

Math 190: Calculus Survey

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Office Hours: TBD

My office: MATH 209

Class Hours: M/W/F 10-10:50 am

Class Room: Buchanan A202

<https://www.math.ubc.ca/~sasgarli/Math190.html>

Course Description

This is a 4-credit course designed to equip students in the Faculty of Forestry with quantitative skills through the knowledge of calculus. The course will start with a review of functions (such as function composition), continue with the elements of Differential Calculus, covering derivatives, techniques for finding derivatives, and related rates. After the midterm, we will cover Riemann sums, indefinite and definite integrals. Necessary precalculus concepts (such as trigonometry) will be reviewed as the course progresses.

Labs

This course comes with a weekly mandatory Lab meetings. Each student should register with one of the lab sections. The purpose of the labs is to reinforce your understanding of the subject through TA-driven examples, and ask questions about the course content. The lab also provides a medium to work in groups, and opportunity to collaborate effectively with other students. Each lab will be accompanied with two TAs.

Textbooks?

There is no required textbook for the course. However, it is recommended to have an access to some book on calculus. For example, *Calculus* by James Stewart is a popular option. There are also freely available options online:

- <http://www.math.ubc.ca/CLP/index.html>
- http://scidiv.bellevuecollege.edu/dh/Calculus_all/Calculus_all.html
- <https://www.whitman.edu/mathematics/calculus/calculus.pdf>

Learning Goals

Students are expected to learn the following concepts. The list is not exhaustive, but rather contains the essential topics necessary to succeed in the course.

1. Manipulating functions (such as function composition)
2. Trigonometric, exponential and logarithmic functions
3. Understanding limits and computing them in practice
4. Limit definition of derivative
5. Rules for derivatives (product rule, chain rule)
6. Related Rates (word problems)
7. Indefinite Integrals
8. Riemann Sums and Definite Integrals
9. Fundamental Theorem of Calculus, and its applications (finding area between curves).
10. Integration Techniques (integration by substitution, integration by parts)

Course Structure

Lectures and labs

Participation in class is highly recommended. While no formal attendance will be taken, you are strongly encouraged to come to every lecture. Furthermore, there will be in-class quizzes on some days, so you need to be present in class to take them. Participation in labs is mandatory.

Exams

There will be in-class midterm exam on **Monday, October 28**. The date and location for the final exam will be determined later.

Grading Scheme

Your final grade will count the assessments using the following proportions:

- 5% of your grade will be determined by labs (attendance and participation).
- 10% of your grade will be determined by in-class quizzes.
- 15% of your grade will be determined by homework.
- 20% of your grade will be determined by the Midterm.
- 50% of your grade will be determined by the Final Exam.

UBC's policies and resources to support student success

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available below:

<https://senate.ubc.ca/policies-resources-support-student-success>