then go to your professor's office and ask for help. No, really. Do the homework. Do every problem. Do it every day. Let me see if I can make this very clear. Do the homework!