



Mathematics 20-1 (Pre-Calculus 11)

Teacher Contact Information

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Course Description

Mathematics is one way of understanding, interpreting and describing our world. It has application in the sciences, economics, business, engineering, medicine, the trades and daily life just to name a few areas. The main goals of mathematics education are to prepare students to:

- Solve problems and communicate and reason mathematically
- Make connections between mathematics and its applications
- Become mathematically literate and appreciate and value mathematics

Students who have met these goals will have gained an understanding and appreciation of the role of mathematics in society, exhibit a positive attitude toward mathematics and engage with and persevere in mathematical problem solving. In order to assist students in attaining these goals, teachers will provide opportunities for students to take risks, think independently, share and communicate their mathematical understanding and exhibit curiosity about mathematics and the disciplines broader applications to the real world.

In Mathematics 20-1 students will investigate the relationships between relations & functions, and engage in trigonometric topics; develop abstract reasoning and visualization in a problem-solving environment; prepare for post-secondary programs that require calculus.

Course Assessment

Competencies – The competencies listed below will be assessed as part of the outcomes shown in the next section.

Competency	Descriptor
Solve Problems and Think Critically and Creatively	Students use these competencies when they are faced with problems that do not have clear solution strategies or they are asked to complete non-routine tasks. Evidence of these competencies will be found in the following activities: daily tasks, quizzes, projects, exams, cumulative exams or challenges, etc.
Communicate Effectively	Clear and effective communication helps students to explain and justify their reasoning and problem solving when presenting mathematical solutions. Communication takes place verbally or in written form on various assessments (as listed above).

Outcomes

The specific outcomes from the Alberta Education Mathematics Grades 10 – 12 Program of Studies will account for 70% of each student's school awarded grade. The other 30% will come from Cumulative Exams. These outcomes (and the associated competencies) will be assessed using the Nelson Mandela Assessment Rubric. Teachers may use a variety of assessments including quizzes, assignments, projects, exams, and one-on-one conversations to provide multiple opportunities for students to demonstrate their understanding of each of the specific outcomes.

Units and Outcomes	
Nelson Mandela Outcomes	CBE Powershool Outcomes
<i>Algebra, Functions and Number</i>	
Radicals equations and Problem Solving with Radicals	AN2/AN2: Radicals (10%)
Rationals and Problem Solving with Rationals	AN4/5/6: Rationals (15%)
Absolute Values Operations and Functions	AN1/RF2: Absolute Value Functions (6%)
<i>Trigonometry</i>	
Angles, Trig Ratios and Laws	T1/T2: Standard Position (10%), T3: Cosine & Sine Laws (5%)
<i>Relations and Functions</i>	
Quadratic Functions and Problem Solving with Quadratic Functions	RF3/4: Quadratic Functions (12%)
Quadratic equations and Problem Solving with Quadratics	RF1: Factors (7.5%), RF5: Quadratic Equations (10%)
Inequalities	RF7/8: Inequalities (6%)
Reciprocal Functions	RF11: Reciprocal Functions (6%)
Sequences and Series	RF9/10: Sequences & Series (7.5%)
Systems of Equations	RF5: Systems of Equations (5%)

Note that the order of the outcomes listed above does not correspond to the order in which the topics will be taught in class. For more detailed information about the specific outcomes from the Mathematics Program of Studies, please follow the link: [Math 20-1 Program of Studies](#)

Course Materials and Resources

Students will have access to the Pre-Calculus 11 textbook and Absolute Value Workbook in class and will require lined and graph paper, pencils, and erasers. Students will also **require** an approved graphing calculator. We recommend the Texas Instruments TI-83+ or 84 or Casio 9750 GIII.

Please check with your teacher for more information.

Optional Resource: Students may *choose to purchase* the Absolute Value Pre-Calculus 11 Workbook from the school for a fee (this workbook is not required and students will still have access to the Pre-Calculus Textbook free of charge).

Plagiarism

When ideas are taken from other sources without giving credit, this is known as plagiarism. Plagiarism is the unacknowledged or unauthorized use of somebody else's words or ideas, **including AI-generated material**. We expect our students to act with academic integrity, and to use their own knowledge to demonstrate authentic learning. Student honesty and ethical behaviour is foundational to their schoolwork and in how they handle challenges. Our teachers support students' authentic and ethical learning through teaching when and how to cite resources.

When To Give Credit in Your Work

- When you are using or referring to somebody else's words or ideas from a magazine, book, newspaper, song, TV program, movie, web page, computer program, letter, advertisement, AI application or any other source.
- When you use information gained through interviewing another person.
- When you copy the exact words from somewhere.
- When you reprint any diagrams, illustrations, charts, and pictures.

Don't Need to Give Credit

- When you are writing your own experiences, your own observations, your own insights, your own thoughts, your own conclusions about a subject.
- When you are using common knowledge, common sense observations, or shared information.
- When you are using generally accepted facts.
- When you are writing up your own experimental results.

Academic Expectations

Students are expected to behave according to the CBE [Student Code of Conduct](#). Students who knowingly misrepresent the work of others as their own, or allow their work to be copied, act outside of the parameters of academic integrity. If this happens, we use [Progressive Student Discipline](#) so that teachers, parents, and school leaders can help students take responsibility for their learning to achieve their academic goals.

(<https://school.cbe.ab.ca/school/cbe-learn/teaching-learning/program-approach/academic-integrity/Pages/default.aspx>)