

# Math 10 common – Foundations of Math and Pre-calculus

## Course outline

Peace River High School 2011-2012 (Semester-1)

**Instructor: Mrs. R Castelino**

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### Welcome to Math 10 Common!

#### General Objectives

(As per Alberta Program of Studies)

Upon completion of this course, students will:

- Gain an understanding and appreciation of the role of mathematics in society
- Exhibit a positive attitude toward mathematics
- Engage and persevere in mathematical problem solving.
- Contribute to mathematical discussions.
- Take risks in performing mathematical tasks.
- Exhibit curiosity about mathematics and situations involving mathematics.

#### Course Materials

- ◆ Textbook- Foundations and Pre-calculus Mathematics 10, Pearson
- ◆ Notes and worksheets handed out in the class
- ◆ Graphing calculator; every student is asked to buy a **Texas Instrument TI-83+ Graphing Calculator**. This is the calculator that will be used for demonstrations and exercises in this course as well as in Grade 11 Math.
- ◆ Binder with lined paper & 0.5 cm. graph paper
- ◆ Geometry Set
- ◆ Pencils and erasers as well as pens

#### General Expectations; Requirements for Success in Math 10C

- **Attendance** is one of the most important factors for academic success. It is expected that you come to class every day on time with the materials you require for class. **All notes, handouts and assignments missed due to absence are your responsibility.** Please make arrangements with your teacher or with a classmate to obtain missed materials.
- If you miss a test due to an excused absence, you may write the test in class on your first day back. A note from your parents and/or guardians excusing the absence will be required.
- **All exercises and assignment** are due at the **beginning of class; on or before the due date.** Class time will frequently be given to work on assignments. It is expected that you will stay on task during these times. Mature and considerate behaviour is expected in class.
- **Be sure to ask questions to clarify concepts.** Please make an appointment with your teacher to ensure you get the help you need.

**Course outcomes:**

- Develop spatial sense and proportional reasoning
- Develop algebraic reasoning and number sense
- Develop algebraic and graphical reasoning through the study of relations

**As per the Alberta Grade 10C Mathematics Program of Studies, the following learning outcomes will be covered in this course.**

**1. Algebra and Number:**

- Determine the prime factors of a whole number
- Determine, using a variety of strategies, the greatest common factor or least common multiples of a set of whole numbers, and explain the process
- Determine, concretely, whether a given whole number is a perfect square, a perfect cube or neither
- Solve problems that involve prime factors, GCF, LCM, Square roots and cube roots.
- Sort set of numbers into rational and irrational numbers and determine the approximate value of a given irrational number
- Express a radical as a mixed radical and vice-versa
- Represent, using a graphic organizer, the relationship among the subsets of the real numbers
- Demonstrate an understanding of powers with integral and rational exponents

**2. Measurement:**

- Solve problems that involve linear measurement that involve linear measurement using SI and imperial units of measure, estimation strategies, measurement strategies
- Apply proportional reasoning to problems that involve conversions between SI and imperial units of measure
- Solve problems, using SI and imperial units, that involve the surface area and volume of 3-D objects including right cone, right cylinders, right prisms, right pyramids, spheres
- Develop and apply the primary trigonometric ratios (Sine, Cosine, tangent) to solve problems that involve right triangles.

**3. Relations and Functions:**

- Interpret and explain the relationships among data, graphs and situations
- Demonstrate an understanding of relations and functions
- Demonstrate an understanding of slope with respect to rise and run, line segments and lines, rate of change, parallel lines, and perpendicular lines.
- Describe and represent linear relations using: words, ordered pairs, tables of values, graphs, equations
- Determine the characteristics of the graphs of linear relations including: intercepts, slope, domain, range.
- Relate linear relations expressed in :  $y = mx + b$ ,  $Ax + By + C = 0$ ,  $y - y_1 = m(x - x_1)$

- Determine the equation of a linear relation, given: a graph, a point and slope, two points, a point and the equation of a parallel or perpendicular line to solve problems
- Represent a linear function, using function notation
- Solve problems that involve systems of linear equations in two variables, graphically and algebraically.

**Course Schedule:**

Strand	Chapter(s)	Timeline
Algebra and Numbers	Factors and products (Chapter 3)	Sep 1- Sep 21
	Roots and powers (Chapter 4)	Sep 22 -Oct 6
Measurement	Measurement (chapter 1)	Oct 11 - Oct 26
	Trigonometry (Chapter 2)	Oct 27 -Nov 14
Relations and Numbers	Relations and Functions(chapter 5)	Nov 15 -Nov 30
	Linear Functions (Chapter 6)	Dec 1-Dec 15
	Systems of Linear Equations(Chapter 7)	Dec 16 - Jan 16

**Review: Jan 17<sup>th</sup> - Jan 19<sup>th</sup>**

**Note:** The above dates are a rough estimate of the timeline. It may change according to the needs of the class.

★ Alberta Program of Studies will be followed for each topic throughout the course.



## Assessment & Evaluation

Evaluation (per unit)		Course Evaluation	
Outcome based tests/Quizzes/Assignments		Algebra and Numbers	20%
	65%	Measurement	20%
		Relations and Functions	30%
Unit Tests	35%	Midterm Exam	5%
		Final Exam	25%
			<b>Total: 100%</b>

Besides a daily demonstration of a willingness to participate in class activities and exercises, the student who attends regularly and shows a consistent, conscientious effort towards the course material will do well here.

**Outcome based tests/Quizzes and Assignments:** Each chapter consists of various learning outcomes. Achievement indicators will be used to determine whether students have met the corresponding specific outcomes. Quizzes are always completed in class. Assignments will be given in class and may be completed for homework.

**Unit Exams:** These will occur at the completion of each unit.

**Midterm and Final Exams:** The midterm will take place during the first week of November (tentative date: 10-11-2011) and will cover material learned up until this point. The final exam will take place during the scheduled final exam week at the end of June and will cover material from the entire course.

**Extra Help:** Be sure to ask questions to clarify concepts. Please do not hesitate to make an appointment with your teacher to obtain any extra help you may need throughout the course. After school, before school and/or lunch hour tutorials will be available upon request.



**For Parents/Guardians:**

Please indicate that you have reviewed this outline and understand the course your child is taking by signing the portion below and returning this outline with your child. If you have any questions or concerns, Please feel free to contact me at [castelir@prsd.ab.ca](mailto:castelir@prsd.ab.ca) Thank you.

**Student's Name:** \_\_\_\_\_

**Parent/Guardian Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Parent/Guardian Email:** \_\_\_\_\_

**Preferred method of Contact**(circle): Email or Phone

If the phone is preferred method of contact, please indicate the preferred times and number:

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