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Student Support Hours: Monday: 1100—1200, 1300—1350
 Tuesday: 1100—1200
 Wednesday: 1100—1200, 1300—1350
 Thursday: (none)
 Friday: 1100—1200
 (or by appointment)

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Course Description: This course is an introduction to calculus. The main concepts to be studied are limits, continuity, rates of change, derivatives, integrals and applications.

Prereq.: *At least Level 70 on the YSU Mathematics Placement Test or C or better in either MATH 1510 and MATH 1511, MATH 1510C and MATH 1511C, or MATH 1513.*

Course Materials: *Cengage Unlimited Subscription*

Course Objectives: The goals for the course include:

- Developing an understanding of the fundamental concepts and techniques of differential and integral calculus.
- Understanding the importance of differential and integral calculus in a variety of applications.
- Developing the ability to read mathematics with understanding and to write mathematics understandably.

Learning Outcomes and Tentative Course Schedule:

- Determine the existence of, estimate numerically and graphically and find algebraically the limits of functions. Recognize and determine infinite limits and limits at infinity and interpret them with respect to asymptotic behavior.
- Determine the continuity of functions at a point or on intervals and distinguish between the types of discontinuities at a point.
- Determine the derivative of a function using the limit definition and derivative theorems. Interpret the derivative as the slope of a tangent line to a graph, the slope of a graph at a point, and the rate of change of a dependent variable with respect to an independent variable.
- Determine the derivative and higher order derivatives of a function explicitly and implicitly and solve related rates problems.
- Determine absolute extrema on a closed interval for continuous functions and use the first and second derivatives to analyze and sketch the graph of a function, including determining intervals on which the graph is increasing, decreasing, constant, concave up or concave down and finding any relative extrema or inflection points. Appropriately use these techniques to solve optimization problems.
- Determine when the Mean Value Theorem can be applied and use it in proofs of other theorems.
- Use differentials and linear approximations to analyze applied problems.
- Determine antiderivatives, indefinite and definite integrals, use definite integrals to find areas of planar regions, use the Fundamental Theorems of Calculus, and integrate by substitution.
- For a complete list of learning outcomes, see <https://www.ohiohighered.org/transfer/transferrmodule/learningoutcomes>

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.

Section(s)	Tentative Week(s)	Topic(s)
1.1, 1.3 – 1.8	3	Functions and Limits
2.1 – 2.9	4	Derivatives
3.1 – 3.5, 3.7, 3.9	3.5	Applications of Differentiation
4.1 – 4.5	2	Integrals
5.1 – 5.5	2.5	Applications of Integration
Optional sections: 1.2, 3.6, 3.8		

Grading and Grading Scale:

Exams, quizzes, and special assignments will determine 75% of your grade. The remaining 25% of your grade will be determined by the final exam. Neither homework nor class attendance will be used to compute your grade except if you are auditing the course. If you are auditing the course, you must attend at least 40% of the time to receive the grade AU; otherwise you will receive the grade W.

While homework will not be used directly in the computation of your grade, it should not be inferred that doing homework is unnecessary. This is one of the best ways to learn calculus. Occasionally, homework may be collected in order to monitor your understanding of the material.

Partial credit will be given on most exams and quizzes. One exception to this is the final examination, which is in a multiple-choice format. The amount of credit given on a particular problem will depend upon the work you show. In some cases, if you do not show your work, full credit may not be given for a “correct answer” to a problem. Therefore, it is necessary that you show all work that is relevant to the problems you solve.

If you have a valid reason for missing an exam or quiz, you will be given a makeup. If possible, you should notify the instructor in advance of missing an exam to arrange to take a makeup.

On all exams and quizzes it is expected that you will do your own work and not copy from others. Failure to comply with this policy may result in losing a significant amount of credit and could result in being assigned a failing grade for the course.

