CAMOSUN COLLEGE	***School of Arts & Science*** ***MATHEMATICS DEPARTMENT*** **MATH 107- 001& 002** **Pre-Calculus: Business and Soc Sci** **Winter 2008**

COURSE OUTLINE

The Approved Course Description is available on the web @ _____

Ω *Please note: this outline will be electronically stored for five (5) years only.*
It is strongly recommended students keep this outline for your records.

1. Instructor Information

(a)	Instructor:	Peggy Tilley		
(b)	Office Hours:	Mon – Fri 10:00 – 10:45 and 2:00 – 2:30		
(c)	Location:	Ewing 244		
(d)	Phone:	370 - 3502	Alternative Phone:	
(e)	Email:	tilley@camosun.bc.ca		
(f)	Website:	http://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. Review selected algebra topics: factoring, simplifying rational expressions, and solve polynomial and rational equations.
2. Evaluate functions, find the domain of functions, compose functions.
3. Graph polynomial and rational functions using symmetry, intercepts, asymptotes and a table of signs.
4. Use the Factor and Rational Zero Theorems to factor polynomials and find their real zeros.
5. Graph exponential and logarithmic functions and their transformations.
6. Use the properties of logarithms to simplify expressions, and solve equations and applied problems.
7. Graph the sine, cosine and tangent trigonometric functions and their transformations.
8. Use the Pythagorean identities, the sum and difference formulas, and the double angle formulas to simplify expressions, solve equations and verify other identities.
9. Use trigonometric functions to model real-life problems involving cyclical patterns.
10. Evaluate limits, find derivatives using the definition, and find equations of tangent lines.
11. Read and write mathematics at a level sufficient for entry into applied calculus.

3. Required Materials

(a)	Texts	Math 105 & 107 Exercise Sets
(b)	Calcluator	Sharp EL 531W calculator

References:	No outside reading is required. However, if you would like a reference for a particular topic, we have an assortment of precalculus textbooks in the math room and in the library. As well, math videos and DVD's in the Lansdowne Library Viewing Room are available on 3 day loan.

4. Course Content and Schedule

Comparison of Math 105 and 107	Math 107 is a lighter version of Math 105. If you need a UT Math 12 equivalent course for a BA degree or are heading for applied calculus for biology, business or social sciences, then probably Math 107 is the course for you. If you want to keep all your options open, then Math 105 is the right choice. Please come and see me or the chair of the mathematics department and we can talk about your particular situation.
Course Content:	MATH 107 is an algebra and precalculus course for business, biology (those heading to UVic) and social science students. The main topics are algebra, functions, polynomial functions, rational functions, exponential and logarithmic functions, trigonometric functions and trigonometric identities & equations. A brief introduction to calculus is provided throughout the course.
Class times:	Section 1: Mon – Fri 8:30 – 9:20 in Y219 Section 2: Mon – Fri 12:30 – 1:20 in Y219 Feel free to mix and match (except on test days)
Math Rooms:	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 classmates.
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 talk about your math background and help you choose the best course this term.
Out-of-class Workload:	1 – 1.5 hrs/day Mon – Fri (not 7 hours on Sunday!)
Exit Grade You Need:	The prerequisite for Applied Calculus (Math 108) is a **C** in one of Math 107, 105 or 115 or a C+ in Math 12. Math 107 is a new course and the Camosun calendar has not been fully updated to include it in all the prerequisite lists. Even if it is not listed, Math 107 is an acceptable alternative to Math 12 or Math 105 or 115 **except** for entrance into the engineering technologies or Math 100 or 110. Please ask if you have any questions.
Tips for Success:	1. Attend every class and get the most out of class time. Don't be afraid to ask and answer questions. Don't worry about answering a question wrong. I like wrong answers – it gives me a chance to correct misconceptions. I often give you a bit of time to start or finish a question before I write up the solution on the board. Please use that time to work on the problem or to get help from, or give help to, the person beside you. Please turn off and put away your cell phone. Checking and sending messages during class is not a smart (or polite) use of class time. Copying notes for a class that you missed rather than working hard on the new material is also not the best (or polite) use of class time.

