Math 150 - Applied Calculus, Spring 2026
Course Syllabus

Instructor: Brian Leary
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Office: Learning Resource Center 323J
Office hours: Mon: 1-2, Tues: 11-12, Wed: 1-3, Thurs: 12-1, Fri: 11-12 (or by appointment)
Class Room/Time: INN-B 314, MTWF 10:00-10:50 am

Course website: community.wvu.edu/∼bal0018/math150S26.html (as a backup website, I will also try to keep the eCampus site updated)

Please be sure to regularly check the website and check the email address you have on record for any course announcements. You are responsible for any information posted on the course website.

Textbook: Calaway, Hoffman, Lippman, *Applied Calculus*, OpenTextBookStore, available to download for free at
http://www.opentextbookstore.com/appcalc/appcalc.pdf.

Catalog Data: MATH 150 Applied Calculus (3-1) Credits 3. For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima.
Prerequisite: MATH 124 or MATH 126 or MATH 129 with a grade of C- or better, or ACT math at least 26, or SAT math at least 610, or ALEKS math at least 65

Course Objective: This course is designed to give students in business and information systems the basic concepts of limits, continuity, differentiation and integration, including multivariable calculus.

Course Outcomes: Upon successful completion of the course, the student will be able to do the following:

1. Find the limit of a function of x as x tends to a.
2. Determine if a function is continuous and differentiable.
3. Differentiate algebraic, exponential, and logarithmic functions.
4. Solve maximum and minimum problems.
5. Use the derivative to sketch the graph of a function.
6. Find the antiderivative and integral of a function.
7. Find the area under a curve.
8. Find the partial derivative of a function of several variables.
9. Find the extrema of a function of several variables.

Topics:

1. Differential Calculus (12 days - Chapter 2)
   (a) Limits
   (b) Rates of Change
   (c) The Derivative
   (d) Marginal Analysis
   (e) Rules of Differentiation
   (f) Derivatives of exp/logs
   (g) Continuity and Differentiability
2. Applications of Derivatives (10 days - Chapter 2)
   (a) Maximum and Minimum Values
   (b) Second Derivative Test
   (c) Applied Max/Min Problems
   (d) Curve Sketching
3. Integral Calculus and Applications (15 days - Chapter 3)
   (a) Area and Definite Integral
   (b) Fundamental Theorem of Calculus
   (c) Antiderivatives
   (d) Integration by Substitution
   (e) Applications of Integrals
   (f) Integration Using Tables
4. Multivariable Calculus (7 days - Chapter 4)
   (a) Functions of Several Variables
   (b) Partial Derivatives
   (c) Unconstrained Minimization Problems
   (d) Constrained Min Problems & Lagrange Multipliers

Grading: Your final grade will be based on homework, quizzes, three exams during the semester, and the final exam. Your final course score will be the maximum of the following two grading schemes:

- 15% Homework + 5% Quizzes + 20% Exam 1 + 20% Exam 2 + 20% Exam 3 + 20% Final Exam
- 15% Homework + 5% Quizzes + 25% (highest grade of the four exams) + 25% (2nd grade of the four exams) + 5% (3rd grade of the four exams) + 25% Final Exam

Letter Grade Cutoffs: A: 90%, B: 80%, C: 70%, D: 60%, F: below 60%

Homework: Homework will be completed online with MyOpenMath.com. When you sign-up, you will use the Course ID and Enrollment Key given in class. Homework assignments will be due most Fridays at the beginning of class (10:00 am).
Note that most problems on the homework assignments may be resubmitted as often as needed until they are correct, so you should strive for a homework percentage near 100%! Furthermore, the only real point of the homework is for you to do it. The time you spend thinking, trying things, getting wrong answers, and (hopefully) getting right answers is the purpose of the homework. The exams are where your course grade will really be decided, and the homework is your training for the exams. Don't skip your training!

Exams: There will be three exams, tentatively scheduled for Friday, February 6; Friday, March 13; and Friday, April 10. These will be 50 minute exams taken during the regular lecture time. The final exam time will be set by the university, and is scheduled for Monday, May 4 from 10:00 am to 11:50 am. Make-up exams will only be given to students with excused absences, and such make-up exams must be scheduled within 24 hours of the missed exam.

Exam Retakes: Each student may retake each exam once to try to improve their score. However, for each problem on a retake exam, a student can only improve their score if they solve the problem at a passing level or better (70%). The student's exam score will then be the sum of the larger scores on each problem from the two attempts. Retakes MUST be scheduled with the instructor, typically 24 hours in advance. All retake attempts for an exam must be completed by the class period before the next exam.

Quizzes: There will be a quiz given on Fridays of most weeks in which there is no exam. This will be a very brief quiz given at the beginning of class, intended to test you with more immediacy than the exams and with less consequence. The problems that appear on the quiz will be taken from the homework problems I assign. Only your best 5 quizzes will count toward your grade, and there will be absolutely NO make-up quizzes.

Getting Help: Always remember: asking for help when you need it is not a sign of weakness, but a sign of strength! Please feel free to attend my office hours or email me if you have questions about the course material. If you are unable to make it to my regularly scheduled office hours, I am willing to make an appointment to meet at another time if possible. Free tutoring is also available through the Student Success Center, located in the library on the second floor of LRC. You may also qualify for TRIO SSS, located in Benedum 100, which also provides tutoring services. Additionally, for quick math questions, you can feel free to stop by the Math Department in LRC 323 and ask any math professor with an open door. Finally, I would also encourage the formation of study groups, to learn from each other and help each other learn.

Class policies:

- Graphing calculators will never be allowed during any exams. Scientific calculators will be considered on an exam by exam basis. You may use any calculator to help you do the homework if you wish, but you should keep in mind that you may be required to solve similar problems without a calculator on the quizzes and exams.
- While class attendance does not directly factor into your grade computation, attendance of each lecture is highly recommended. Regular attendance will tend to lead to better understanding of the course material, which tends to lead to better performance on exams.
- If you believe a problem on a homework assignment or midterm exam has been graded incorrectly, you must notify the instructor of your complaint within 7 days of the date the exam is handed back. If you are unable to retrieve your graded material at the time it is handed back, it is your responsibility to make arrangements with the instructor to retrieve the material at another time.

Institutional Policies: Students are responsible for reviewing policies on inclusivity, academic integrity, incompletes, sale of course materials, sexual misconduct, adverse weather, student evaluation of instruction, and other statements. For these detailed policies of West Virginia University, please review:
https://facultysenate.wvu.edu/resources/syllabus-policies-and-statements.

Figure 1: *
QR Code for Course Website

Figure 2: *
QR Code for MyOpenMath