

The Revised Alberta Grades 10–12 Mathematics Program of Studies

In September 2010, Alberta high schools will adopt a revised mathematics curriculum that better prepares students for their futures in the 21st century.¹ The revised program of studies (“program”) aligns with the revised K–9 mathematics curriculum both in content and philosophy.

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Guiding principles

Revisions to the high school mathematics curriculum are based on four guiding principles, which were developed from stakeholder feedback and validated by teachers. The four guiding principles are:

1. to improve the transition from Grade 9 to Grade 10 mathematics
2. to enhance students’ depth of understanding by reducing the number of mathematics topics included in each course
3. to increase students’ opportunities to transfer between course sequences
4. to develop programs that facilitate a better transition from high school to:
 - post-secondary programs that may require calculus
 - post-secondary programs that do not require calculus
 - college and technical school programs
 - apprenticeship programs
 - the workforce.

Philosophical approaches

The revised mathematics program for all Alberta K–12 students is based on the following philosophies in conceptual and contextual understanding.

Conceptual understanding: Focus is on students gaining depth of understanding in the mathematics they study.

- Content is reduced/realigned to allow for more in-depth study of concepts.
- Content is designed to enable students to make multiple connections between outcomes and topics.

¹ Dates for revised curriculum implementation are September 2010 for Grade 10 mathematics, September 2011 for Grade 11 mathematics and September 2012 for Grade 12 mathematics.

- Students will be able to demonstrate their understanding of outcomes in a variety of ways. Group and individual projects and writing assignments are some of the ways students may be asked to demonstrate their understanding of mathematical concepts.
- Personal strategies to find solutions are encouraged over traditional algorithms.

Contextual understanding: Focus is on relating the course content to everyday life.

- Content connects learning to real-world experiences.
- Students are encouraged to relate content to their everyday life experiences both inside and outside the classroom.
- Students can apply concepts in a variety of contexts.

Building blocks of the program

- The revised mathematics program in Alberta was developed through consultation and collaboration with education stakeholders. Those stakeholders include classroom teachers and school administrators, parents and representatives from post-secondary schools, businesses and industry.
- The revised mathematics program:
 - outlines the knowledge, skills and attitudes that will enhance a student’s ability to participate fully in society
 - is guided by goals and standards for education
 - is designed to provide students with a basic education that prepares them for employment and citizenship.

The revised Alberta Grades 10–12 mathematics program will better prepare Alberta students to succeed and thrive in their chosen careers and fields of study.

Course content highlights

The new mathematics course sequences follow a -1, -2 and -3 pattern.² The newly revised program also includes a combined Grade 10 mathematics course—[Mathematics 10C](#)—for students preparing to choose between either Mathematics 20-1 or 20-2 in Grade 11. Students may transfer between the -1 and -2 course sequence in both Grade 11 and Grade 12. Click [here](#) for more information. Mathematics 10-3 is designed for students pursuing the -3 course sequence.

² Note: Mathematics 10-4, 20-4 and 31 have not changed under the revised program and are still available for students.

Topics included

	10C		-3
Course audience	For students intending to take either -1 or -2.		For students pursuing many apprenticeship programs
Course topics	<ul style="list-style-type: none"> • Measurement (SI and Imperial) • Trigonometry • Polynomial factoring and operations • Systems of equations • Linear relations and functions 		<ul style="list-style-type: none"> • Measurement (SI and Imperial), tolerance of instruments • Trigonometry • Geometry, transformation on 2-D shapes and 3-D objects • Finance, credit options, buying and leasing small business options • Logical and proportional reasoning
	-1	-2	
Course audience	For students whose post-secondary studies may require the study of calculus	For students whose post-secondary studies do not require the study of calculus	
Course topics	<ul style="list-style-type: none"> • Systems of equations • Inequalities • Sequences and series • Trigonometry and trigonometric identities • Permutations and combinations • Binomial theorem • Relations, functions and equations: <ul style="list-style-type: none"> - absolute value - logarithmic - exponential - radical - rational - polynomial 	<ul style="list-style-type: none"> • Trigonometry • Statistics, normal distribution and confidence intervals • Probability • Geometry, proofs of conjectures • Logical reasoning, set theory • Relations, functions and equations: <ul style="list-style-type: none"> - logarithmic - exponential - rational - polynomial - sinusoidal 	

Click [here](#) for more information about the new mathematics sequences.

Progression through Course Sequences

