COQUITLAM OPEN Learning

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Online Flexible-Paced

Course Name	**Pre-Calculus 11, Flexible-Paced**
Teacher	Ms. Tiffany Tseng
Contact Information	ttseng@sd43.bc.ca **Cell Phone: 604-880-9273**
Location	Online
Course Site	http://sd43.knowplace.ca/course/view.php?id=430 (username/password required)
Course Resources	All course resources are on the course website. The following is also required for the course: - **Graphing Calculator** (ex. Texas Instruments TI-83 Plus)

Online Flexible-Paced –There are no scheduled classes in flex-paced courses. In a flex-paced course, a student has a maximum of 10 months to complete a course which means, students are not eligible to be enrolled in this course at any other school while completing the course with Coquitlam Open Learning. This is **not** an "at your own pace" course. You are given due dates and are required to submit assignments regularly as well as regularly communicating with the teacher and other online students. The 'flexibility' comes in the time of day and the location you work on the course.

The **aim of Pre-Calculus 11** is for students to use communication in order to learn and express their understanding, make connections among mathematical ideas, other concepts in math, everyday experiences and other disciplines, demonstrate fluency with mental math and estimation, develop and apply new mathematical knowledge through problem solving, develop mathematical reasoning, select and use technology as a tool for learning and solving problems, develop visualization skills to assist in processing information, making connections and solving problems.

Taken from:
http://www.bced.gov.bc.ca/irp/pdfs/mathematics/WNCPmath1012/2008math1012wncp_ccf.pdf

Pre-Calculus 11:

- ✓ Students will develop algebraic reasoning and number sense.
- ✓ Students will develop trigonometric reasoning.
- ✓ Students will develop algebraic and graphical reasoning through the study of relations

Taken from:
http://www.bced.gov.bc.ca/irp/pdfs/mathematics/WNCPmath1012/2008math1012wncp_ccf.pdf

Pre-Calculus 11 consists of **nine units** organized into **four modules**.

Areas of Study	**Modules**
▪ Unit 1: Absolute Value and Radicals ▪ Unit 2: Factoring Polynomials	**Module 1**
▪ Unit 3: Rational Expressions ▪ Unit 4: Quadratic Functions	**Module 2**
▪ Unit 5: Solving Quadratic Equations ▪ Unit 6: Solving Systems of Equations	**Module 3**
▪ Unit 7: Arithmetic & Geometric Sequences & Series ▪ Unit 8: Trigonometry ▪ Unit 9: Absolute Value & Reciprocal Functions	**Module 4**

Evaluation

Send In Assignments (9 Assignments)	35%
Tests (5 tests)	65%

Assignment Marks

There is a unit send in assignment at the end of each unit. You will also be able to check your assignment marks in Moodle. The criterion for grading is found on the course website along with the description for each assignment.

E-mail communications

Staying in touch is essential in an online course. I will be in contact with you via e-mail almost on a daily basis. Be sure to check your e-mail every day so as not to miss any important announcements.

Course Log On Information

To login to the course, you will need your Moodle ID and password. These are created and distributed on a yearly basis. I will distribute your login information via email. To access the course go to http://sd43.bcln.ca and click on Course Login.

Assignment Submissions

Please submit your assignments electronically in the course Moodle site. You will need to print a paper copy of the assignment, write down your work, and scan the assignments as a PDF, or as images inserted into a Word or a similar document. You will submit the assignment directly on the course Moodle site. If you need help with this please ask. With each assignment submission ***always include your full name in the document. Please name your scanned assignment as: Last Name_First Name__unit X assignment.***

Computer Requirements

You will need to have access to a computer from either school or home. A home computer is preferred as this will allow you greater flexibility when organizing your study time.

Windows PC and Macintosh minimum requirements:

- Windows 2000 or XP or MacOS X
- 64 MB RAM
- Internet connectivity
- Sound card and speakers
- Microsoft Office 2000 or XP or Microsoft Office X
- A printer

Computer Skills

Although I am available to help you it is recommended that you are able to:

- Use a scanner to scan your work as a PDF file or as images
- Insert scanned images into a Word document
- open applications

- send/receive e-mail
- send attachments in an e-mail
- save and locate files

If you need assistance in any of these areas, please contact me.

Plagiarism and Cheating

Any students that plagiarize any portion of an assignment will receive a zero and a possible comment on their report card. The problem will also be referred to administration. For your own protection, keep all drafts of all work until the end of the school year.

