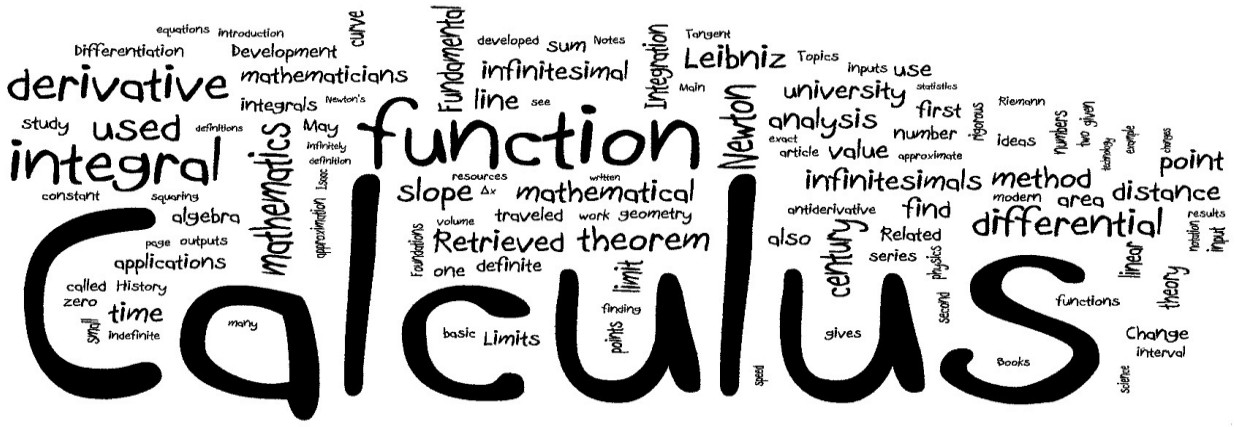

COURSE INFORMATION

MATH 1171 FB: Calculus I

Fall 2023

Lectures:	MWF	2:30 PM – 3:30 PM	Location: AT 2001
Lab:	F	4:30 PM - 5:30 PM	Location: AT 2001

Instructor Dr. Christopher Chlebovec
Office: RB 2007
Office Hours: W 1:00 PM – 2:00 PM,
or by appointment

Email cchlebov@lakeheadu.ca (the best way to contact me!)

Course Site

This course has an online D2L site, which you access through MyInfo, via *mycourselink* or directly using the link https://mycourselink.lakeheadu.ca.

All information with regards to this course can be found on D2L and should be checked regularly. Class notes and other information will be posted on D2L periodically. A skeleton of the lecture notes are uploaded to D2L and used concurrently with the lectures. To follow along during the lectures, it will benefit you if printed, copied or uploaded before class.

Textbook

This class will not have a textbook required to purchase. There is a wealth of textbooks and calculus resources available to you and many can be found in the LU library. Here are some suggested references:

Comprehensive Textbooks:

- *Calculus* by Stewart
- *Calculus by* Salas, Hille, Etgen
- *Calculus by* Thomas, Weir, Hass

Free online textbooks that can serve as a supplement to the class notes:

- Calculus Volume 1 by Edwin Herman, Gilbert Strang
  https://openstax.org/details/books/calculus-volume-1

- Apex Calculus, Version 3 by Gregory Hartman
  http://www.apexcalculus.com/downloads/

Course Description

This course will cover differential calculus and the beginning of integral calculus.

- Functions (definition, domain and range, representation of functions, piecewise functions, catalog of essential functions, symmetry, new functions from old ones, combining functions, composition of functions)

- Limits (intuitive definition, one-sided limits, infinite limits, limits laws, trigonometric limits, vertical and horizontal asymptotes, squeeze theorem, precise definition)

- Continuity (definition, types of continuous functions, types of discontinuities, intermediate value theorem)

- Derivatives (geometric and algebraic interpretation, differentiability and continuity, power rule, product rule, quotient rule, chain rule, implicit differentiation, higher derivatives, derivative formulas)

- Applications of Derivatives (extreme value theorem, mean value theorem, monotonicity and concavity, extrema, inflection points, first derivative test, second

derivative test, optimization problems, rate of change in life and social sciences, related rates, curve sketching)

- Integrals (definite integral, The Fundamental Theorem of Calculus, indefinite integrals, u-substution)

- Extra topics may be added, if time permits.

WeBWorK

WeBWorK is a free online homework system that will be required to complete the assignments. The link to access WeBWorK as well as login information will be provide to you on D2L.

Labs

The lab will also be used to facilitate your understanding of the material and it will be beneficial to attend. Concepts will be reinforced through explanations and examples. You will also have time to work through questions yourself so that you can test your understanding.

Class Policies

It is strongly recommended that you attend class. If you come to class, I would appreciate that you show up on time. Please turn off your phone on silent while in class. Midterms and exams must be taken on the date assigned. There will be no books, calculators, cell phones, or other aids allowed during the exams. Cell phones or other electronic devices are not allowed to be on your person during midterms and exams, per university policy.

Accommodations

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit: http://studentaccessibility.lakeheadu.ca

Evaluation

A. Assignments (10 %)

There will be weekly assignments posted on WeBWorK. ***Late assignments will not be accepted.***

B. Test I (25%)

Test I is tentatively scheduled on **Friday, October 20**, during the lab time.

C. Test II (25%)

Test II is tentatively scheduled on **Friday, November 17,** during the lab time.

D. Final Exam (40%)

The final exam will be a three hour cumulative exam. The date of the exam will be provided as soon as the university schedules it.