

Math 131 - 02 Calculus I Fall 2026 Syllabus

Instructor : Richard Bartels, PhD

Contact Information : MECC 227, rbartels@trincoll.edu

Office Hours: MWF 9:50-10:50 am and 12:00-1:00 pm
or by appointment (email to set up)

Lecture : MWF 8:30 - 9:45 am MECC, Room 246

Textbook : *Calculus* (1st edition) by Laura Taalman and Peter Kohn

Note: The textbook from the bookstore comes bundled with “Achieve” access for all levels of calculus. If you buy the book elsewhere, it probably **does not** come with “Achieve” access. “Achieve” access can be purchased individually from the publisher’s website (see Moodle for details).

This semester students will receive free access to the e-book via the “Achieve” website. See instructions on Moodle for a link to access the textbook.

Grading : Your final letter grade for the course will be determined from your numerical percentage grade in the following way: (... , B 83-86, B^+ 87-89, A^- 90-92,...). It is the policy of the math department to not award the grade of A^+ in 100-level courses. Here is how your grade is determined.

Attendance/Participation :	5%
Written homework :	15%
Achieve homework :	5%
Quizzes :	5%
3 Exams :	15% each
Final Exam :	25%

Important Dates :

Tues, Sep 15	Add/Drop Period ends
Nov 2 – 6	Advising Week
Wednesday, Nov 11	Last day to withdraw from Fall Term courses
	Last day to declare a class Pass/Low Pass/Fail
Mon, Dec 14	Last day of classes
Dec 17 - 23	Final examinations

The final exam is Wednesday December 23rd, 9:00-11:30am.

Do not make arrangements to leave for break before the final exam date.

Please read and sign the following declaration regarding academic integrity:

In accordance with Article II of the Trinity College Student Integrity Contract, I hereby pledge that the papers, exams, and other academic exercises I submit for this course will represent my own work; that I will properly acknowledge and attribute any and all information and ideas that I have used from other sources; and that no collaboration unauthorized by the instructor of the course will occur in the course of its completion.

Signature: _____

Date: _____

Office Hours : You are encouraged to come to office hours whenever you have questions, especially when you don't understand how to solve a problem from a past exam. You are always welcome to ask me about homework problems and course material. If you are unable to make my regularly scheduled office hours, please email me to set up an appointment, or drop by if I'm in my office.

Learning Goals: In this course, we will quickly recall (in Ch 0) some essential facts about functions of a single real variable and their graphs before undertaking a treatment of differential calculus (in Ch 1-3). Throughout, we will focus on gaining a strong intuitive, geometric, and formal understanding of important definitions, theorems, methods, and applications:

- (Ch 1) Understand the concept of “limit”, its essential role in defining “continuous” functions, and important properties of continuity, especially the Intermediate Value Theorem. Be able use algebraic techniques, and results from class to calculate limits for a wide variety of elementary functions.
- (Ch 2) Understand the concept of “derivative”, especially how it is defined using a limit, and how it may be interpreted as a rate of change, or the slope of a tangent line. Be able to use algebraic techniques, and results from the class to calculate derivatives for **all** elementary functions.
- (Ch 3) Understand the application of the above to fundamental problems in geometry, physics (especially motion), economics (especially marginal quantities), and other disciplines. Be able to solve various “word problems” using techniques of calculus, especially “related rates” and optimization problems. Be able to sketch accurate graphs given information about the derivatives.
- Be able to communicate mathematics effectively, using complete sentences which blend the English language with mathematical definitions, notation and accompanying figures.

Exams : There will be three in-class exams as indicated on the schedule below, and one cumulative final exam which is scheduled by the registrars office for **Monday December 23, 9:00 - 11:30pm**. **Do not make arrangements to leave for break before the final exam date.**

Homework : One component of your homework grade will be graded problems assigned through the online Achieve system. Information to self-enroll in Achieve will be available on Moodle. You are responsible for checking the website for due dates. Typically there will be one assignment for each 1-2 lectures, with 1-2 assignments due each week.

In addition to the online Achieve assignments, written homework problems will be assigned once every 1-2 weeks.

You are encouraged to form study groups and visit office hours or the Tutoring Center for help with homework problems, but you must write your solutions independently.

Students with Accommodations : Trinity College is committed to creating an inclusive and accessible learning environment consistent with the Americans with Disabilities Act. Students with disabilities who may need some accommodation in order to fully participate in this class are urged to contact the Student Accessibility Resource Center, as soon as possible, to explore what arrangements need to be made to assure access.

If you have approval for academic accommodations, please notify me by the end of week two of classes. For those students with accommodations approved after the start of the semester, a minimum of 10 days' notice is required. Please be sure to meet with me privately to discuss implementation.

