

**MATH 225 CALCULUS I Spring 2024**  
MW 11 - 11:50 am, TR 11:00 am – 12:15 pm

**INSTRUCTOR:** Dr. Kavita Bhatia

**OFFICE:** Room 207B

**E-MAIL ADDRESS:** kbhatia@uwsp.edu

**OFFICE HOURS:** M-Th 10 am – 11 am by appointment. You may connect with me during office hours by Zoom. The link is available on the course Canvas page.

**COURSE DESCRIPTION:** Introduction to limits; differentiation and integration of algebraic and transcendental functions; applications of differential and integral calculus.

**PREREQUISITE(S):** MATH 118; MATH 119 or concurrent enrollment in an 8-week section of MATH 119; or suitable placement test score

**COURSE FORMAT:** This course will be delivered in the point to point (P2P) using Zoom. Some of you will be in the classroom with me, while others will be connecting remotely via Zoom. You will use your UWSP account to login to the course from the [Canvas Login Page](#). If you have not activated your UWSP account, please visit the [Manage Your Account](#) page to do so.

**REQUIRED MATERIALS for the COURSE:**

- **Textbook:** *Calculus, Single Variable, Early Transcendentals*, 8<sup>th</sup> Edition by Stewart. We will be covering chapters 2-6.
- A scientific or graphing calculator is required and should be brought to class daily. The TI graphing calculators are most familiar to me. One like the TI-83+ or TI-84 can be a helpful tool for understanding concepts and working homework problems. Computers, phones, and calculators with a “QWERTY” keyboard are not allowed during exams or quizzes, and sharing is not permitted. **Cell phone calculators will not be allowed on exams and quizzes.**

**GOALS & OBJECTIVES:** To obtain an understanding of the ideas underlying differential and integral calculus. Specifically, the goals are to

- understand the idea of limits
- compute limits algebraically, graphically and numerically
- understand the notion of continuity and how it relates to limits
- understand the notion of the derivative
- understand the relation between the derivative and the tangent line
- calculate derivatives by using formulas
- apply the knowledge of the derivative to real world problems
- understand what definite integrals are
- understand the relation between the derivative and the integral
- compute definite integrals graphically and algebraically
- solve applied problems using integration

**Attendance and Participation:** You are expected to attend all classes and participate in class discussions.

**GRADING POLICY:** Your course grade will be computed as follows:

Quizzes	10%
Homework	10%
Attendance and Participation	3%
3 Exams (18% each)	54%
<u>Final Exam (Comprehensive)</u>	<u>23%</u>
Total	100%

**GRADING SCALE:** Grades will be assigned according to the scale below:

93%--100%	A	77%--79%	C+
90%--92%	A-	73%--76%	C
87%--89%	B+	70%--72%	C-
83%--86%	B	67%--69%	D+
80%--82%	B-	60% -- 66%	D
		59% or less	F

**HOMEWORK:** You will be using the software MyOpenMath to do your homework. MyOpenMath is a free open source, online course management and assessment system for mathematics. There will be one homework assignment for each textbook section covered in the course. The homework assignments will be automatically graded and must be completed by the due date. You are responsible for submitting all work on time.

**QUIZZES:** There will be a quiz every Tuesday. There will be NO make-up on the quizzes. The quiz with the lowest score will be dropped.

**EXAMS:** There will be three in-class exams and a two-hour final. All exams will be proctored. *Students that are taking the class remotely will have to be at a campus location for exams. Please contact me ASAP if you have any issues with this policy.* Tentative exam dates are listed in the calendar at the end of the syllabus. The final exam will be comprehensive. **It is scheduled for Monday, May 13 from 8:00AM -10:00AM.**

**TUTORING-LEARNING CENTER (TLC):** The Tutoring-Learning Center (TLC) is the UWSP academic support center. The TLC offers individual, drop-in tutoring in math, writing, and STEM, Student Success Workshops, and credited courses. They also offer Academic Coaching as an opportunity to work on skills such as goal-setting, motivation, note-taking, test-taking, time-management, study skills, etc. The TLC is open to all UWSP students seeking services and has centers on all three campuses – Stevens Point, Wausau, and Marshfield.

