



PATTISON HIGH SCHOOL

We don't teach a class, we teach individual students in a class

Pre-Calculus 11

Timothy Chan

Fall 2024

Basic Information

Email: timothy.chan@pattisonhighschool.ca
Location: Room 109
Session: 8:45am - 10:15am (Short: 8:45am - 10:00am)
Office Hour: 8:15am - 4:15pm

Course Description

The course is designed for students to learn specific algebra and trigonometry concepts as well as develop critical thinking skills desired for calculus and post-secondary studies in the sciences. Students are encouraged to evaluate and reflect on their own learning, evaluate other students' problem-solving methods, and apply this knowledge to real-world applications. They will also apply First People perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. Students will be required to demonstrate mathematical thinking both verbally and in writing.

Big Ideas

- Algebra allows us to generalize relationships through abstract thinking
- The meanings of, and connections between, each 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

Resources

Textbook: Pre-Calculus 11 my Worktext: BC Edition (Pearson)

Topics

Chapter	Content
1. Roots and Powers	Square Roots and Cube Roots of Fractions The Real Number System Mixed and Entire Radicals Powers with Positive Rational Exponents Powers with Negative Rational Exponents Exponent Laws and Order of Operations
2. Radical Operations and Equations	Simplifying Radical Expressions Adding and Subtracting Radical Expressions Multiplying and Dividing Radical Expressions Solving Radical Equations Graphically Solving Radical Equations Algebraically
3. Solving Quadratic Equations	Factoring Trinomials of the Form $ax^2 + bx + c$ Factoring Polynomial Expressions Solving Quadratic Equations by Factoring Using Square Roots to Solve Quadratic Equations Developing and Applying the Quadratic Formula Interpreting the Discriminant
4. Analyzing Quadratic Functions and Inequalities	Properties of a Quadratic Function Math Lab: Solving a Quadratic Equation Graphically Math Lab: Transforming the Graph of $y = x^2$ Analyzing Quadratic Functions of the Form $y = a(x - p)^2 + q$ Equivalent Forms of the Equation of Quadratic Function Analyzing Quadratic Functions of the Form $y = ax^2 + bx + c$ Modelling and Solving Problems with Quadratic Functions

	Solving Linear and Quadratic Inequalities Graphically Solving Linear and Quadratic Inequalities Algebraically
5. Trigonometry	Angles in Standard Position in Quadrant 1 Angles in Standard Position in All Quadrants Coterminal Angles Math Lab: Constructing Triangles The Sine Law The Cosine Law
6. Rational Expressions and Equations	Equivalent Rational Expressions Multiplying and Dividing Rational Expressions Adding and Subtracting Rational Expressions with Monomial Denominators Adding and Subtracting Rational Expressions with Binomial and Trinomial Denominators Solving Rational Equations Applications of Rational Equations
7. Financial Literacy	Simple Interest Compound Interest Math Lab: Comparing Simple Interest and Compound Interest Annuities: Investments and Loans Project: Buying or Leasing a Vehicle; Owning or Renting a Home

Expectations

Attendance

Students are expected to attend each class and notify the school if and when they have to be absent, giving a suitable reason for the absence.

Students should arrive at their classes on time and be prepared to study. They should not normally expect to leave the classroom near the beginning or end of class.

Clothing and Appearance

School clothing must be evident as the outer layer while in the classroom.

Body modification, in any of its forms, may not be suitable for the school

community and may require a return to an original presentation.

Electronic Devices

Students must turn off their cell phones during class, and put them in their locker.

Ear buds and headphones are prohibited in the classroom, unless specifically allowed.

Attitude

In order to succeed, it is important that students pay close attention in every class, attend and participate in all class activities, do all homework assignments on time, and bring materials to class such as a printed English language dictionary, a binder in which to keep notes and papers, and stationary.

Language

The use of the English language at all times when in the classroom.

Classroom Environment

It is important to keep the classroom clean and tidy. Other than water, no food or drink is permitted in the classroom.

Honesty

Students always present work that is their own, original work - and not the result of cheating or plagiarism; the course is founded upon the trust in academic honesty.

Evaluation

Course Work	Percentage
Homework	20%
Quizzes	20%
Midterm	20%
Final Exam	40%
Total	100%