Calculators. You may not use a calculator on any exam. However, you will be permitted to use them on quizzes. On quizzes you may use any scientific or graphing calculator that does not have symbolic capabilities. Calculators with symbolic capabilities include the following: TI-89, TI-92, HP28S, HP28SX, HP48G, HP48G+, HP48GX, and HP49G.

The following grading scale will be used.

90 – 100%	A
80 – 89%	B (at least)
70 – 79%	C (at least)
55 – 69%	D (at least)
Below 55%	F (at least)

Semester Dates:

Monday, January 9, 2023 – Term Begins

Monday, January 16, 2023 – Martin Luther King Day (University Closed)

Tuesday, January 17, 2023 – The last day to add a class or change the grade option

Sunday, January 22, 2023 – The last day to drop with a full refund

Monday, January 23, 2023 – First day to drop with a grade of “W”

Monday, March 6 – Sunday, March 12, 2023 – Spring Break

Wednesday, March 22, 2023 – The last day to drop the course with a grade of “W”

Monday, May 1 – Saturday, May 6, 2023 – Final Exams

Saturday, May 6, 2023 – Term Ends

Please refer to [this site](#) in the event of changes to semester dates.

Mathematics Achievement Center (MAC): The [Math Achievement Center](#) is an academic support service which is integrated with the Department of Mathematics & Statistics. Our mission is to assist YSU students in the strengthening of the fundamental mathematics skills which are necessary for success in the study of mathematics and to provide resource materials for independent study.

Location: Cafaro Hall Room 408 and Online

Email: mac@ysu.edu

Phone: (330)-941-3274

Visit our [website](#) to schedule an appointment and check for services available for your course.

Honors Contracts: Honors students may not contract this course for honors credit.

Blackboard: This class will be using the Learning Management System Blackboard. Blackboard can be accessed at: <https://ysu.blackboard.com/>. Here you will find a copy of this syllabus, assignments, notes, solutions, etc. You are required to regularly check Blackboard for documents.

Faculty Evaluations: At the end of the semester, you will be asked to evaluate the instructor and the course in general. We ask that you take these evaluations seriously and provide honest feedback as these are reviewed by the Chair of the Department of Mathematics and Statistics.

YSU Policies: [University policies](#) can be found online and provide you guidance on your rights as a student in this course. The links below take you directly to a specific policy. Should you have any questions about a policy, please do not hesitate to contact me using the information at the top of the syllabus.

- [Statement of Non-Discrimination from the University](#)
- [Academic Integrity/Honesty](#)
- [Student Accessibility](#)
 - In accordance with university procedures, if you have a documented disability and require accommodation to obtain equal access to this course, please contact me privately to discuss your specific needs. To coordinate reasonable accommodation, you must be registered with the Accessibility Services, located in Kilcawley Center Room 2082. You can reach Accessibility Services at 330-941-1372.
- [Incomplete Grade Policy](#)
- [Coronavirus Statement](#)

How to Get Help: YSU is committed to your success. As a student you have access to several resources that may be instrumental in helping you succeed in this course and others. Please do not hesitate to utilize any of these [free support services](#) to support your academic success, physical and mental health, and help you navigate your time as a YSU student.

Additional Resources:

- [The Penguin Service Center](#) - The Penguin Service Center is a single place to receive essential information, find guidance, and resolve enrollment-related concerns in the areas of financial aid, records and registration, and student billing. Call the Penguin Service Center at 330-941-6000 or visit their website to [Ask a Question](#).
- [University Counseling Services](#) - As a student, you may experience a variety of concerns that can impede your academic success. Such life stressors may lead to diminished academic performance or reduce your ability to participate fully in life. Services are available to assist you with addressing these and other concerns you may be experiencing. Contact the Student Counseling Services (330-941-3737) to learn more about the confidential mental health services available to our currently enrolled students.

- [College/University Career Advisement](#) - The academic advising staff at Youngstown State University assists undergraduate students in the development of meaningful educational plans while maintaining the integrity of the institutional programs and degrees. For any academic advising questions please [visit here](#) to be directed to your academic college.