

# MATHEMATICS - ACADEMIC UPGRADING (MATH)

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## **MATH 0300 Upgrading Credits: 0**

### **Topics in Fundamental Math Total Hours: 156**

Math 0300 is a self paced and self directed mathematics review course of select learning outcomes from Math Levels 1-6. Students will create a portfolio to demonstrate learning in topics such as number sense, addition, subtraction, multiplication, division, decimal fractions, common fractions, ratio and/or percent.

**Pre-requisite(s):** Department approval required

## **MATH 0611 Upgrading Credits: 0**

### **Fundamentals of Mathematics 1 Total Hours: 156**

MATH 0611 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with whole numbers up to 100. Emphasis is placed on number sense, addition, subtraction, shapes, and time. This course is the first of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0621 Upgrading Credits: 0**

### **Fundamentals of Mathematics 2 Total Hours: 156**

MATH 0621 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with whole numbers up to 1,000,000. Emphasis is placed on number sense, addition, subtraction, multiplication facts, making change, time, and perimeter. This course is the second of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0631 Upgrading Credits: 0**

### **Fundamentals of Mathematics 3 Total Hours: 156**

MATH 0631 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with whole numbers up to 1,000,000. Emphasis is placed on number sense, multiplication, division, change, time, and the metric system. This course is the third of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0641 Upgrading Credits: 0**

### **Fundamentals of Mathematics 4 Total Hours: 156**

MATH 0641 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with decimal fractions. Emphasis is placed on number sense; addition, subtraction, multiplication, and division with decimal fractions; and converting measurements in the metric system. This course is the fourth of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0651 Upgrading Credits: 0**

### **Fundamentals of Mathematics 5 Total Hours: 156**

MATH 0651 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with common fractions. Emphasis is placed on understanding proper and improper fractions, mixed numbers, and equivalent fractions; adding, subtracting, multiplying and dividing fractions; and comparing common fractions and decimal fractions. This course is the fifth of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0660 Upgrading Credits: 0**

### **Fundamentals of Mathematics 6A Total Hours: 156**

MATH 0660 introduces students to skills, concepts, vocabulary, and problem-solving strategies for working with ratio, proportion, and percent. Topics include solving proportions and understanding the relationships between decimal fractions, common fractions, and percent. This course is the sixth of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals. Math 0660 and 0665 meet the required outcomes for ALF Mathematics Level 6 in the BC ABE Articulation Handbook 2022/2023 Edition: <https://www.bctransferguide.ca/wp-content/uploads/2022/08/abeguide2223.pdf>

**Pre-requisite(s):** Department approval required

## **MATH 0661 Upgrading Credits: 0**

### **Fundamentals of Mathematics 6 Total Hours: 156**

MATH 0661 introduces students to skills, concepts, vocabulary, and problem solving strategies for working with ratio, proportion, and percent. Emphasis is placed on solving proportions; understanding the relationships between decimal fractions, common fractions, and percent; applying these concepts to real world situations; and interpreting graphs and tables. This course is the sixth of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals.

**Pre-requisite(s):** MATH 0300

## **MATH 0665 Upgrading Credits: 0**

### **Fundamentals of Mathematics 6B Total Hours: 156**

MATH 0665 introduces students to skills, concepts, vocabulary, and problem-solving strategies for working with ratio, proportion, and percent. Topics include applying an understanding of percent to real world situations and interpreting graphs and tables. This course is part of the the sixth of six levels of Basic Education Mathematics and will prepare students to meet personal, career, or further academic goals. Math 0660 and 0665 meet the required outcomes for ALF Mathematics Level 6 in the BC ABE Articulation Handbook 2022/2023 Edition: <https://www.bctransferguide.ca/wp-content/uploads/2022/08/abeguide2223.pdf>

**Pre-requisite(s):** Department approval required

## **MATH 0750 Upgrading Credits: 4**

### **Math 10 Part 1 Total Hours: 96**

This course provides students the background foundation in basic math skills, including whole numbers, decimals, fractions, ratios and proportions, percent notation, graphs and statistics, metric measurement, basic algebra, and problem solving. Both MATH 0750 and MATH 0751 are required for completion of ABE Intermediate level Mathematics.

**Pre-requisite(s):** VCC MATH 0316 with a C-; or Basic Education Math Level 6; or Math 8 with a C-; or Math 9 with a C-; or Apprenticeship and Workplace Mathematics 10 with a C-; or 60% on the VCC Basic Arithmetic Assessment

**MATH 0751 Upgrading Credits: 4****Math 10 Part 2 Total Hours: 96**

This course provides students the background foundation in introductory algebra and geometry. It is particularly suitable for students who have not studied algebra before or who need to upgrade before taking Math 11. The algebra section includes: real numbers, equations, word problems, exponents, scientific notation, graphs of linear equations, data analysis, operations with polynomials, and simple factoring. The geometry section includes: a study of plane figures, basic constructions, angle relationships and measurements, parallel lines, congruent and similar triangles, Pythagoras' Theorem, and basic trigonometric ratios. Both MATH 0750 and MATH 0751 are required for completion of ABE Intermediate level Mathematics.

