COQUITLAM OPEN Learning

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# Online Flexible-Paced

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| **Course Name** | **Foundations of Math & Pre-Calculus 10, Flexible-Paced** |
| **Teacher** | Ms. Tiffany Tseng |
| **Contact Information** | ttseng@sd43.bc.ca<br>**Cell Phone: 604-880-9273** |
| **Location** | Online |
| **Course Site** | http://sd43.knowplace.ca/login/index.php<br>(username/password required) |
| **Course Resources** | All are on the course website.<br><br>The following are also required for the course:<br><br>- Scientific calculator (*Please see the following website regarding the Ministry of Education's calculator policy: http://www.bced.gov.bc.ca/exams/calculators/*)<br><br>- Ruler with cm/mm and inches (1/16$^{th}$s)<br><br>- Protractor (see http://www.bced.gov.bc.ca/exams/specs/grade10/fmp/protractor.pdf for an example). |

**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 Foundations of Math & Pre-Calculus 10** 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/WNCPmath1012/2008math1012wncpccf.pdf

**Foundations of Math & Pre-Calculus 10**:

- ✓ Students will develop spatial sense and proportional reasoning.
- ✓ Students will develop algebraic reasoning and number sense.
- ✓ 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*

Foundations of Math & Pre-Calculus 10 Online consists of **eight units** organized into **four modules**:

| **Areas of Study** | **Modules** |
|---|---|
| ▪ Unit 1: Real Number System & Radicals<br>▪ Unit 2: Measurement | **Module 1** |
| ▪ Unit 3: Exponents<br>▪ Unit 4: Polynomials | **Module 2** |
| ▪ Unit 5: Relations and Functions<br>▪ Unit 6: Linear Relations | **Module 3** |
| ▪ Unit 7: Linear Systems<br>▪ Unit 8: Right Angled Trigonometry | **Module 4** |

## Evaluation

***Class Mark***

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|---|---|
| Send In Assignments (8 Assignments) | 45% |
| Module Tests (4 Module tests) | 55% |

Students are required to write a cumulative **Provincial Exam** for Foundations of Math and Pre-Calculus 10. It will be weighted as follows:

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|---|---|
| Class mark | 80% |
| Provincial Exam mark | 20% |

The date of the provincial exam is listed on the Ministry of Education website: http://www.bced.gov.bc.ca/exams/

There will also be access to the student's grades on the course Moodle site: http://sd43.bcln.ca. The student should check to ensure that all scores are correct and up-to-date

## 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.

## Foundations of Math & Pre-Calculus 10 Mark Breakdown

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

| Module | Unit | Topic | Lesson | Marks | % of course |
|---|---|---|---|---|---|
| Module 1 | Unit 1<br><br>Real Number System & Radicals | The Real Number System | Lesson 1 | | |
| | | Evaluating Irrational Numbers | Lesson 2 | | |
| | | Simplifying Radicals | Lesson 3 | | |
| | | Adding and Subtracting Radicals | Lesson 4 | | |
| | | Multiplying and Dividing Radicals | Lesson 5 | | |
| | | **Unit 1 Send In Assignment** | **Lessons 1-5** | **100** | 5.625% |
| | | | | | |
| | | **Unit 1 TEST** | **Covers unit 1** | **100** | 7% |
| | | | | | |
| | Unit 2<br><br>Measurement | Imperial Measures of Length | Lesson 1 | | |
| | | Relating SI & Imperial Units | Lesson 2 | | |
| | | Surface Area of Right Pyramids and Right Cones | Lesson 3 | | |
| | | Volumes of Right Pyramids & Right Cones | Lesson 4 | | |
| | | Surface Area & Volume of Spheres | Lesson 5 | | |
| | | Solving Problems Involving Objects | Lesson 6 | | |
| | | **Unit 2 Send In Assignment** | **Lessons 1-6** | **100** | 5.625% |
| | | | | | |
| | | **Unit 2 TEST** | **Covers unit 2** | **100** | 7% |
| Module 2 | Unit 3<br><br>Exponents | Multiplying & Dividing Terms with Exponents | Lesson 1 | | |
| | | Evaluating & Simplifying with Positive & Negative Exponents | Lesson 2 | | |
| | | Rational Exponents | Lesson 3 | | |
| | | Applications of Exponential Laws | Lesson 4 | | |
| | | Unit 3 Send In assignment | Lessons 1-4 | 100 | 5.625% |
| | | | | | |
| | Unit 4 Polynomials | Simplifying Polynomials | Lesson 1 | | |
| | | Expanding Polynomials | Lesson 2 | | |
| | | Expanding Special Polynomials | Lesson 3 | | |
| | | Factoring Polynomials | Lesson 4 | | |
| | | Factoring Simple Trinomials | Lesson 5 | | |
| | | Factoring Messy Trinomials | Lesson 6 | | |
| | | Factoring a Difference of Squares | Lesson 7 | | |
| | | Unit 4 Send in assignment | Lessons 1-7 | 100 | 5.625% |
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| | | **Module 2 TEST** | **Covers units 3 & 4** | 100 | 14% |

