Mathematics Grades 10-12

Required resources for Mathematics 10C, -1 levels, -2 levels, and Math 31: Students will need to supply a TI-84, T!-83, TI-84+, TI-84+C or TI Inspire calculator.

Required resources for Mathematics -3: Students will need to supply any scientific calculator.

Mathematics 15 (5 Credits) - Math 10C Preparation Course

To prepare for the transition to grade 10, students with basic or adequate achievement in Mathematics 9 may benefit from taking Math 15 prior to enrolling in Mathematics 10C.

Mathematics is a cumulative subject, which means that basic skills and concepts provide a foundation for more complex ones. This course aims to provide students with an opportunity to be successful in mathematics, reaching their full potential as engaged learners; students will learn and develop additional strategies, alternate approaches, and the resources necessary to prepare to enroll in Mathematics 10C.

Competencies in Math 15 will cover topics including number sense, logical reasoning, measurement, algebra, graphical reasoning, statistics and probability. The course will enhance numeracy skills in students, develop their critical thinking and problem-solving abilities, and set them up for success in future courses in mathematics.

The topics covered in the course are those which will best serve as a bridge between Grade 9 Math and Math 10C. Thus, some of the topics we cover will review grade nine concepts, while others will branch into the Math 10C curriculum in order to provide students with a foundation to enter grade 10.
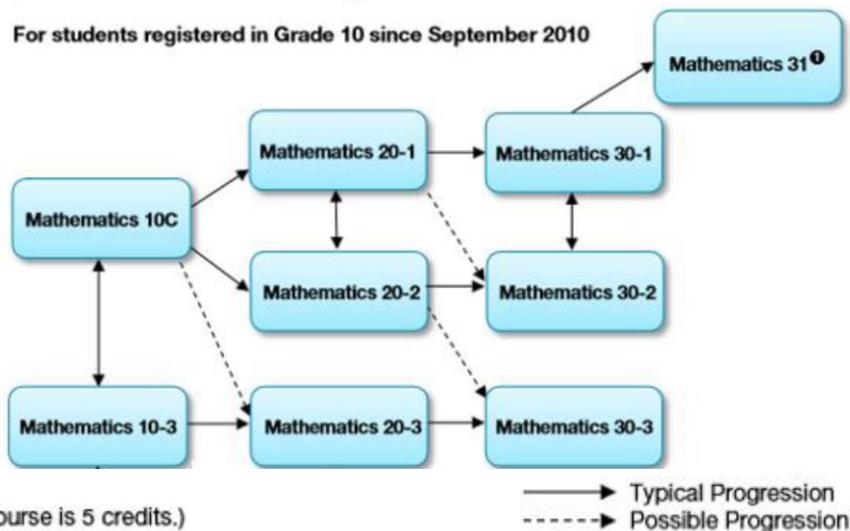
Mathematics
Grades 10-12

Mathematics Program
Possible Sequences—Mathematics Course Sequences

For students registered in Grade 10 since September 2010

(Each course is 5 credits.)

Typical Progression
Possible Progression

Mathematics 10C (5 Credits)

Provided Resources: Foundations and Pre-Calculus

Mathematics 10C students determine the surface area and volume of 3-D objects and use trigonometric ratios to solve problems involving right triangles. They simplify expressions that involve powers with integral and rational exponents and simplify or factor polynomial expressions. At this level, students also analyze linear relations, solve systems of linear equations and solve problems related to both of these sets of skills.

Mathematics 10-3 (5 Credits)

Provided Resources: Math Works 10

Mathematics 10-3 students solve linear and area measurement problems of 2-D shapes and 3-D objects using SI and imperial units. They use spatial reasoning to solve puzzles; solve problems involving right triangles and angles; solve unit pricing, currency exchange and income problems; and manipulate formulas to solve problems. They also use scale factors and parallel and perpendicular lines to solve problems.

Mathematics 20-1 (5 Credits)

Provided Resources: Pre-calculus 11 Workbook

Mathematics 20-1 students investigate arithmetic and geometric patterns and use the sine and cosine laws to solve problems involving triangles. They investigate the properties of radicals and rational expressions. Mathematics 20-1 students also analyze the characteristics of absolute value functions and quadratic functions, solve quadratic equations and systems of equations in various ways, and analyze the relationship between a function and its reciprocal.

Mathematics 20-2 (5 Credits)

Provided Resources: Principles of Mathematics 11

Mathematics 20-2 students use proportional reasoning to solve real-life problems involving 2-D shapes and 3-D objects. They use the properties of angles and triangles, including the sine and cosine laws, to solve problems; use reasoning to prove conjectures; use spatial reasoning to solve puzzles; and solve problems that involve radicals. They interpret statistical data, solve problems involving quadratics and research and present a mathematical topic of their choice.

Mathematics 20-3 (5 Credits)

Provided Resources: Math Works 11

Mathematics 20-3 students solve surface area, volume and capacity problems. They use primary trigonometry to solve problems involving two or three right triangles, and model and draw 3-D objects and their views to scale. They use numerical reasoning to solve puzzles; create and analyze personal budgets; use proportional reasoning, unit analysis and manipulation of formulas to solve problems; and create and interpret graphs. Students use their understanding of slope and rate of change to interpret graphs.

Mathematics 30-3 (5 Credits)

Provided Resources: Math Works 12

Mathematics 30-3 students investigate the limitations of measuring instruments, use trigonometry to solve problems involving triangles, and describe and illustrate properties of polygons. They investigate slides, rotations, flips and size changes of 2-D shapes or 3-D objects; they use logical reasoning to solve puzzles; and they solve various other problems involving financial situations, linear relations and probability.

Alberta Education Program of Studies for Math can be found at:
https://education.alberta.ca/media/564028/math10to12.pdf