MATH 225   CALCULUS I SPRING 2022
MW 11 - 11:50 am, TR 11:00 am – 12:15 pm

INSTRUCTOR: Dr. Kavita Bhatia   **OFFICE:** Room 207B

PHONE: 715-389-6548   **E-MAIL ADDRESS:** kbhatia@uwsp.edu

OFFICE HOURS: M, T, 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. All lectures will be recorded and recordings will be available on the course Canvas page. 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,* 8th 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	16%
Attendance and Participation	4%
Exams (3 x 20%)	60%
Final Exam	20%
Total	**100%**

The above distribution may change at the discretion of the instructor.

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 : Homework will be assigned at the end of every class period. You are expected to work on the assigned problems. Homework will be spot checked periodically.

QUIZZES: There will be a quiz most Thursday's. There will be NO make-up on the quizzes. The problems will be very similar to the homework problems. 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 5/16/2022, Monday 8 – 10 am.**

TUTORING-LEARNING CENTER (TLC): The Tutoring-Learning Center promotes and supports the academic environment by providing free, confidential, student-centered academic support. The TLC offers one-on-one tutoring services via Zoom, and one-on-one academic coaching appointments.
New this year: The DUO Center in Room 107 will offer tutoring for qualifying students, with professional tutors in Writing and Math.

Academic Coaching is available through the TLC. The Academic Coach partners with students to evaluate strengths and weaknesses, identify organizational skills and together work to develop tools to help students achieve academic success. Faculty can refer students, or students can seek help on their own.

For additional information please visit the [website] or contact Marie Janz, Academic Success Associate, Room 404, email [mjanz@uwsp.edu] or phone 715-898-6036.

ACCOMMODATION OF RELIGIOUS BELIEFS: Any student who cannot be present for a scheduled exam due to a religious observance will be provided with an alternative way of fulfilling that course requirement, provided the student notifies me ahead of time.

ACADEMIC MISCONDUCT: Academic integrity and honesty are central to the mission of this institution. All cases of academic misconduct will be treated according to the procedures laid out in UWS 14. UWS 14

allows for disciplinary sanctions that range from an oral reprimand to suspension or expulsion from the University. You can obtain a copy of the academic misconduct policy through the Student Services office.

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Face Coverings:
At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the Disability and Assistive Technology Center to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.
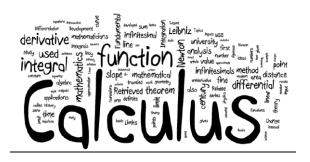
Other Guidance:
- Please monitor your own health each day using this screening tool. If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
  - As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.

Please maintain these same healthy practices outside the classroom

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This is a challenging course and requires serious effort on your part. I am available to help you whenever you need any help. Please do not wait to get help if you are having trouble. The only way to learn mathematics is by doing it. **So, work hard and do not fall behind.**
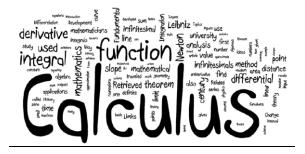
Do not worry about your difficulties in mathematics; I can assure you that mine are still greater.

Albert Einstein

Tentative Weekly Schedule – SPRING 2022

Week	Approximate text sections to discuss this week	Events this week
1. Jan. 24 – 27	Review	
2. Jan. 31 - Feb.3	2.1,2.2, 2.3	Quiz 1
3. Feb. 7– 10	2.5, 2.6, 2.7	Quiz 2
4. Feb. 14 – 18	2.8, 3.1, 3.2	Quiz 3
5. Feb. 21 – 24	Review for Exam 1, Trig review, 3.3	Exam 1 Tuesday
6. Feb. 28 **-** March 3	3.4, 3.5, 3.6	Quiz 4
7. March 7 – 10	3.9, 3.10, 4.1	Quiz 5
8. March 14 – 17	4.2, 4.3, 4.4	Quiz 6
March 21 – 25		***Spring Break, no classes this week***
9. March 28 – 31	4.7, 4.9, Review for Exam 2	Exam 2 Thursday
10. April 4 – 7	5.2, 5.3	Quiz 7
11. April 11 – 14	5.4, 5.5	Quiz 8
12. April 18 – 21	6.1, 6.2	Quiz 9
13. April 25 – 28	6.3, 6.4, 6.5	Quiz 10
14. May 2 – 5	Review	Exam 3 on Thursday,
15. May 9 – 12	7.1 Review	
16. May 16 - 20	FINALS week	Final Exam

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**