

# MATH 105-951

Integral Calculus with Applications to Commerce and Social Sciences

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## COURSE INFORMATION

*Instructor:* Pam Sargent  
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*Lecture Times:* MThF: 1:00-3:00pm, W:1:00-2:00pm.  
*Room:* BUCH A201.

*Course Description.* Antiderivatives, the definite integral, techniques of integration, infinite series, partial derivatives, maxima and minima with constraints, discrete and continuous random variables.

## RESOURCES

*Webpage.* All homework assignments and announcements will be posted on the course webpage:  
[www.math.ubc.ca/~psargent/MATH105.html](http://www.math.ubc.ca/~psargent/MATH105.html)

*Office Hours.* Office hours will be held during the hour following each lecture. On Mondays, Wednesdays and Fridays they will be held in BUCH A201 (the lecture room), and on Thursdays they will be held in BUCH A204. There will also be an office hour every Tuesday from 2:00-3:00pm in LSK 300B. Additionally, you may also book an appointment over email.

*Piazza.* You are encouraged to post and answer questions on the online forum Piazza. There is a link to our course's Piazza board on the course webpage.

*Textbook.* The textbook for the course is *Calculus: Early Transcendentals*, Vol. 2, Fourth Custom Edition for UBC by Briggs, Cochran and Gillett. This textbook is available at the UBC Bookstore.

## ASSESSMENT

*Assignments.* There will be two types of assignments in this course: online WeBWorK assignments and written assignments.

There will be a short WeBWorK assignment assigned after each lecture, due an hour before the subsequent lecture, that focuses on the fundamental concepts and techniques from the lectures.

There will be 5 written assignments in this course. Each written assignment will assess your ability to connect concepts from the course and problem solve. Your solutions to the written assignments should be comprised of explanations written in plain English with mathematical notation, and you will be graded on the mathematical, logical and grammatical coherence of your explanations. The written assignments will

be at a more advanced level than the WeBWorK assignments and may take several days to complete. Each written assignment must be handed in at the beginning of class on the due date. Late assignments will not be graded.

You are encouraged to work together on your assignments, but your solutions to the written assignments must be written independently.

To succeed in this course, it is imperative that you do more than just the assigned work. It is essential that you master the basic concepts and techniques from the course by working through practice problems and reviewing your notes in between lectures.

*Midterm and exam.* There will be a 90-minute midterm test on July 20th at 1:00pm and a 150-minute final exam during the final exam period (August 15th - 19th).

Calculators are not permitted on tests and exams.

*Grade breakdown.* Your final grade in the course will be based on WeBWorK assignments (10%), written assignments (15%), the midterm test (25%) and the final exam (50%).

## TENTATIVE SCHEDULE

A tentative week-by-week schedule of topics may be found below. Here, HW refers to the written assignments.

Week	Dates	Topics	Notes
1	July 4-8	Approximating areas under curves, the definite integral, the Fundamental Theorem on Calculus, techniques of integration.	July 8th is the last day to withdraw without a 'W'.
2	July 11-15	Techniques of integration (cont'd), numerical integration, improper integrals, probability, introduction to differential equations.	HW #1 due July 13th.
3	July 18-22	Planes, surfaces, functions of multiple variables, graphs, level curves, partial derivatives, optimization problems.	Midterm July 20th, HW #2 due July 20th, last day to withdraw is July 22nd.
4	July 25-29	Constrained optimization problems, Lagrange multipliers, sequences, series, tests for convergence.	HW #3 due July 27th.
5	Aug. 1-5	Tests for convergence (cont'd), approximating functions with polynomials, power series, Taylor series.	No class Aug. 1st (BC day), HW #4 due Aug. 3rd.
6	Aug. 8-11	Taylor series (cont'd), working with Taylor series, review.	HW #5 due Aug. 10th, last day of classes is Aug. 11th.