2. Do your homework every day. Math is not a spectator sport; understanding what we do in class is only the first step. Work through lots of exercises and really think about the ideas; don't just try to get your homework over with! On your timetable, schedule time each day for your math homework; it is really important to establish a routine. You can't put this course on the back burner and hope to cram it in at the end – there is way too much material.

3. Work with a classmate, a study buddy, some of the time. It's fun and you will see whether you really understand something when you try to explain it to someone else.

4. Please ask for help before you fall behind or become frustrated. If you can't get the correct answer, bring me your work so that I can see what you are thinking. I like to spend time explaining what is going wrong as well as nudging you towards a correct answer. Don't save up your questions until you have a long list; I find I can be more effective working with you on just one or two ideas at a time. Be a frequent user of the math help lab and my office hours.

5. Keep working, stay positive and do the best you can given all the other demands in your life.

5. Basis of Student Assessment (Weighting)

Tests: There are 3 in class tests and 4 take-homes. All tests are based on the homework in the Math 105 & 107 Exercise Sets. The test dates are shown on the course calendar attached to this outline.

Late Assignments/
Missed Tests: Late assignments are not accepted and there are no rewrites for missed tests. If you miss a test or assignment for medical or other urgent reasons, please email me as soon as possible and bring in documentation when you return to class. Your temporary term mark will be the average of the tests/assignments that you do write. You will keep that term grade provided that you do well on the missed material on the final exam. However, if you are weak on that material on the final, I will calculate a mark for the missing work based on how you do on that material on the final exam. So, study the missed material well for the final exam!

Grade Calculation:
4 Take-homes	12%
3 Tests	38%
Final Exam	50%

(1) If you don't do so well on one test or assignment, don't worry that you have ruined your grade. If you do well on that material on the final and you are sitting on the boundary between two grades, then I will nudge you up to the next letter grade.

(2) Occasionally it turns out that it would be to your benefit to have the final count 100%. This is possible with the condition that you need to be in the top half of a grade range (see below) to be awarded that grade. For example, if you want the final to count 100%, then you need to score at least 62.0% on the final for a C, 67.0% for a C+,…, 87.0% for an A and 95.0% for an A+. Without this condition, I would need to make the final exam harder than I want to (and harder than most of you would want me to).

6. Grading System

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.

Good luck and please come for help before you fall behind.

Math 107 Tentative Calendar – Winter 2008

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

Takehomes are due UNDER my office door (E244) by 3 pm *on the date shown.*

Wk		Monday	Tuesday	Wednesday	Thursday	Friday
1	**Jan.**	7 1.1	8 1.2	9 1.3	10 1.4	11 1.5
2		14 1.6	15 1.7	16 1.8	17 1.9	18 2.1
3		21 2.2 **Takehome 1**	22 2.3	23 2.4	24 2.5	25 2.6
4		28 2.7	29 2.8	30 2.9	31 2.10	1 3.1
5	Feb.	4 3.2 **Takehome 2**	5 3.3	6 3.4	7 3.5	8 3.6
6		11 **3.7**	12 3.8	13 4.1	14 *Reading Break*	15 Reading Break
7		18 4.2	19 **Test 1**	20 4.2/4.3	21 4.3	22 4.4
8		25 4.5	26 5.1	27 5.2	28 5.3 **Takehome 3**	29 5.4
9	**Mar.**	3 5.5	4 5.6	5 5.7	6 5.8	7 5.9
10		10 6.1 Withdrawal date	11 **Test 2**	12 6.1/6.2	13 6.2/6.3	14 6.3/6.4
11		17 6.4/6.5	18 6.6	19 6.7	20 6.8	21 Holiday
12		24 Holiday	25 6.9	26 7.1	27 7.2	28 **Test 3**
13	**Apr.**	31 7.3	1 7.4	2 Class for 105	3 *Class for 105*	4 Class for 105
14	.	7 Class for 105	8 Class for 105 **Takehome 4 (for 107)**	9 Class for 105	10 Class for 105	11
15		Mon 14 – Sat 19 Final exams are timetabled by registration; the exam schedule is posted on Camlink at the end of February. Please don't book travel plans until **April 23**.				
16		Mon 21 – Tues 22 Final exams continue				

MATH 107 Homework   Winter 2008

Help is available in the math help labs (E224 or E342) and from me (E244) and your classmates. A good strategy is to go to a math room after class and to work on your homework there.

