

Math 102 Calculus II Syllabus

Fall 2025

About the course

Calculus II is all about sharpening your Calc I skills and putting them to work. We will learn handy integration techniques like substitution, integration by parts, partial fractions, and trig substitutions and use them on real problems like areas and volumes. Then we will dive into sequences and series: how to tell if they converge, how power and Taylor series approximate functions, and why that is useful. We will wrap up with a gentle intro to differential equations for modeling things like growth and decay. Expect lots of practice, clear examples, and plenty of support as we go.

Instructor & Contact

- Instructor: Denae Ventura
- Please contact me via **Moodle**. Otherwise, email me at dventuraarre@mtholyoke.edu
- Office hours: M–Th 3:10 – 4:00 PM at Clapp 404-A.
If you need to attend at a different time, please let me know.

Classes

- **Section 01** M–W–F 8:30 – 9:45 AM in ART 220.
- **Section 02** M–W–F 10:00 – 11:15 AM in ART 221.

Prerequisites

Intended for students who have passed MATH-101, or passed AP Calculus AB with a score of 4 or 5, or have placed into MATH-102 through the department's placement test.

Learning goals

During the semester the plan is to learn

- **Definite Integrals:** Define and understand the definite integral; apply the Fundamental Theorem of Calculus with its interpretations.
- **Techniques of Integration:** Apply substitution and integration by parts; use tables of integrals, algebraic identities, and trigonometric substitutions; evaluate improper integrals and compare their convergence.
- **Applications of Integration:** Compute areas and volumes; apply integrals to problems in geometry.
- **Sequences and Series:** Analyze sequences and geometric series; determine convergence of series using various tests; work with power series and find intervals of convergence.
- **Approximating Functions:** Construct Taylor polynomials and Taylor series; find and use Taylor series expansions.
- **Differential Equations:** Recognize what differential equations are and understand their role in modeling real-world problems.

Course books

I will use both of these books, the first probably more than the second. I believe they can be found on the LITS portal. You may purchase them if you wish, but it is not required.

1. Calculus Single Variable by Hughes-Hallet, Gleason and McCallum. 7th edition by Wiley.
2. Single Variable Calculus Early Transcendentals by James Stewart. 7th edition by Brooks/Cole, Cengage Learning.

Important dates (subject to change)

1. First exam: October 10, 2025 during class
2. Second exam: November 24, 2025 during class
3. Final exam: Self-scheduled

Grading (subject to change)

• Homework 20%

There will be approximately 10 weekly homework assignments throughout the course. There will be no homework due during exam weeks. I will take 8 homework assignments into consideration for 20% of final grade. Homework grades are based on **completion** of the assignment and must be turned in on Gradescope every Friday before 6 PM.

No partial or late homework assignments will be considered, so try to use the homework relaxation for unforeseen situations.

• Quizzes 15%

There will be weekly 15-minute quizzes every **Friday** except when there is a midterm. All of the quizzes together will be worth 15% of your final grade.

• Two midterms 20% + 20%

There will be two midterms. Each will make 20% of your final grade. The first midterm will be on **October 10** and the second on **November 24**.

• Final exam 20%

The final exam will be self-scheduled and worth 20% of the final grade.

• Participation 5%

Participation is fundamental for success in this course. Attending class and participating actively can make a great impact on your learning and performance. Please feel free to stop me at anytime to ask a question. I also encourage you to get together with other classmates to work on homework assignments or to study together. Explaining a concept to someone else not only helps them understand, it also deepens your own learning. Try to attend seminars and activities that I promote in class. And very important, come to office hours!

Letter grading

Overall letter grades will be based on a scale no stricter than the usual:

- 93-100: A
- 90-93: A-
- 88-90 B+
- 83-88: B
- 80-83: B-
- 78-80: C+
- 73-78: C
- 70-73: C-
- 68-70: D+
- 63-68: D
- 60-63: D-
- 0-60: F

Homework submission

You may turn in your homework assignments in one of two ways:

1. Upload a pdf document with your completed assignment on Gradescope. The use of LaTeX is highly encouraged for writing your homework assignments. You don't need a compiler on your computer. You can use Overleaf, which is an online LaTeX editor. To see a brief introduction to Overleaf, click [here](#). You do not have to purchase a Premium account. The free version is good enough. Otherwise, you may use any editor with the option for **writing math**. Make sure your math expressions are clear and do not leave room for confusion.
2. Upload a clear hand-written document to Gradescope. In this case, please upload pictures converted to pdf format to Gradescope.

Evening Help

TA	Schedule	Clapp room
Charlotte Bryan	Sundays 7–9pm	407
Mai Nguyen	Wednesdays 7–9pm	407
Maimoona Abdaal	Sundays 3–5pm	422
Elizabeth Kizor	Mondays 7–9pm	407
An Le	Tuesdays 7–9pm	407

Class conduct and academic integrity

- I encourage you to be respectful of this class, our TA, myself and your classmates. Please leave your phone in your bag and keep it silenced or turned off during my lectures, office hours and tutoring sessions. If you need to step outside, do so quietly. Asking questions and engaging in discussions is a great way to learn.
- It is very important for you to follow the **Honor Code** in all of your work for this course. Collaboration on

homework assignments is encouraged. Please write your assignments in your own words understanding everything you are writing. I cannot give credit for plagiarized work and might have to refer such issues to the academic deans. If you have any questions about whether something is an Honor Code violation, please ask me.

Technology

Here are some general remarks on the use of calculators, software, and phones.

- For all homework, quizzes, and exams, you may use a scientific calculator, but it is not necessary or required.
- Software like Wolfram Alpha or Desmos can be used on homework or other outside the class work, but its use should be cited and you are expected to show your work on problems. These resources will not be available on quizzes and exams.
- ChatGPT or other AI should be avoided when doing assignments since one of the fundamental focuses of our class is learning to reason and explain thought processes through writing. Such software can also sometimes be unreliable when it comes to mathematical reasoning.
- It is ok to take photos of the board for note taking, but please do not share online.
- Please keep your phones on Do Not Disturb mode in class, especially during quizzes and exams, so as not disturb others with ringers or vibrations.
- If you're unsure whether something is ok to use, please feel free to ask.

Student Accessibility

If you are a student who requires academic accommodations, please submit your Letter of Accommodation to me as soon as possible, ideally within the first two weeks of this course.