**Pre-requisite(s):** MATH 0750 with a C-; Math 9 with a C-; Apprenticeship and Workplace Math 10 with a C; or 80% on the Basic Arithmetic Assessment

**MATH 0861 Upgrading Credits: 4****Math 11 Part 1 Total Hours: 96**

Students are introduced to a review of basic algebra; solving linear equations and inequalities; graphing equations; functions and applications; system of equations; and trigonometry. Students use a scientific calculator to evaluate complex expressions with emphasis on using special keys to perform a variety of functions. Both MATH 0861 and MATH 0871 are required for ABE Advanced level Algebraic Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0751 with a C-; Foundations of Mathematics and Pre-calculus 10 with a C-, Foundations of Mathematics 11 with a C-; or 60% on the VCC Basic Algebra Assessment  
Prior Learning Assessment is available.

**MATH 0862 Upgrading Credits: 4****Foundations of Math 11 Part 1 Total Hours: 96**

Students will review basic skills in algebra, linear relations and systems of equations. Students will be able to solve problems in logical reasoning, rates, systems of inequalities and quadratics. Students will be able to look for patterns, make inferences, draw models, simplify problems, eliminate possibilities and develop alternative approaches to mathematical problems. Students will use a calculator to evaluate complex expressions using special keys to perform a variety of functions. Both MATH 0862 and MATH 0872 are required for ABE Advanced Level Foundations of Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0751, Foundations of Mathematics; or Pre-calculus 10 with a C-; or 60 % on the VCC Basic Algebra Assessment

**MATH 0863 Upgrading Credits: 4****Business/Tech Math 11 Part 1 Total Hours: 96**

The goal of Business/Technical Math 11 is to provide the student with practical applications useful in future vocational training, careers, or personal life. MATH 0863 - Part 1 is the first half of Business/Technical Math 11 and covers the core topics of: operations with real numbers, first degree equations and inequalities, and equations and their graphs. Both MATH 0863 - Part 1 and MATH 0873 - Part 2 must be successfully completed in order to earn a grade for Business/Technical Math 11.

**Pre-requisite(s):** VCC MATH 0751 with C-; or Apprenticeship and Workplace Mathematics 10 with a C; or 80% on the VCC Basic Arithmetic Assessment; or placement via College and Career Access Department Algebra 1 assessment

**MATH 0871 Upgrading Credits: 4****Math 11 Part 2 Total Hours: 96**

Students are introduced to polynomials and factoring; rational expressions and equations; variation; roots, radical expressions and equations; rational exponents and complex numbers; solving and graphing quadratic equations; and functions. Students use a scientific calculator to evaluate complex expressions with emphasis on using special keys to perform a variety of functions. Both MATH 0861 and MATH 0871 are required for completion of ABE Advanced level Algebraic Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0861 with a C-; or Foundations of Mathematics and Pre-calculus 10 with a C; or Foundations of Mathematics 11 with a C; or 52% on the VCC Intermediate Algebra Assessment  
Prior Learning Assessment is available.

**MATH 0872 Upgrading Credits: 4****Foundations of Math 11 Part 2 Total Hours: 96**

Students will solve problems in geometry, measurement, trigonometry and right angle triangles, statistics and financial math. Students will look for patterns, make inferences, draw scale diagrams of 2-D and 3-D shapes, simplify problems, eliminate possibilities and develop alternative approaches to mathematical problems. Students will evaluate complex mathematical expressions using a calculator or appropriate mathematical software Both MATH 0862 and MATH 0872 are required for ABE Advanced Level Foundations of Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0862 with a C-; or 52 % on the VCC Intermediate Algebra Assessment

**MATH 0873 Upgrading Credits: 4****Business/Tech Math 11 Part 2 Total Hours: 96**

MATH 0873 covers the optional topics students require in order to complete Business/Technical Math 11. Students must also successfully complete MATH 0863 in order to obtain a grade for Business/Technical Math 11. The optional topics include: consumer mathematics, financial mathematics, data analysis 1 and 2, geometry and trigonometry. Students must select three or more of the above topics.

**Pre-requisite(s):** MATH 0863 with C- or better

**MATH 0983 Upgrading Credits: 4****Math 12 Part 1 Total Hours: 96**

This course provides students with the algebra and trigonometry skills needed for entering post-secondary programs requiring Mathematics 12. Students are introduced to a review of advanced algebra concepts; equations and applied problems; complex numbers; relations, functions and transformations; linear and quadratic functions and inequalities; polynomial functions; exponential and logarithmic functions and their graphs. Both MATH 0983 and MATH 0993 are required for completion of ABE Provincial Level Algebra and Trigonometry Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0871 with a C-; or Pre-calculus 11 with a C-; or Foundations of Mathematics 12 with a C-; or 72% on the VCC Intermediate Algebra Assessment  
Prior Learning Assessment is available.

**MATH 0993 Upgrading Credits: 4****Math 12 Part 2 Total Hours: 96**

This course provides students with the algebra and trigonometry skills needed for entering post-secondary programs requiring Mathematics 12. Students are introduced to trigonometric functions and their inverses, graphs of circular functions, trigonometric identities and equations, solving triangles using sine and cosine laws, systems of equations, conic sections, sequences and series. Both MATH 0983 and MATH 0993 are required for completion of ABE Provincial Level Algebra and Trigonometry Mathematics. The use of a graphing calculator or other technology is optional.

**Pre-requisite(s):** VCC MATH 0983 with a C-; or Foundations of Mathematics 12 with a C  
Prior Learning Assessment is available.

**MATH 1054 Upgrading Credits: 0****Math for Health Sciences Total Hours: 30**

This is a non-credit math preparation course for health sciences programs, particularly for students entering Practical Nursing and Pharmacy Technician at VCC.

**Pre-requisite(s):** Math 10 or equivalent