

MATH 225-W01, M01, W101 – Calculus I

Spring 2023 Syllabus

Instructor: Grant Kopitzke

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Classroom: Wausau 191, Marshfield 126

Class Meeting Time: 11:00 – 11:50 Monday, Tuesday, Wednesday, Thursday, Friday

Communication: The best way to get ahold of me is by messaging me on Canvas or emailing me. If you message or email me during working hours (8:00-5:00 Monday through Friday) then I am usually very quick to respond. Outside of those times, it may take me a while to respond (especially on weekends). If I need to get ahold of you, I will email you or message you on Canvas. I expect that you'll be checking your campus email and checking Canvas at least once every day.

Office Hours: 10:00 – 11:00 Monday, Tuesday, Thursday, Friday

Office hours are a time I set aside each week for any of my students to come to my office to meet with me and get their course-related questions answered. If you are on the Wausau campus, feel free to drop by unannounced in my office at these times.

I will occasionally be at the Marshfield campus (the schedule for my visits will be posted later), so if you're at the Marshfield campus you can come to office hours when I'm in Marshfield, or you can attend office hours virtually via Zoom. The link to my "Zoom office" will be provided on the course Canvas page. I won't log into the Zoom room unless someone wants to meet with me, so please email me or let me know in class if you want to meet via Zoom later – that way I'll know that I should log in.

Textbook:

Calculus, Early Transcendentals, 8th ed., by James Stewart.

ISBN#: 978-1-305-27003-6. You can also use the "enhanced" textbook that includes the chapters for Calc III with ISBN#: 978-1-285-74155-0.

Class Meetings & Attendance:

There are three sections of this course:

1. W01 – students who are enrolled in the course at the Wausau campus.
2. M01 – students who are enrolled in the course at the Marshfield campus.
3. W101 – remote students taking this course at their local high school, who are unable to make it to a UWSP campus.

To accommodate each of these different sections, the course will be taught out of a Point-to-Point (P2P) classroom at the Wausau campus and streamed live to a P2P classroom at the Marshfield campus and streamed live via Zoom (the Zoom information will be provided only to students enrolled in section W101). Students enrolled in the W01 section will be expected to attend class every day at the Wausau campus, and students enrolled in the M01 section will be expected to attend class every day at the Marshfield campus. We may occasionally have activities that we complete in class, and failure to appear in class on those days will result in a score of 0% on that activity.

Calculators:

A scientific calculator will be necessary for this course. You may use any calculator you wish on homework and quizzes, but only scientific (non-graphing) calculators may be used on in-class exams. I recommend a

Casio FX-115, Casio FX-300, or Casio FX-991 (the 991 is the nicest of these and is about \$20.00). These are just my recommendations – you can use whatever scientific calculator you prefer.

Course Content:

- Develop the core concepts of Calculus using the *limit process* for functions given mainly in terms of formulas, but also for functions described by tables, graphs, and verbal descriptions.
- Gain competency at differentiation and integration of standard polynomial, radical, exponential, logarithmic, trigonometric, inverse-trigonometric, and rational functions.
- Enhance skills in mathematical formulation and analysis of function describing relations between quantities. We will also utilize and hone skills from Algebra and Trigonometry.
- In the text, we'll cover most of chapters 1-6. A detailed list of topics is included in the course schedule.

Quantitative Literacy Learning Outcomes:

1. Select, analyze & interpret appropriate numerical data used in everyday life in numerical and graphical format.
2. Identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications
3. Construct a conclusion using quantitative justification.

Homework (0% of your grade):

Appropriate problems from the text will be assigned as concepts are covered. These problems will come from the textbook and will be posted to Canvas. You will usually get a new problem set each class period.

Completing and understanding these problems is essential for you to succeed in this course. Every afternoon/evening you should attempt all that day's homework problems in an organized homework/notes notebook and bring any questions or comments for discussion at the start of the next class.

