PreCalculus Math 12 **Mrs. Buck**
Course Outline **2012-13**

Learning Outcomes:
A1 Standard position angles - Demonstrate an understanding of angles in standard position, expressed in degrees and radians.
A2 Unit circle - Develop and apply the equation of the unit circle.
A3 Trig ratio problems - Solve problems, using the six trigonometric ratios for angles expressed in radians and degrees.
A4 Graph trig ratios - Graph and analyze the trigonometric functions sine, cosine and tangent to solve problems.
A5 Solve trig equations - Solve, algebraically and graphically, first and second degree trigonometric equations with the domain expressed in degrees and radians.
A6 Prove trig identities - Prove trigonometric identities, using: reciprocal identities, quotient identities, Pythagorean identities, sum or difference identities (restricted to sine, cosine and tangent), double-angle identities (restricted to sine, cosine and tangent).
B1 Operations of functions - Demonstrate an understanding of operations on, and compositions of, functions.
B2 Translating functions - Demonstrate an understanding of the effects of horizontal and vertical translations on the graphs of functions and their related equations.
B3 Stretching functions - Demonstrate an understanding of the effects of horizontal and vertical stretches on the graphs of functions and their related equations.
B4 Combined transformations - Apply translations and stretches to the graphs and equations of functions.
B5 Reflecting functions - Demonstrate an understanding of the effects of reflections on the graphs of functions and their related equations, including reflections through the: x-axis, y-axis, line $y = x$.
B6 Inverse relations - Demonstrate an understanding of inverses of relations.
B7 Understanding logarithms - Demonstrate an understanding of logarithms.
B8 Log laws - Demonstrate an understanding of the product, quotient and power laws of logarithms.
B9 Graph exp & logs - Graph and analyze exponential and logarithmic functions.
B10 Exp & log problems - Solve problems that involve exponential and logarithmic equations.
B11 Factoring - Demonstrate an understanding of factoring polynomials of degree greater than 2 (limited to polynomials of degree ≤ 5 with integral coefficients).
B12 Graph polynomials - Graph and analyze polynomial functions (limited to polynomial functions of degree ≤ 5).
B13 Radical functions - Graph and analyze radical functions (limited to functions involving one radical).
B14 Rational functions - Graph and analyze rational functions (limited to numerators and denominators that are monomials, binomials or trinomials).
C1 Fundamental counting principle - Apply the fundamental counting principle to solve problems.

C2 Permutations - Determine the number of permutations of n elements taken r at a time to solve problems.
C3 Combinations - Determine the number of combinations of n different elements taken r at a time to solve problems.
C4 Expanding binomials - Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers).

Assessment:

- Learning Activities: You will be assessed using one or more of the following types of activities: text assignments, worksheets, problems, projects, reflection writings, quizzes, and tests.
- There will be two types of assessment: (1) student ability to understand the prescribed learning outcomes and (2) student effort
- (1) Two types of assessment of understanding will take place:
    - Formative assessment: All assigned work is designed to help you understand the concepts within the course. Practice assignments will not count towards your final grade but they are required work.
    - Summative assessment: Assessments such as tests, projects, and some assignments will count towards your final grade. You will always be told when an assessment is summative and will have an effect on your final grade. You may be required to complete a minimum amount of practice to demonstrate your readiness before completing a summative assessment.
- (2) Effort will be assessed using the rubric available to students and parents on JupiterGrades or the School District #73 VC website at http://vc.sd73.bc.ca.
- Every learning outcome will be assessed at least twice. JupiterGrades uses the most recent assessment to calculate the final grade. If the most recent assessment is lower than the first, but close, then you may ask Mrs. Buck to omit the most recent assessment. If the second assessment is lower than the first but by a large amount then you may ask Mrs. Buck to average the two results. If you do not make the request for either of these changes before the marks are submitted to the office then JupiterGrades will use the most recent mark to calculate your report card mark.

Tools needed: The following tools must be brought with you each class: textbook, binder and paper, graph paper, pencils, graphing calculator, eraser, and ruler. You will not be permitted to go to your locker during class.

Graphing Calculator: You will need a graphing calculator for this course. If you are purchasing a graphing calculator, please see Mrs. Buck for suggestions. Please discuss with Mrs. Buck if you do not have a calculator and do not plan to buy one so alternate arrangements will be made.

Course guidelines:

- The concepts of this course are more easily remembered if they are learned, not just memorized. This is best achieved through practice so complete all activities and assignments.
- Text assignments will not be collected but are needed for practice. We will discuss homework assignments during class time.
- If you are absent, it is your responsibility to find out what you missed and complete the work. Missed assignments can be retrieved from Mrs. Buck during class, from the videos on the School District #73 VC website at http://vc.sd73.bc.ca, on JupiterGrades, or by emailing her at tbuck@sd73.bc.ca.

Classroom rules:

- Please ensure you arrive on time and keep washroom visits to a minimum. Also, please do not leave the VC room without permission from Mrs. Buck.
- Your behaviour should in no way interfere with the learning of any student within the class, including yourself.
- Please attend class regularly. High achievement is difficult to attain when attendance is low.
- Please do not write in the textbook or on the classroom furniture.
- Please use the garbage can and recycle boxes for the appropriate items.
- Eating and drinking is not allowed in the VC classroom. If you are ill, please request permission from Mrs. Buck to have a bottle of water (with a cap).
- Please keep electronics such as ipods and cell phones off and out of sight in the classroom.

Parental contact: I will be using JupiterGrades to compile marks. It is an online program so students and parents can access marks on the Internet at any time. This can be accessed by both students and parents at https://jupitergrades.com/login/. As well, students and parents may call me at 250-674-3328 or email tbuck@sd73.bc.ca to discuss individual progress.