



Course: Pre-Calculus 11

Course Description:

Mathematics is a very important part of our technological society. Students require the ability to reason and communicate mathematically, to solve problems, and to understand and use mathematics. Skill in these areas creates a mathematically literate citizen. Pre-calculus 11 uses a wide variety of methods to solve real life, practical, technical and theoretical problems. It is expected that students will be able to solve problems involving content areas such as algebra, trigonometry, and geometry. Students will be expected to solve problems involving more than one content area, problems involving mathematics in other disciplines, analyze problems and identify significant elements, and to acquire skills which enable them to develop and select appropriate methods for problem solving.

Big Ideas:

- Algebra allows us to **generalize** relationships through abstract thinking.
- The meaning of, and **connections** between, operations extend to powers, radicals, and polynomials.
- Quadratic **relationships** are prevalent in the world around us.
- Trigonometry involves using **proportional reasoning** to solve **indirect measurement** problems.

Core Competencies:

Communication

- Connect and engage with others when group work involving problem solving is assigned.
- In doing project work, you will acquire, interpret, and present information orally.

Thinking

- Generate ideas and develop them when solving mathematical problems using several ways.
- Upon accumulating basic knowledge, you will reflect on that knowledge and use it to analyze, investigate and critique an application problem and then be able to solve it successfully.

Personal & Social

- Demonstrate self-determination and self-regulation when you work consistently throughout the semester, such as ensuring the assignments and homework are done in a timely manner.
- Solving problems in ways that are for peaceful and environmentally friendly endeavours.

Course Content:

	Topics Covered	Assignments
Week 1 – 2 Unit 1: Financial Literacy	Simple and Compound Interest	Quizzes In-Class Work Teacher-Student Meeting Test
Week 2 – 3 Unit 2: Roots and Powers	Square and Cube Roots, Radicals, Powers with Positive and Negative Rational Expressions, Exponent Laws	Quizzes Test



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Week 3 – 4 Unit 3: Radical Operations and Equations	Simplifying Radical Expressions: Adding, Subtracting, Multiplying and Dividing Radical Expressions, Solving Radical Expressions	Quizzes In-Class Work Teacher-Student Meeting Test
Week 4 – 5 Unit 4: Solving Quadratic Equations	Factoring Polynomial Expressions, Solving Quadratic Equations Using Various Methods	Quizzes In-Class Work Teacher-Student Meeting Test
Week 5 – 8 Unit 5: Analyzing Quadratic Functions and Inequalities	Properties of a Quadratic Function, Solving a Quadratic Function Graphically, Analyzing Quadratic Functions in Standard and General Form, Modeling with Quadratic Functions	Quizzes In-Class Work Teacher-Student Meeting Test
Week 8 – 10 Unit 6: Trigonometry	Angles in Standard Position, Co-Terminal Angels, the Sine and Cosine Laws	Quizzes In-Class Work Teacher-Student Meeting Test
Week 10 – 12 Unit 6: Rational Expressions and Equations	Equivalent Ratios Expressions: Multiplying, Dividing, Adding and Subtracting Rational Expressions	Quizzes In-Class Work Teacher-Student Meeting Test

Resources:

Pre-Calculus 11 MyWorkText, Pearson Canada Inc., G. Davie et al, 2011 Pearson Canada Inc. Publishers.

With respects to the First People's Principles of Learning, students may be alternatively assessed in ways that people can display knowledge and subject mastery. The alternative assessment can be storytelling, art or other expressions of self, knowing and learning.

- Connect mathematical concepts to each other and to other areas and personal interests.
- Engage in problem-solving experiences that are connected to local **First Peoples** communities, the local community, and other cultures.
- Incorporate **First Peoples** world views and perspectives to make connections to mathematical concepts.

Assessment:

Formative (30%)

Self-assessment

Core Competencies

Big Ideas

FPPL

Attendance, class participation

Summative (70%)

Test and Quizzes

(of Curricular Competencies)

Midterm Exam



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Homework, in-class assignments
Project/Presentation

Supplies Needed:

pen, pencil, loose leaf paper, graph paper, binder
scientific calculator (Optional: T1-83 graphing calculator)
geometry set (compass, protractor, set square)

Expectations: Attendance in the classroom is mandatory. Students are expected to use their electronics responsibly, speak English, and participate in daily activities. Students will take an active role by discussing, doing work, working in partners or groups, and taking notes. Students are responsible for any missed assignments.