LETTER GRADES AND DEFINITIONS
A (86-100%) Excellent or Outstanding Performance in relation the learning outcomes.
B (73-85%) Very Good Performance in relation to learning outcomes.
C+ (67-72%) Good Performance in relation to learning outcomes.
C(60-66%) Satisfactory Performance in relation to learning outcomes.
C- (50-59%) Minimally Acceptable Performance in relation to learning outcomes.
I No demonstration of minimally acceptable performance in relation to learning outcomes in this reporting period.

FINAL LETTER GRADES
F No demonstration of minimally acceptable performance in relation to the learning outcomes for the course.
W Student has withdrawn from the course.
SG Standing Granted. Acceptable level of performance though normal requirements not completed.
TS Transfer Granted. Standing is granted based on records from an institution other than a school.

Pre-Calculus 11 Mark Breakdown

*****denotes what are needed for substantive assignment and refund***

Module	Unit	Topic	Lesson	Marks	% of course
Module 1	Unit 1 Absolute Value & Radicals	Real Numbers & Absolute Value	Lesson 1		
		Simplifying Radicals	Lesson 2		
		Adding & Subtracting Radicals	Lesson 3		
		Multiplying Radicals	Lesson 4		
		Dividing & Rationalizing Radicals	Lesson 5		
		Solving Radical Équations	Lesson 6		
		Unit 1 Send In Assignment	**Lessons 1-6**	**100**	3.89%
		Unit 1 Test	**Covers unit 1**	**100**	8%
	Unit 2 Factoring Polynomials	Common Factors	Lesson 1		
		Factoring Simple Trinomials	Lesson 2		
		Factoring Messy Trinomials	Lesson 3		
		Factoring Difference of Squares & Perfect Trinomial Squares	Lesson 4		
		Factoring by Substitution & Grouping	Lesson 5		
		Unit 2 Send In Assignment	**Lessons 1-5**	**100**	3.89%
		Unit 2 Test	**Covers unit 2**	**100**	7%
Module 2	Unit 3 Rational Expressions	Rational Expressions & Non-Permissible Values	Lesson 1		
		Simplifying Rational Expressions	Lesson 2		
		Multiplying & Dividing Rational Expressions	Lesson 3		
		Adding & Subtracting Rational Expressions	Lesson 4		
		Solving Rational Equations	Lesson 5		
		Solving Problems Involving Rational Expressions	Lesson 6		
		Unit 3 Send In Assignment	**Lessons 1 - 6**	**100**	3.89%
	Unit 4 Quadratic Functions	Quadratic Functions - Translations	Lesson 1		
		Quadratic Functions Expansions, Compressions	Lesson 2		
		Determining the Equation of Quadratic Functions	Lesson 3		
		Changing From General Form to Standard Form	Lesson 4		
		Unit 4 Send in Assignment	Lessons 1-4	100	3.89%

		Module 2 TEST	**Covers units 3 & 4**	100	16%
Module 3	Unit 5 Solving Quadratic Equations	Solving Quadratics by Factoring	Lesson 1		
		Solving Quadratics by the Square Root Principle	Lesson 2		
		Solving Quadratics Using the Quadratic Formula	Lesson 3		
		The Discriminant	Lesson 4		
		Unit 5 Send in Assignment	Lessons 1-4	100	3.89%
	Unit 6 Solving Systems of Equations	Graphing Linear Inequalities in Two Variables	Lesson 1		
		Solving Quadratic Inequalities	Lesson 2		
		Solving Linear-Quadratic Systems in Two Variables	Lesson 3		
		Solving Quadratic-Quadratic Systems in Two Variables	Lesson 4		
		Unit 6 Send in Assignment	Lessons 1 - 4	100	3.89%
		Module 3 TEST	**Covers unis 5 & 6**	100	15%
Module 4	Unit 7 Arithmetic & Geometric Sequences & Series	Arithmetic Sequences	Lesson 1		
		Arithmetic Series	Lesson 2		
		Geometric Sequences	Lesson 3		
		Geometric Series	Lesson 4		
		Infinite Geometric Series	Lesson 5		
		Unit 7 Send in Assignment	Lessons 1-5	100	3.89%
	Unit 8 Trigonometry	Angles in Standard Position	Lesson 1		
		Trig Ratios of Angles in Standard Position	Lesson 2		
		Exact Values Sine, Cosine, and Tangent of Special Angles	Lesson 3		
		Solving Conditional Trig Equations	Lesson 4		
		Deriving The Sine Law	Lesson 5		
		Ambiguous Case of the Sine Law	Lesson 6		
		The Cosine Law	Lesson 7		
		Unit 8 Send In Assignment	Lessons 1-7	100	3.89%
	Unit 9 Absolute Value & Reciprocal Functions	Absolute Value Functions	Lesson 1		
		Solving Absolute Value Equations	Lesson 2		
		Graphing Linear Reciprocal Functions	Lesson 3		
		Using Technology to Graph Reciprocal Quadratic Functions	Lesson 4		
		Graphing Reciprocal Quadratic Functions	Lesson 5		
		Unit 9 Send In Assignment	Lessons 1 - 5	100	3.89%

