



## **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:

- Apex Calculus, Version 3 by Gregory Hartman  
<http://www.apexcalculus.com/downloads/>
- Calculus Volume 2 by Edwin Herman, Gilbert Strang  
<https://openstax.org/details/books/calculus-volume-2/>

## **Course Description**

Some important topics that will be covered include:

- Applications of Integration (area between curves, volumes, center of mass, Pappus's Theorem on Volumes, work, average value of a function)
- Inverse Functions (one-to-one functions and inverses, exponential, logarithmic, power and inverse trigonometric functions, hyperbolic functions)
- The Natural Exponential and Logarithmic Functions (properties, derivatives and integrals, logarithmic differentiation, exponential growth and decay)
- Indeterminate forms and l'Hospital's Rule
- Techniques of Integration (Integration by Parts, Trigonometric integrals, Trigonometric Substitution, Partial Fractions, Improper Integrals)
- Infinite Sequences and Series (sequences, limits of sequences, infinite series, tests for convergence, Power Series, Representation of Functions as Power Series, Taylor Series)

\*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.

## **Class Policies**

Be sure to click the “mute” button on Zoom, when the lecture is taking place, as background noise will be distracting. If you have a question throughout the class, you may ask it in the chat or by clicking the “Raise Hand” button.

## **Academic Integrity**

As per the Lakehead University Student Code of Conduct – Academic Integrity, students are required to act ethically and with integrity in academic matters and demonstrate behaviours that support the university's academic values.

In submitting your work (assignments, tests and exams) throughout the course, the following must apply. Otherwise, it will constitute a breach of academic integrity.

- o Completion of the work without the assistance of anyone;
- o Other than class notes, the online textbook (OpenStax- Calculus I) and a nonprogrammable calculator, no sources or materials (print, online, or otherwise) have been accessed in the completion of the work.
- o The assignments/examinations/lectures are protected by copyright. Reproduction or dissemination of these documents or the contents or format of this document in any manner whatsoever (e.g., sharing the content with other students or persons) is strictly prohibited and;
- o Unless otherwise allowed by the course instructor, and, in accordance with Section III: Violations of this Academic Integrity Code, providing any false or misleading information, or by accessing any outside assistance, constitutes a breach of academic integrity as outlined in Lakehead University's Academic Integrity and Policies.

## **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 for **February 16**, during the lab time.

### **C. Test II (25%)**

Test II is tentatively scheduled for **March 22**, 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 it is scheduled.

\*Dates may be changed. Advanced notice will be given if there are any date changes.

## **Important Dates**

First Day of Classes: Monday, January 8, 2024

Final Date to Register (Add): Friday, January 19, 2024

Winter Study Week: February 19, 2024 – February 23, 2024

Final Date for Withdrawal (Drop): Friday, March 8, 2024

Good Friday: Friday, March 29, 2024 (no classes)

Easter Monday: Monday, April 1, 2024 (no classes)

Final Day of Classes: Tuesday, April 9, 2024 (Apr 8 and Apr 9 make up days)

Examination Period: April 12 – 22, 2024 (11 days)

Examination Contingency Date: April 23, 2024