		School of Arts & Science **MATHEMATICS DEPARTMENT** **MATH 105-001** **Algebra and Pre-Calculus** **Fall 2009 (Sep-Dec)**

COURSE OUTLINE

The course description is online @ http://camosun.ca/learn/calendar/current/web/math.html

Ω *Please note: the College electronically stores this outline for five (5) years only.*
*It is **strongly recommended** you keep a copy of this outline with your academic records.*
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

(a)	Instructor:	Peggy Tilley		
(b)	Office Hours:	Mon – Fri 2:00 – 3:00 pm		
(c)	Location:	Ewing 244		
(d)	Phone:	370 - 3502	Alternative Phone:	
(e)	Email:	tilley@camosun.bc.ca		
(f)	Website:	**peggytilley.googlepages.com**		

2. Intended Learning Outcomes
(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Upon completion of this course the student will be able to:

1. Simplify expressions involving rational exponents, radicals, polynomials and ratios of polynomials.
2. Solve linear, quadratic, and rational equations and inequalities.
3. Identify and correct common algebraic errors.
4. Evaluate functions, find the domain of functions, compose and decompose functions and find inverse functions.
5. Graph polynomial and rational functions using symmetry, intercepts, long run behaviour, asymptotes and a table of signs.
6. Use the Rational Zero Theorem to factor polynomials.
7. Find all solutions (real and complex) for polynomial equations.
8. Graph exponential and logarithmic functions and their transformations.
9. Prove the properties of logarithms and use these properties to simplify expressions, and solve equations and applied problems.
10. Graph the six trigonometric functions and their transformations and the three basic inverse trigonometric functions.
11. Use the unit circle definitions to derive the Pythagorean identities, the sum and difference formulas, and the double angle and half angle formulas. Use these identities to simplify expressions, solve equations and verify other identities.
12. Use trigonometric functions to model real-life problems involving cyclical patterns.
13. Complete the squares and graph parabolas, circles, ellipses and hyperbolas. Solve applied problems using the reflective properties of parabolas.
14. Evaluate limits numerically, graphically and algebraically, find derivatives using the definition and find equations of tangent lines.
15. Read and write mathematics at a level sufficient for entry into first year calculus.

3. Required Materials

(a) Texts: Math 105 & 107 Exercise Sets (sold in the bookstore)

(b) Other: **Sharp EL 531W** calculator

4. Course Content and Schedule

Course Content: MATH 105 is an algebra and precalculus course. We start with a review of algebra and analytic geometry and then continue with an in depth study of functions, polynomial functions, rational functions, exponential and

logarithmic functions, trigonometric functions and their inverses, trigonometric identities and equations. A brief introduction to calculus is sprinkled throughout the course.

References:	We have several precalculus textbooks in the math room and in the library. As well, there are books, videos and DVD's on reserve in the Lansdowne Library that are available on 3 day loan.
Class Times:	Mon – Fri 12:30-1:50pm in Y219
Math Room:	Ewing 224 and Ewing 342 These are drop-in centres where you can work on your math homework and get free help from the math tutor or fellow students.
Calculator:	The **Sharp EL 531** calculator (the current model is designated W but older models of the 531 are also permitted) is the required calculator for this and all other math courses at the Lansdowne campus (except Math 112/113). For fairness, it will be the only calculator allowed for tests/exams. Our first two tests will be done without any calculator to check your basic number/fraction skills.
Prerequisite:	The minimum recommended prerequisite is a **recent** C+ in either Math 11 or MATH 073. If you have not completed Math 11 within the past 2 years or Math 12 within the last 3 years, then you probably want to take either 072/073 or just 073 (all tuition free courses) this term. Please come and see myself (or the chair of the Math department) so that we can start you in the right course. Math 105 is an expensive course – we want to ensure that it is the best choice for you this term.
Out-of-Class Workload:	about 2 hours/day Mon – Fri (not 10 hours on Sunday!) This is an intensive 6-credit course. If you fall behind, it will be difficult to catch up.