Your homework from each unit will be spot checked before each exam (checked for completion – not correctness). Periodically throughout each unit, I will post “Homework Check” drop boxes on Canvas, where you will need to upload your solutions to the specified homework problems. Uploads must be PDF files, so please make sure that you download a free PDF scanner app or use one of the school scanners to upload your homework.

If you have attempted at least 80% of the homework problems in the unit immediately prior to a given exam, and I have confirmed that proportion in a homework spot check (**prior to the exam**), then you will receive 5 points of extra credit toward the corresponding unit exam. Late homework will not be accepted for extra credit.

Quizzes and in-class activities (15% of your grade):

There will be a take-home quiz (available on Canvas) that you will be expected to do (roughly) each week – except for weeks in which we have an exam. These quizzes will contain questions that are closely related to concepts covered in the previous few days' homework and topics covered during class. Paying attention in class and doing assigned homework problems should prepare you well for these quizzes. The quizzes will be available on Canvas, usually for one weekend (Friday through Sunday). Once you begin the quiz, you'll have one hour to complete all the problems on scratch paper, and thirty extra minutes to upload a scan of your solutions to Canvas. For quizzes, you can upload your solutions as PNG or JPEG images, or as PDFs.

There will be no rescheduled quizzes except for extenuating circumstances. The quizzes are open-book and open-note, but you will not be allowed to use the internet, phone apps, computers, or help from others. If I believe that one of those unallowed resources has been used, then you'll receive a 0 for that quiz. Repeated incidents will be reported to the school, and disciplinary action may be taken.

If cheating on quizzes becomes an issue, then I may decide to make quizzes proctored activities that are taken in person, or with online proctoring software.

We may occasionally have mini-quizzes or other activities on Canvas or in class. Any in-class activities can only be completed on that day, and no makeups will be allowed (except for extenuating circumstances).

Exams (60% Midterms, 25% Final):

For students enrolled in the W01 section, you will be expected to take all exams in-class at the Wausau campus at the scheduled times. For students enrolled in the M01 section, you will be expected to take all exams in-class at the Marshfield campus at the scheduled times.

There will be four in-class one-hour exams given on or near the dates listed in the course schedule on the last page. There will also be a two-hour comprehensive final exam. All exams will be closed-book and closed-note. You may use a scientific (non-graphing) calculator on your exam but no other calculators will be allowed on exams. More advanced graphing calculators (especially CAS calculators) don't end up helping the average student – they merely allow the user to bypass the learning process, and place the actual mathematics in a “black box” (see [Black Box on Wikipedia](#)).

Midterm Exam & Quiz Grade Replacement:

If you do poorly on a midterm exam, you will be able to substitute the percentage score on your final exam in place of any one single midterm exam grade. For example, if you get a 55% on exam 2, but get an 85% on the final exam, then your exam 2 grade will automatically get bumped up to an 85%, and your final exam will also stay an 85%. No other exam grades would be affected.

If you are satisfied with your midterm exam grades, but your quiz grade is lower than that of your final exam, then you can also opt to replace your quiz category grade with the grade you earned on your final exam. If you missed a midterm exam due to an unexcused absence, then that grade will not be eligible for replacement. In order to be eligible for a grade replacement, the midterm exam or quiz category score must be at least 25%. This is for two reasons:

1. To prevent students from not studying for a midterm exam because they think it will just be replaced by their final.
2. To prevent students from skipping midterm exams, or not taking their quizzes seriously.

Each midterm exam and quiz tests you on key concepts that will all appear on the final exam, and in subsequent classes, so they should all be taken equally seriously and viewed as aides in the learning process – not as obstacles to overcome.

The purpose of this grade replacement policy is to try to give you a second chance on early grade components in the course, by allowing extra studying and hard work at the end of the semester to pay off and count double.