TLC Locations:

- Stevens Point: CCC 234
- Wausau: Wausau Campus Library
- Marshfield: Marshfield Campus Library

Contact Information:

- Stevens Point: [tlctutor@uwsp.edu](mailto:tlctutor@uwsp.edu); 715-346-3568
- Wausau: [lorandal@uwsp.edu](mailto:lorandal@uwsp.edu); 715-261-6148
- Marshfield: [roleary@uwsp.edu](mailto:roleary@uwsp.edu); 715-898-6036



*Tentative Weekly Schedule – Spring 2024*

<b>Week</b>	<b>Approximate text sections to discuss this week</b>	<b>Events this week</b>
1. Jan. 22 – 26	Factoring Review, Library of Functions, 2.1	HW 2.1 by Sat
2. Jan. 29 – Feb 2	2.2, 2.3, 2.5	HW 2.2 by Tue; HW 2.3 by Thu; HW 2.5 by Sat
3. Feb. 5– 9	2.6, 2.7, 2.8	Quiz 1, HW 2.6 by Tue; HW 2.7 by Thu; HW 2.8 by Sat
4. Feb. 12 –16	3.1, 3.2	Quiz 2, HW 3.1 by Tue; HW 3.2 by Thu
5. Feb. 19 – 23	Review for Exam 1, Trig review, 3.3	<b>Exam 1 Tuesday</b> , HW 3.3 by Thu
6. Feb. 26 - March 1	3.3, 3.4, 3.5	Quiz 3, HW 3.4 by Tue; HW 3.5 by Thu; HW 3.6 by Sat
7. March 4 – 8	3.6, 3.9, 3.10,	Quiz 4, HW 3.9 by Tue; HW 3.10 by Thu; HW 4.1 by Sat
8. March 11 – 15	4.1, <del>4.2</del> ,4.3	Quiz 5, HW 4.2 by Tue; HW 4.3 by Thu; HW 4.4 by Sat
<b>March 18 – 22</b>	4.3, 4.4,4.7	Quiz 6
9. March 25 – 29	4.7, 4.9, Review for Exam 2	<b>Exam 2 Thursday</b> , HW 4.7 by Tue; HW 4.9 by Thu
10. April 1 – 5	5.1, 5.2, 5.3	HW 5.1 by Tue; HW 5.2 by Thu; HW 5.3 by Sat
11. April 8 – 12	5.3, 5.4, 5.5	Quiz 6, HW 5.4 by Tue; HW 5.5 Part 1 by Thu, Part 2 by Sat Thanksgiving Break starts on Thursday
12. April 15 – 19	5.5, 6.1, 6.2	Quiz 7,  HW 6.1 by Tue; HW 6.2 by Wed
13. April 22 – 26	6.3, 6.5	Quiz 8, HW 6.3 by Tue; HW 6.5 by Thu
14. April 29 - May 3	7.1, Review	<b>Exam 3 on Thursday</b> , HW 7.1 by Tue
15. May 6 – 10	6.4, Review for Final	HW 6.4 by Tue
16. May 13 - 17		

**Final Exam: Monday, May 13 from 8:00 am – 10:00 am.**

## **List of Topics**

- ☐ **2.1: The Tangent and Velocity Problems**
- ☐ **2.2: The Limit of a Function**
- ☐ **2.3: Calculating Limits Using the Limit Laws**
- ☐ **2.5: Continuity**
- ☐ **2.6: Limits at Infinity; Horizontal Asymptotes**
- ☐ **2.7: Derivatives and Rates of Change**
- ☐ **2.8: The Derivative as a Function**
- ☐ **3.1: Derivatives of Polynomials and Exponential Functions**
- ☐ **3.2: The Product and Quotient Rules**
- ☐ **3.3: Derivatives of Trigonometric Functions**
- ☐ **3.4: The Chain Rule**
- ☐ **3.5: Implicit Differentiation**
- ☐ **3.6: Derivatives of Logarithmic Functions**
- ☐ **3.9: Related Rates**
- ☐ **3.10: Linear Approximation and Differentials**
- ☐ **4.1: Maximum and Minimum Values**
- ☐ **4.2: The Mean Value Theorem**
- ☐ **4.3: How Derivatives Affect the Shape of a Graph**
- ☐ **4.4: Indeterminate Forms and l'Hospital's Rule**
- ☐ **4.7: Optimization Problems**
- ☐ **4.8: Newton's Method**
- ☐ **4.9: Antiderivatives**
- ☐ **5.2: The Definite Integral**
- ☐ **5.3: The Fundamental Theorem of Calculus**
- ☐ **5.4: Indefinite Integrals and the Net Change Theorem**
- ☐ **5.5: The Substitution Rule**
- ☐ **6.1: Areas between Curves**
- ☐ **6.2: Volumes**
- ☐ **6.3: Volumes by Cylindrical Shell**
- ☐ **6.4: Work**
- ☐ **6.5: Average Value of a Function**
- 7.1: Integration by Parts**