

## Pre-Calculus 11 with Review Fall 2016

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This course is designed to meet the learning outcomes for the BC Pre-Calculus 11 curriculum. The content of this course is crucial to prepare the student for further studies in Mathematics.

**Academic Integrity:** In order to maintain a culture of academic integrity, all members are expected to promote honesty, trust, fairness, respect and responsibility.

**Academic Success:** Due to limited lecture time, the student is responsible to complete assigned homework and practice more questions from the textbook outside of lectures. The course content is not difficult, but practice is necessary to gain the skills needed to succeed in this course.

**Textbook:** The student should have access to a Pre-Calculus 11 textbook in addition to lecture notes. Such textbooks are available in many local libraries.

**Homework:** Homework assignments will be handed out approximately every week. The homework should be completed prior to the next class. Late submissions will result in the loss of learning opportunities of the student. You are encouraged to give each question your best shot. However, feel free to email me for help if you are still unable to solve the question. The student is suggested to practice more than doing the assigned homework by trying questions listed in the textbook.

**Quizzes:** There will be a quiz at the beginning of each class, based on the homework from the previous class. A minimum of 70% is needed for the student to continue onto the new material.

**Graphing calculators:** Graphing calculators are not required for any part of this course. However, you may choose to use one to assist your understanding. Feel free to ask me how to use a graphing calculator.

**Course website:** <http://www.sfu.ca/~tw73/math11/math11.html>

**Course outline:**

Chapter 0: Functions Review (Week 1)

- Variables, domain, and range
- Solving single variable, linear equations and inequalities
- Linear functions
- Cartesian coordinate
- Graphing linear functions

Chapter 1: Quadratic Functions (Week 2-3)

- Graphing quadratic functions by plotting points
- Function parameters
- Vertex form
- Introduction to derivatives
- Completing the square
- Factoring quadratic equations
- Solving quadratic equations

Chapter 2: Rational, Radical, and Absolute Value Expressions (Week 4-5)

- Fraction review
- Rational functions
- Radical expressions
- Absolute value review
- Functions with absolute values

### Chapter 3: Systems of Equations (Week 6)

- Solving systems of equations graphically
- Solving systems of equations algebraically
- Introduction to augmented matrices

### Chapter 4: Trigonometry (Week 7-8)

- Introduction to quadrants
- Trigonometry definition review
- Special triangles
- Trigonometric ratios
- Deriving the sine and cosine laws

### Chapter 5: Inequalities (Week 8-9)

- Linear inequalities review
- Introduction to the solution space
- Ugly linear inequalities
- Quadratic inequalities
- Ugly quadratic inequalities

### Chapter 6: Sequences and Series (Week 10)

- Arithmetic sequences
- Arithmetic series
- Geometric sequences
- Geometric series
- Infinite series