Student Accessibility Resources can be reached by emailing SARC@trincoll.edu

Academic Integrity : In accordance with the Trinity College Student Integrity Contract, students are expected to abide by the highest standards of intellectual honesty in all academic exercises. Intellectual honesty assumes that student do their own work and that they credit properly those upon whose work and thought they draw. It is the responsibility of each student to make sure that they are fully aware of what constitutes intellectually honest work in every exam, quiz, homework, or other academic exercise submitted for evaluation in a course at Trinity College.

Course Webpage: At the webpage <https://calculus.domains.trincoll.edu> you will find information about the Math Tutoring Center, Calculus workshops, as well as links to helpful desmos graphs and other supplemental materials.

Calculus Workshops: The calculus workshop is an optional 0.25 credit (pass/fail) class, which meets once a week for 75 minutes on Thursday in MECC 172. Each week, you will work in small groups with students from various sections of Math 131 on worksheets of supplemental problems designed to reinforce and expand your understanding of the material.

There are two sections. You can enroll as if it were any other class:

Math 131-20	Tuesday	10:50am-12:05pm	MECC 172
Math 131-21	Tuesday	9:25am-10:40am	MECC 172

Note: You can enroll in a calculus workshop even after the add/drop period ends. I will find out the last day this is possible.

Tutoring: Drop-in tutoring is available in the Math Tutoring Center (Q-Center), located in MECC 172, Monday through Thursday 4-10pm and Sunday 7-10pm. The schedule and instructions to access tutoring will be made available in the second week of classes and linked from Moodle as well as at the webpage <https://www.trincoll.edu/quantitative-center/tutoring-support/>

Course Policies :

- **Low Exam Policy:** If your grade on the final exam is better than the grade on your lowest midterm exam, your final exam grade will replace your lowest midterm exam grade. **Note:** you must take all three midterm exams.
- **Calculator Policy:** You may use a scientific or simple function calculator on exams, but not a graphing calculator. You may use any calculator during class, but not any other electronic devices, except for note taking.
- **Use of Moodle:** I will use Moodle to post links to lecture notes, homework assignments, so-

lutions to homework assignments and exams, worksheets, and review packets. Please make sure you are able to access the Moodle site and bookmark it.

- **Use of Email:** I will use trincoll email to make announcements. Please make sure that your Trinity email account is working and check regularly for announcements.

Tentative Weekly Schedule :

Week number	Monday of week	Textbook sections	Topics
1	Sep 7	0.1, 0.2	<i>(LABOR DAY, no class M)</i> Review of Functions, Piecewise Functions, Domain, Graphs, Transformations, Inverses
2	Sep 14	1.1, 1.4	Idea of Limit, Left & Right Limits, Limits from Table, Limits from Graph, Definition of Continuity, Left & Right Continuity, Discontinuities, Intermediate Value Theorem, Extreme Value Theorem
3	Sep 21	1.4, 1.5	Limit Rules, Cancellation Theorem, Squeeze Theorem
4	Sep 28	1.6, 2.1	Infinite Limits, Limits at Infinity, Vertical/Horizontal Asymptotes, Idea of Derivative, Secant & Tangent Lines, Average & Instantaneous Rates of Change
5	Oct 5	[[Exam 1]], 2.2	EXAM 1 (0.1-0.2, 1.1, 1.4-1.6), Definition of Derivative, Left & Right Derivatives
6	Oct 12	2.2, 2.3	<i>(TRINITY DAYS, no class M-T)</i> Differentiability Implies Continuity, Second Derivative, Basic Derivative Rules
7	Oct 19	2.3, 2.4	Product Rule, Quotient Rule, Chain Rule, Implicit Differentiation
8	Oct 26	2.5, 2.6	Exponential Derivatives, Definition of e (handout), Log Derivatives, Precalculus Review of Trigonometric Functions, Limits and Continuity of Trig and Inverse Trig Derivatives
9	Nov 2	[[Exam 2]], 2.5, 2.6	EXAM 2 (2.1-2.6), Logarithmic Differentiation, Inverse Function Theorem
10	Nov 9	3.1, 3.2	Critical Points, Local Extrema, Rolle's Theorem, Mean Value Theorem, Sign Charts, Increasing/Decreasing, First Derivative Test
11	Nov 16	3.2, 3.3, 3.4	Concavity, Inflection Points, Second Derivative Test, Curve Sketching, Finding Global Extrema on Intervals
12	Nov 23	3.4	<i>(THANKSGIVING BREAK, no class W-F)</i> Optimization Word Problems
12*	Nov 30	[[Exam 3]], 3.4	EXAM 3 (2.5-2.6, 3.1-3.4), Optimization Word Problems
13	Dec 7	3.5, 3.6	Related Rates Word Problems, L'Hopital's Rule, Indeterminate Forms, $0/0$, ∞/∞ , $\infty-\infty$, $0\cdot\infty$, 0^0 , 1^∞
13*	Dec 14	Review	<i>(READING DAYS, no classes T-W)</i> FINAL EXAM (cumulative) on WEDNESDAY Dec 23

The content, policies, assignments, and schedule listed in this syllabus are subject to change. I will announce any changes in class and via email.