

Effective: Fall 2024

COURSE INFORMATION

Course Title: Business Calculus II

Course Number: MATH 112

Credits: 3

Total Weeks: 14 (Fall, Spring)
12 (Summer)

Total Hours: 39

Course Level: ☒ First Year ☐ Second Year
☐ New ☐ Revised Course
☐ Replacement Course

Department: Mathematics

Department Head: G. Belchev

Former Course Code(s) and Number(s) (if applicable): N/A

Pre-requisites (If there are no prerequisites, type NONE): MATH 111 or equivalent

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

Precluded Courses: N/A

COURSE DESCRIPTION

This course is a continuation of Math 111. Topics include the Fundamental Theorem of Calculus, applications of integration, an introduction to differential equations and multi-variable calculus.

LEARNING OUTCOMES

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

- Definition, interpretations and properties of the definite integral.
- Relation between definite integrals and anti-derivatives.
- Techniques for computing and approximating integrals.
- Applications of integrals.
- Functions of several variables.
- Geometric series, Taylor polynomials and Taylor series.

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: %	Lab Work: %	Participation: %	Project: %
Assignments/Quizzes 20%	Two Midterms (20% each) 40 %	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.

Lial, Greenwell & Ritchey, Calculus with Applications (11th Edition), Pearson Education. Student Solution Manual for odd problems (optional).

COURSE TOPICS

List topics and sequence covered.

Week	Topic
Week 1	Review of Derivatives, Anti-Derivatives
Week 2	Anti-Derivatives, Substitution
Week 3	Area and Definite Integral, Fundamental Theorem of Calculus, Total Change Theorem
Week 4	Area Between Curves, Consumers' & Producers' surplus, Numerical Integration
Week 5	Integration by Parts, Trigonometric Integrals MIDTERM 1
Week 6	Volume, Average Value of Functions, Continuous Money Flow
Week 7	Continuous Money Flow, Improper Integrals
Week 8	Functions of Several Variables, Partial Derivatives
Week 9	Maxima and Minima of Functions of Several Derivatives
Week 10	Double Integrals MIDTERM 2
Week 11	Double Integrals, Elementary and Separable Differential Equations; Separable and First Order Linear Differential Equations; Applications of Differential Equations
Week 12	Probability and Calculus, Sequences
Week 13	Geometric Series, Taylor Polynomials and Taylor Series
Week 14	FINAL EXAM

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

Last Revised: September 2024

Last Reviewed: September 2024