Usually the best approach is to do the current day's homework first – reinforce it while it is still fresh. Then, if you have time, go back and catch up on any outstanding homework.

Pg		Section	Homework – **no** calculator for Units 1 & 2
P1:A1	1.1	Real Numbers	2d, 3c, 4c, 5d, 6c, 7d, 8b, 9, 10, 11, 12
P4:A4	1.2	Integer Exponents	1f, (2c,d), 3, 4, (5a,b,d), 7
P6:A6	1.3	Rational Exponents & Radicals I	(1a,b), 2b, 3, (4b,e), 5, 6, 7, 8b, (9a,b), 11, 12, 13
P8:A9	1.4	Radicals II	(1a,b,e), (2a,b,c,d), 3a, 4, 5, 7, (8a,d), (9a,d), 10, 11a, 12, 13, 14
P13:A13	1.5	Polynomials	1, 2, (4a,b), 5, 6, (7a,d,e), 9, 10, 11, 12
P15:A15	1.6	Factoring I	1, (2a,b,e,f), (3a,b,c,d), 4, (5a,b,d), (6b,c), (7a,c), (8a,b,c), (9a,b,c), (10a,b,d), (11a,b,c,d,g,h), (12a,b,c,d)
P18:A18	1.7	Factoring II	1, (2a,b,c), (3a,b), 4, (5a,b,c), (6a,b), 7, 8, 9a, 10, (11a,c)
P21:A21	1.8	Rational Expressions	1, 2, 3, (6a,b,d), 7d, (8a,c), 9, 10c, (11a,b)
P25:A24	1.9	Complex Fractions	1c, (2a,d), (3a,b,c), 4, 5
P1:A1	2.1	Linear Equations & Inequalities	1, 2, 3, 4, 5, 6, 7, 8, 9
P4:A5	2.2	Quadratic Equations	1, 2, 3, 4, 6, 7, 8 in class, 9, 10, 11, (12a,c), 13
P7:A9	2.3	Equations Involving Rational Expressions	1, (2a,b,c,f), 3, 4, 5, 6, 7 in class, 8b, (9b,c), (10a,c,e,h,i)
P10:A13	2.4	More Equations	(1a,c,g), 2, 3, 4, (5b,c), 6
P12:A16	2.5	Polynomial & Rational Inequalities	(1a,b,e), 2, (3a,c), 4
P14:A20	2.6	Distance, Midpoint & Slope	(1a,b), 2, 4, 5, 7, 8, 9, 10a, 11, 12, 13, 14
P16:A23	2.7	Linear Equations in Two Variables	1, 2, (3a,c), 4a, 5, (6c,e), (7b,c,e), (8b, c), 9, 10, 11 in class
P19:A26	2.8	Circles	1d, 2, 3, (4a,b,c), (5a,b), 6
P21:A28	2.9	Ellipses & Hyperbolas	1 in class, 2, 3, (4a,c,d)
P23:A32	2.10	Systems of Equations in Two Variables	1b, 2b, (3a,c), (4a,c), 5, 6
P1:A1	3.1	What is a Function?	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16 in class, 17, 18