Policy on Missed Exams:

If a conflict prevents you from taking an exam, you should contact me well before the exam, if possible, and arrange for an early exam. Not all absences will be excused. The following list is the most common excused absences that may be accommodated:

1. An illness with a doctor's note submitted to the instructor prior to the date of the exam.
2. A documented school athletics event.
3. Jury duty or a court date, with documentation.
4. Military obligations, with documentation.

Please Note: family vacations are not an excused absence. If you miss an exam due to a vacation or trip during the semester, you will receive a 0% on that exam and that grade will not be eligible for replacement at the end of the semester.

Academic Misconduct:

All students are expected to know the UWSP Community Rights & Responsibilities, and the Student Academic Standards and Disciplinary Procedures found on the Dean of Students webpage at

<https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx>

Any instances of perceived academic misconduct will be investigated following the Student Academic Disciplinary Procedures:

<https://www3.uwsp.edu/dos/Documents/UWS%2014-1.pdf>

Apps: Apps like Photomath, Microsoft Math Solver, Wolfram Alpha, Symbolab, Mathway, and Cymath (amongst a plethora of others) have their place. That place is to help you understand the techniques used to solve an extremely basic and specific problem. Feel free to use these apps to help you understand how to approach homework problems. Please don't just copy solutions from these apps into your homework notebook – this won't help you learn the material and won't help you pass the class. The only way these apps should be used is to give you a nudge as to what the “next step” is when solving a problem.

The use of these apps is not allowed on quizzes or exams. If I compare your solution to a quiz problem to the solution provided by one of these apps, and it looks like it was copied, you'll receive a 0% on that quiz problem. Please make sure that all graded work that you submit is truly yours.

Grading Schedule:

Homework:	0% (HW counts toward midterm extra credit)
Quizzes:	15%
Midterm Exams:	60%
Final Exam:	25% (Extra credit through grade replacement)

Grading Scheme:

Course Grade (%) at or above a:	93%	90%	87%	83%	80%	77%	73%	70%	67%	60%
Will receive at least a grade of:	A	A-	B+	B	B-	C+	C	C-	D+	D

Tentative Schedule for the Semester (subject to change)

Week	Sections	Content
1	Review of Pre Calc	Preview of Calculus, and review of algebra and trigonometry.
2	2.1-2.4	Tangent and velocity problems, limit concepts.
3	2.5-2.7	Analytical evaluation of limits, continuity, tangents, and rates of change.
4	2.7, 2.8, Midterm Exam 1	The derivative as a function.
5	3.1, 3.2	Derivatives of Polynomials, exponentials, products, and quotients.
6	3.3-3.5	Derivatives of trig functions, chain rule, implicit differentiation.
7	3.6-3.9	Differentiation of logarithms, and applications of differentiation
8	3.10, 3.11, Midterm Exam 2	Differentials, linear approximation, hyperbolic functions.
9	4.1-4.3	Max/Min of functions, Mean Value Theorem, derivatives and shapes of graphs.
10	4.4-4.7	L'Hospital's rule, indeterminate limit forms, summary of curve sketching.
11	4.8, 4.9, Midterm Exam 3	Newton's method, and antiderivatives.
12	5.1-5.3	Areas and distances, Riemann sums, The Fundamental Theorem of Calculus
13	5.3-5.5	Fundamental Theorem of Calculus, net change theorem, indefinite integrals, U-substitution
14	6.1-6.3	areas between curves, volumes of solids using disc method & cylindrical shells
15	Midterm Exam 4 , Final exam review	Volumes by shell method, Exam IV & Final exam review.
16	Final Exam	The final exam is on Wednesday, 05/17 from 12:30pm – 2:30pm

NOTE: If we need more time for some topics, or less time for others, then this schedule will be changed to accommodate. Exams may end up taking place on days other than the ones listed here.

It is imperative that you pay attention to schedule discussions in class, and closely watch any announcements regarding schedule changes on Canvas. You will be responsible should you miss an exam or assignment due date because of schedule changes.