Professor:	Dr. Chris Black
Office:	Bouillon Hall #122
Office Hours:	MWTh 2:00 - 3:00, TF 10:00 - 10:50, and whenever my office door is open
Office Phone:	×2602
Email :	`blackc@cwu.edu` *(It is most reliable to reach me via email)*

Required Text:	Gleason, McCallum, et al., *Calculus*, Hughes-Hallett. The course will cover selected material from Chapters 1, 2, 3 and 4.
Calculator:	A graphing calculator is required for class work and homework, but is not allowed to be used during tests.

Math 172 Learning Outcomes:

This course introduces students to the interpretations, techniques and applications of differentiation.

Upon completion of Math 172, students will be able to:

1. Investigate limits and continuity of functions;

2. Compute derivatives using the definition;

3. Differentiate a variety of functions using the basic differentiation rules;

4. Demonstrate conceptual understanding of the derivative of a function, including

    (a) graphical representation related to the slope of the tangent line,

    (b) numerical representation related to relative rates of change,

    (c) relationship with one-dimensional motion, and

    (d) modeling rate of change problems, including related rates.

5. Use first and second derivatives to

    (a) describe the behavior of curves,

    (b) solve optimization problems, and

    (c) create complete graphs of functions without using technology;

Course Philosophy:

Calculus is the study of how things change, and the entire course springs from the one simple idea of the derivative. While much of the class will revolve around computational techniques and formulas for computing derivatives, we will strive to develop conceptual understanding of this main idea, looking for ways to see how it applies in both later mathematics courses and courses in other disciplines for which this course is a prerequisite.

Many of the tasks that we will learn in this course can be accomplished using technology. However, I have found that reliance on technology detracts from understanding of the material. We will use graphing calculators sparingly to explore ideas, but we will not rely on them during tests.

Probable Course Topics:

- ▷ Continuity and limits
- ▷ The concept of a derivative
- ▷ Procedures for computing derivatives
- ▷ Applications of derivatives

Grading:

WebWork Assignments:	Scaled to 150 points total (18 of these)
In-Class Tests:	100 points each (3 of these)
Final Exam:	150 points
Participation & Citizenship:	25 points

Homework:

There are two types of homework in this course:

1. Odd-numbered problems will be assigned from the text, but not collected. You should work these problems, check the answers in the back of the text and seek help if needed. Only after this step should you proceed to the problems on WebWork.

2. Graded homework will be submitted and graded online through WebWork:

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   webwork.math.cwu.edu > WeBWorK Homework for Students > Math172Black
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   You will be given a login and password for WebWork which is *different from your CWU login and password.*

WebWork problems can be re-worked as many times as needed until the right answers are found, except for multiple choice problems which generally allow 5 attempts per problem. You can contact me for help if you're stuck by hitting the "Email Instructor" button on the problem. This will allow me to click through immediately to the exact question and help you to solve it. Recognize that email sent after 5:00 pm may not receive a response until the next weekday, so plan ahead.

WebWork problems are due at 11:59 pm on the date specified on the assignment sheet. These will be accepted for an additional 7 days for 50% credit.

Tests:

We will have three tests during the quarter, as specified on the course schedule. The tests will take the full period and are worth 100 points each. If you need to miss an exam for a school-sponsored event such as a field trip or participation in sports, a make up test will only be offered if arranged in advance. Otherwise, no make-up tests will be given unless you can provide documentation for an extenuating circumstance such as hospitalization or incarceration.

Final Exam:

The final exam is cumulative and MUST be taken during the officially designated time. The final exam will consist of three sections that roughly correlate to the material covered on the three tests. If it is in your favor, one (and only one) test score can be replaced by the scaled score on the corresponding section of the final exam. The final exam is worth 150 points.

PARTICIPATION & CITIZENSHIP:

You are expected to be awake, alert and attentive during class, and to participate in group or pair activities as they arise. This may include presenting your work to the class at the board or using the document camera. Citizenship addresses your behavior and comportment with class members and the instructor. We each need to be respectful of other students and differing ideas within our learning community.

HOW TO SUCCEED IN THIS COURSE:

Daily attendance is expected, and considered necessary for success. If you need to miss class for some reason, it is your responsibility to find out what occurred in class while you were absent, from either another student or the professor. You are responsible for any announcements made in class regarding assignments and tests, whether or not you are present.

During class, you are expected to be alert and engaged. We will often do individual or group work during class, which clarifies or strengthens your understanding of the material. You are expected to work cooperatively with others, and to possibly present your work to the class.

Daily homework will be assigned, both from the text and through the online system WebWork. Text-based assignements are expected to be completed, but will not be collected or graded. Problems assigned from WebWork will be graded as your homework score. *Just doing the WebWork problems is not enough to succeed in the course.*

All work handed in for the courses must be legibly written with correct mathematical notation and sufficient explanation that another student could follow your reasoning. A complete explanation is required to receive full credit on exams.

HONOR AND RESPECT:

Each of us should consider our placement at this institution to be a privilege. We need to have respect for one another, and for ourselves. In light of these facts, cheating in any form will not be tolerated. You are encouraged to work together on homework problems, however anything you turn in with your name on it should have been written by you alone. Any infractions may result in a zero for the assignment, a failing course grade, and the possibility of disciplinary action by the university.

DISABILITY SERVICES:

Students with special needs or disabilities who wish to set up academic adjustments in this class should provide me with a copy of the "Confirmation of Eligibility for Academic Adjustments" from the Center for Disability Services as soon as possible so we can discuss how the approved adjustments will be implemented in class. Students without this form should contact the Center for Disability Services, Bouillon 205, by calling 963-2171 or emailing dssrecept@cwu.edu.

I retain the right to change the policies contained in this syllabus as dictated by developments during the quarter.