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| Module 3 | Unit 5<br><br>Relations and Functions | Information from Graphs | Lesson 1 | | |
| | | Relations, Functions, Domain & Range | Lesson 2 | | |
| | | Graphs of Relations, Functions, Domain & Range | Lesson 3 | | |
| | | Graphing Linear Functions | Lesson 4 | | |
| | | Function Notation | Lesson 5 | | |
| | | Unit 5 Send in Assignment | Lessons 1-5 | 100 | 5.625% |
| | | | | | |
| | Unit 6 Linear Relations | Slope | Lesson 1 | | |
| | | Linear Functions in Slope-Intercept Form | Lesson 2 | | |
| | | Parallel & Perpendicular Lines | Lesson 3 | | |
| | | Finding Equations of Linear Functions | Lesson 4 | | |
| | | Intercepts and Finding Equations | Lesson 5 | | |
| | | Unit 6 Send in Assignment | Lessons 1-5 | 100 | 5.625% |
| | | | | | |
| | | **Module 3 TEST** | **Covers unis 5 & 6** | 100 | 14% |
| | | | | | |
| Module 4 | Unit 7 Linear Systems | Solving Linear Systems by Graphing | Lesson 1 | | |
| | | Solving Linear Systems by Elimination | Lesson 2 | | |
| | | Solving Linear Systems by Substitution | Lesson 3 | | |
| | | Unit 7 Send in Assignment | Lessons 1-3 | 100 | 5.625% |
| | | | | | |
| | Unit 8 Right Angled Trigonometry | Tangent Ratio | Lesson 1 | | |
| | | The Sine Ratio | Lesson 2 | | |
| | | The Cosine Ratio | Lesson 3 | | |
| | | Using Trigonometry to Solve Right Triangles | Lesson 4 | | |
| | | Unit 8 Send In Assignment | Lessons 1-4 | 100 | 5.625% |
| | | | | | |
| | | **Module 4 TEST** | **Covers units 7 & 8** | 100 | 13% |

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.

**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.

# Foundations of Mathematics and Pre-calculus10
## Prescribed Learning Outcomes

*The following document is taken from*
*http://www.bced.gov.bc.ca/irp/pdfs/mathematics/WNCPmath1012/2008math_foundations_precalc10.pdf*

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

## Measurement

General Outcome: Develop spatial sense and proportional reasoning.

Specific Outcomes:

A1. Solve problems that involve linear measurement, using:
- SI and imperial units of measure
- estimation strategies
- measurement strategies

[ME, PS, V]

A2. Apply proportional reasoning to problems that involve conversions between SI and imperial units of measure.
[C, ME, PS]

A3. Solve problems, using SI and imperial units, that involve the surface area and volume of 3-D objects, including:
- right cones
- right cylinders
- right prisms
- right pyramids
- spheres

[CN, PS, R, V]

A4. Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles.
[C, CN, PS, R, T, V]

## Algebra and Number

General Outcome: Develop algebraic reasoning and number sense.

Specific Outcomes:

B1. Demonstrate an understanding of factors of whole numbers by determining the:
- prime factors
- greatest common factor
- least common multiple
- square root
- cube root

[CN, ME, R]

B2. Demonstrate an understanding of irrational numbers by:
- representing, identifying and simplifying irrational numbers
- ordering irrational numbers

[CN, ME, R, V]

B3. Demonstrate and understanding of powers with integral and rational exponents
[C, CN, PS, R]

B4. Demonstrate an understanding of multiplication of polynomial expressions (limited to monomials, binomials and trinomials), concretely, pictorially and symbolically.
[CN, R, V]

B5. Demonstrate an understanding of common factors and trinomial factoring, concretely, pictorially and symbolically.
[C, CN, R, V]

## Relations and Functions

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

Specific Outcomes:

C1. Interpret and explain the relationships among data, graphs and situations.
[C, CN, R, T, V]

C2. Demonstrate an understanding of relations and functions.
[C, R, V]

C3. Demonstrate and understanding of slope with respect to:
- rise and run
- line segments and lines
- rate of change
- parallel lines
- perpendicular lines

[PS, R, V]

C4. Describe and represent linear relations, using:
- words,
- ordered pairs
- tale of values
- graphs
- equations

[C, CN, R, V]

C5. Determine the characteristics of the graphs of linear relations, including the:
- intercepts
- slope
- domain
- range

[CN, PS, R, V]

C6. Relate linear relations express in:
- slope-intercept form ($y = mx + b$)
- general form ( $Ax + By + C = 0$)
- slope – point form ($y - y_1 = m(x - x_1)$)

to their graphs.
[CN, R, T, V]

C7. Determine the equation of a linear relation, given:
- a graph
- a point and the slope
- two points

- a point and the equation of a parallel or perpendicular line

to solve problems.

[CN, PS, R, V]

C8. Represent a linear function, using function notation.

[CN, ME, V]

C9. Solve problems that involve systems of linear equations in two variables, graphically and algebraically.

[CN, PS, R, T, V]

For a list of curriculum outcomes, please visit the Ministry of Education website: http://www.bced.gov.bc.ca/irp/