Pg	Section		Homework – **no** calculator for Units 1 & 2
P5:A4	3.2	Piecewise Defined Functions; Constructing Functions	1a, 2b, 3, 4, 5, 6, 7(In part a, the final answer is correct but the work is wrong), 8 in class, 9, (10a,b,c), 11, 12
P8:A8	3.3	Function Notation & Difference Quotients	(1a,c,h,i,l), 2, (3a,c), 4, (5a,b,c), 6, (7a, c), (8b,c)
P10:A11	3.4	A Library of Functions	1, 2, 3 & 4 in class, 5, 6, 7, (8a,c), 9b, 10a
P14:A14	3.5	Domains, X-intercepts & Symmetry	1, 2a, 3, 4, 5, 6, (7a,b), 8, 9
P17:A18	3.6	Translating & Reflecting	1, 2, (3c, e), 4, 5, 6
P22:A22	3.7	Stretching/Shrinking	1 in class, 2, (3d,e,f), 4, 5c, 6, 7, 8b, 9
P28:A27	3.8	Combinations of Functions	1, 2, 3a, 4, 5, 7c, 8, 9, 11a, 12
P1:A1	4.1	Limits	1, 2, 3, 6, 7, (8a,b,c)
P4:A4	4.2	The Derivative	(1b,d), 2, 3, 4, 6
P6:A8	4.3	Graphing Polynomial Functions	2 in class, 3, (5a,b,c,d), 6, (7a,b,c)
P9:A13	4.4	Asymptotes, Holes & Intercepts	1, 2, 3, 4, 5, 6
P11:A16	4.5	Graphing Rational Functions	1, (2a,b,c,d,e)
P1:A1	5.1	Inverse Functions	1, 2, 3, 4, 6a, 7b, 8, 10
P6:A6	5.2	Graphing Exponential Functions	1, 2, (3c,d,e), 4, 5, 6, 7 in class
P9:A9	5.3	Working with Exponential Functions	1, 2a, 3, 4a, 5, 7 in class, 8
P11:A12	5.4	An Introduction to Logarithms	1, 2, 3, 4, 5, (6a,c), 7, (8a,d), 9, (10a,b,d,f,g), 11, 12
P14:A15	5.5	Logarithmic Functions	1, 2, 3, 4a, 5, 6, 7, 8, (9a,b,c,d), 11
P18:A20	5.6	Properties of Logarithms	1, 2, (3a,b,c,d,e), (4a,b,c,d), 5, (6a,b,c), (7a,c,e), 8, (9a,b)
P23:A26	5.7	Exponential Equations & Compound Interest	1, 2, 3, 4, 5b, 6, (7b,c), 8, 9b, 10a
P26:A30	5.8	Exponential Growth & Decay	3, 4 in class, 5, 6, 7, 8, 9, 10, 11
P28:A32	5.9	Logarithmic Equations & Applications	(1a,b), (2a,b,c,e), 3, 4, 5, 6
P1:A1	6.1	Radian Measure	1, 2, 3, 4, 5a, 6, (7c should be 1° & 7d should be π°), 8b, (9b answer is 8.73 cm), (10a,b), 11

Pg	Section		Homework – **no** calculator for Units 1 & 2
P4:A3	6.2	The Sine & Cosine Functions	1, 2, 3, 4 in class, 5, 6, 7, 8
P8:A6	6.3	Pythagorean Identities	1, 2, 3, 4, 5, 6
P11:A11	6.4	Transformations of Sine & Cosine	1, 2, 3, 4, 5, (6a,b,c)
P13:A14	6.5	Modelling with Sine & Cosine	1, 2, 3, 4, 5, 6
P15:A16	6.6	Other Trig Graphs	1–4 in class, 5, 6, 7, 8, 9
P18:A20	6.7	Right Triangle Trigonometry	1, 2c, 4, 5, 6, 7, 8, 9, 10, 12, 13 in class, 14, 15
P22:A23	6.8	Trig Functions of Any Angle	1, 2b, (3a,b), 6, 7, 8, 9, 10, 12
P26:A25	6.9	Trigonometric Equations	1, 2, (3a,b,c,e,f,g,h), 4, 5, (8a,b from the 105 section)
P1:A1	7.1	Verifying Identities	1, 2, 3, 5, 6, 7
P5:A9	7.2	Sum & Difference Identities	1, (2a,b), 3, (4b,c,d), 5, 6, 7a
P7:A11	7.3	The Derivatives of Sine & Cosine	1 & 2a & 3 in class; 2b (takehome), 4
P8:A13	7.4	Double Angle Identities	1, 2, 3, 4, (5a,c), (6a,b,c,f), 8 (from the 105 section)