

Effective: Fall 2024

**COURSE INFORMATION**

**Course Title:** Business Calculus I

**Course Number:** MATH 111

**Credits:** 3

**Total Weeks:** 14 (Fall, Spring)  
12 (Summer)      **Total Hours:** 39

**Course Level:**     First Year       Second Year  
 New                       Revised Course  
 Replacement Course

**Department:** Math / Statistics      **Department Head:** G. Belchev      **Former Course Code(s) and Number(s) (if applicable):** N/A

**Pre-requisites (If there are no prerequisites, type NONE):** PREC 12 minimum "B" or MATH 100 or MATH 120

**Co-requisite Statement (List if applicable or type NONE):** NONE

**Precluded Courses:** N/A

**COURSE DESCRIPTION**

This is a first course in calculus intended primarily for students in business and the social sciences. Topics include limits, growth rates, differentiation and integration, logarithmic and exponential functions and their application to economics and optimization.

**LEARNING OUTCOMES**

Upon successful completion of the course, students will be able to:

- Understand the concept of limit and being able to compute basic limits
- Differentiate algebraic and transcendental functions
- Sketch curves using derivatives, symmetry, and asymptotes
- Apply the derivative to solve word problems involving approximations, related rates, optimization, etc.
- Find elementary anti-derivatives

**INSTRUCTION AND GRADING**

Instructional (Contact) Hours:

Type	Duration
Lecture	39
Seminars/Tutorials	
Laboratory	
Field Experience	
Other ( <i>specify</i> ):	
Total	39

**Grading System:** Letter Grades  Percentage  Pass/Fail  Satisfactory/Unsatisfactory  Other

**Specify passing grade:** 50%

**Evaluation Activities and Weighting** (total must equal 100%)

Assignments: 10% <i>Weekly assignments through online platform</i>	Lab Work: %	Participation: %	Project: %
Quizzes/Test: %	Midterm Exam: 50% Midterm 1 (25%) Midterm 2 (25%)	Final Exam: 40%	Other: %

### TEXT(S) AND RESOURCE MATERIALS

Provide a full reference for each text and/or resource material and include whether required/not required.

Calculus Early Transcendentals: Differential & Multi-Variable Calculus for Social Sciences.

<https://www.sfu.ca/math-coursenotes/Math%20157%20Course%20Notes/book-1.html>

### COURSE TOPICS

List topics and sequence covered.

- **Functions Review**  
Linear, quadratic, polynomial, rational, exponential, logarithmic and trigonometric functions with some applications.
- **Differential Calculus**  
Limits, continuity, derivatives, rates of change, rules for calculating derivatives, derivatives of exponential, logarithmic and trigonometric functions, implicit differentiation, higher-order derivatives.
- **Applications of Differential Calculus**  
Curve sketching, optimization (including business applications), elasticity of demand, linear approximations, Newton's Method
- **Additional Topics**  
Anti-derivatives, exponential growth and decay, L'Hospital's Rule

### NOTES

1. Students are required to follow all College policies. Policies are available on the website at: [Coquitlam College Policies](#)
2. To find out how this course transfers, visit the BC Transfer Guide at: [bctransferguide.ca](http://bctransferguide.ca)

**Last Revised:** September 2024

**Last Reviewed:** September 2024