		Module 4 Test	**Covers Units 7, 8 and 9**	100	19%

You have 10 months from the date of registration to complete this course.
You must progress a minimum of 10% to be considered on track and up-to-date. At reporting times, grades will be given to students who are up-to-date. An "I" (incomplete/in progress) report will be given to any student not up-to-date. This is of particular importance for Grade 12 students submitting marks to PSIs. We report in November, January, April and June.

Math 11 Pre-Calculus
Prescribed Learning Outcomes

The following document is taken from:
http://www.bced.gov.bc.ca/irp/pdfs/mathematics/WNCPmath1012/2008math1012wncp_ccf.pdf

[C] Communication
[PS] Problem Solving
[CN] Connections
[R] Reasoning
[ME] Mental Mathematics
[T] Technology and Estimation
[V] Visualization

Algebra and Number

General Outcome: Develop algebraic reasoning and number sense

A1 Demonstrate an understanding of the absolute value of real numbers. [R, V]
A2 Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands. [CN, ME, PS, R, T]
A3 Solve problems that involve radical equations (limited to square roots). [C, PS, R]
A4 Determine equivalent forms of rational expressions (limited to numerators and denominators that are monomials, binomials or trinomials). [C, ME, R]
A5 Perform operations on rational expressions (limited to numerators and denominators that are monomials, binomials or trinomials). [CN, ME, R]
A6 Solve problems that involve rational equations (limited to numerators and denominators that are monomials, binomials or trinomials). [C, PS, R]

Trigonometry

General Outcome: Develop trigonometric reasoning

B1 Demonstrate an understanding of angles in standard position [0° to 360°]. [R, V]
B2 Solve problems, using the three primary trigonometric ratios for angles from 0° to 360° in standard position. [C, ME, PS, R, T, V]
B3 Solve problems, using the cosine law and sine law, including the ambiguous case. [C, CN, PS, R, T]

Relations and Functions

General Outcome: Develop algebraic and graphical reasoning through the study of relations

C1 Factor polynomial expressions of the form:
- $ax^2 + bx + c,\ a \neq 0$
- $a^2 x^2 - b^2 y^2,\ a \neq 0,\ b \neq 0$
- $a\,(f(x))^2 + b\,(f(x)) + c,\ a \neq 0$
- $a^2\,(f(x))^2 - b^2\,(g(y))^2,\ a \neq 0,\ b \neq 0$

where *a, b* and *c* are rational numbers. [CN, ME, R]

C2 Graph and analyze absolute value functions (limited to linear and quadratic functions) to solve problems. [C, PS, R, T, V]
C3 Analyze quadratic functions of the form $y=a(x-p)^2+q$ and determine the:
- vertex
- domain and range
- direction of opening
- axis of symmetry
- *x*- and *y*-intercepts. [CN, R, T, V]

C4 Analyze quadratic functions of the form $y = ax^2+bx+c$ to identify characteristics of the corresponding graph, including:
- vertex
- domain and range
- direction of opening
- axis of symmetry
- *x*- and *y*-intercepts

and to solve problems. [CN, PS, R, T, V]
C5 Solve problems that involve quadratic equations. [C, CN, PS, R, T, V]
C6 Solve, algebraically and graphically, problems that involve systems of linear-quadratic and quadratic-quadratic equations in two variables. [CN, PS, R, T, V]
C7 Solve problems that involve linear and quadratic inequalities in two variables. [C, PS, T, V]
C8 Solve problems that involve quadratic inequalities in one variable. [CN, PS, V]
C9 Analyze arithmetic sequences and series to solve problems. [CN, PS, R, T]
C10 Analyze geometric sequences and series to solve problems. [PS, R, T]
C11 Graph and analyze reciprocal functions (limited to the reciprocal of linear and quadratic

functions). [CN, R, T, V]