Tips for Success:
1. Attend every class and work hard in class. Please ask questions if you don't understand something.
2. Do your homework every day. Unfortunately, math is not a spectator sport. It requires a lot of hard work and practice. Please work through the questions thoughtfully; don't just try to get your homework over with!
3. On your timetable, schedule time each day for your math homework; it is really important to establish a routine.
4. Please ask for help before you fall behind or get frustrated. If you can't get the correct answer, bring me all your attempts so that I can see what you are thinking.

5.   Basis of Student Assessment (Weighting)

Tests:	There are **five** tests based on the homework in the Math 105 & 107 Exercise Sets and also a trigonometry proof quiz. Test dates are shown on the course calendar attached to this outline. A comprehensive final exam is scheduled by registration anytime from Dec 14 to Dec 21 inclusive. The final exam schedule is posted on Camlink by the end of October.
Missed Tests:	If you miss a test for any reason (illness, family emergency, etc) then the weight for that test (10%) goes on the final exam. Please see the grade calculation below.
Grade Calculation:	(1) Your final grade for the course **cannot be higher than your mark you earn on the trig proof quiz**. For example, if you score 75% on the trig proof quiz, then your maximum possible grade for the course is a B. (The trig proof quiz test just requires that you learn and understand a series of related proofs. Students typically earn grades of over 90% on this quiz.)
	(2) Your final grade will be automatically calculated three different ways and you will be awarded the highest of these three grades.

Option 1:   All 5 Term Tests   50%
            Final Exam   50%

Option 2:   Best 4 of 5 Term Tests   40%

	Final Exam	60%
Option 3:	Best 3 of 5 Term Tests	30%
	Final Exam	70%

6. Grading System
(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at **camosun.ca** for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. *(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)*
CW	*Compulsory Withdrawal:* A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**.
It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.

Math 105 Fall 2009 Tentative Pacing Schedule

The numbers in the table refer to sections in the Math 105 & 107 Exercise Sets sold in the Camosun bookstore. Some sections take a bit more than a day and some sections a bit less but this schedule is a good approximation.

Wk		Monday	Tuesday	Wednesday	Thursday	Friday
1	Sept.	7 Labour Day	8 1.1	9 1.2	10 1.3	11 1.4
2		14 1.5	15 1.6	16 1.7	17 1.8	18 1.9
3		21 2.1	22 2.2	23 2.3	24 2.4	25 2.5
4	Oct.	28 2.6	29 2.7	30 **Test 1 1.1 – 2.5**	1 2.8	2 2.9
5		5 2.10	6 3.1	7 3.2	8 3.3	9 3.4
6		12 Thanksgiving	13 3.5	14 3.6	15 *3.7*	16 3.8
7		19 4.1	20 4.2	21 **Test 2 2.6 – 3.8**	22 4.3	23 4.4
8		26 4.5	27 5.1	28 5.2	29 5.3	30 5.4
9	Nov.	2 5.5	3 5.6	4 5.7	5 5.8	6 **Test 3 4.1 – 5.7**
10		9 5.9	10 6.1	11 Remembrance Day	12 6.2	13 6.3
11		16 6.4	17 6.5	18 6.6	19 6.7	20 6.8
12		23 6.9	24 7.1	25 7.2	26 7.2	27 **Test 4 5.7 – 7.1**
13	Dec.	30 7.4	1 7.5/7.6	2 7.6/7.7	3 7.7/7.8	4 **Trig Proof Quiz**
14		7 7.8/7.9	8 7.9	9	10 **Test 5 7.1 – 7.9**	11
15 - 16		Mon 14 – Mon 21 **Final exams** are timetabled by registration; the exam schedule is posted on Camlink at the end of October. Math exams are sometimes on Saturday. Please don't book holiday plans until **Tues Dec 22**.				