COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

Effective: Fall 2024

COURSE INFORMATION

Course Title: Precalculus Algebra

Course Number: MATH 120

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): PREC 11 with grade of C or higher or equivalent

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

Precluded Courses: N/A

COURSE DESCRIPTION

A one-term pre-calculus course in algebra and analytic geometry necessary for studying the calculus of basic algebraic functions. It covers many but not all of the topics introduced at high school, with an emphasis on Grade 12 algebra. In particular, MATH 120 provides a thorough review of intermediate algebra, functions and graphing, as well as an introduction to the exponential and logarithmic functions and basic triangle and trigonometry. This course is not tied to the high school curriculum but is designed to be a fast-paced review of many topics encountered at high school. The material is covered in greater depth, with an emphasis on speed and proficiency of algebraic manipulation, problem-solving and practical applications. The objective is to upgrade existing knowledge to the level required for calculus.

LEARNING OUTCOMES

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

- Understand basic ideas of algebra: expressions, transforming expressions, equations.
- Demonstrate an understanding of the fundamental concept of a function and all of its properties (domain, range, composition, inverse etc.).
- Understand linear and quadratic functions, expressions for each and graphs for each. Use these functions for modeling. Solve linear and quadratic equations.
- Graph polynomial, absolute value, square root, rational, exponential and logarithmic functions. Shift and scale graphs of functions.
- Find zeroes of polynomials, be familiar with the fundamental theorem of algebra, and factor theorem
- Understand the concept of: exponential function and logarithmic function. Solve exponential and logarithmic equations and apply exponential and logarithmic equations to solve real world problems.
- Understand trigonometry in right angle tringle and solve applied problems using the basic trig functions.

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: 5% *Specify nature of participation:* Attendance	Project: %
Quizzes/Test: 25%	Midterm Exam: 30%	Final Exam: 30%	Other: 10% Worksheets

TEXT(S) AND RESOURCE MATERIALS

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

College Algebra, 10th edition, by Michael Sullivan.

COURSE TOPICS

List topics and sequence covered.

Week	Topic
Week 1	Real Numbers; Complex Numbers; Solving Equations; Solving Inequalities
Week 2	Introduction to Functions; Function Notations; Domain; Range; Evaluations on Functions
Week 3	Graphs of Functions; Properties of Functions
Week 4	Linear Functions and their Properties; Quadratic Functions and their Properties
Week 5	Polynomial Functions, and Graphs of Polynomial Functions
Week 6	Finding the Real Zeros of Polynomial Functions
Week 7	Factor Theorem and Remainder Theorem

	MIDTERM
Week 8	Rational Functions and their Graphs
Week 9	One-to-One Functions; Inverse Functions and their Graphs
Week 10	Exponential Functions, and their Graphs
Week 11	Logarithmic Functions, and their Graphs; Properties of Logarithms
Week 12	Solving Exponential and Logarithmic Equations
Week 13	Trigonometry
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