COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

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

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 (*specify):*	
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