



**School of Arts & Science  
MATHEMATICS DEPARTMENT**

**MATH 105-01/02  
Algebra and Pre-Calculus  
2007W**

## 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 – Thurs 11:30 – 12:20 or Thurs 3:30 – 4:20		
(c)	Location:	Ewing 244		
(d)	Phone:	370 - 3502	Alternative Phone:	
(e)	Email:	tilley@camosun.bc.ca		
(f)	Website:			

### 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. Evaluate functions, find the domain of functions, compose and decompose functions and find inverse functions.
2. Graph polynomial and rational functions using symmetry, intercepts, long run behaviour, asymptotes and a table of signs.
3. Prove the Remainder and Factor Theorems and use the theorems to factor polynomials and find their real and complex zeros.
4. Graph exponential and logarithmic functions and their transformations.
5. Prove the properties of logarithms and use these properties to simplify expressions, and solve equations and applied problems.
6. Graph the six trigonometric functions and their transformations and the three basic inverse trigonometric functions.
7. 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.
8. Use trigonometric functions to model real-life problems involving cyclical patterns.
9. Evaluate limits, find derivatives using the definition, find equations of tangent lines and solve optimization problems using polynomial calculus.
10. Read and write mathematics at a level sufficient for entry into first year calculus.

### 3. Required Materials

(a)	Texts	Math 105 Problem Sets
(b)	Other	<b>Sharp EL 531</b> calculator (the current model is designated W but older models of the 531 are also permitted)

#### 4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

- Course Content: MATH 105 is an algebra and precalculus course. Topics include algebra, functions, polynomial functions, rational functions, exponential and logarithmic functions, trigonometric functions and their inverses, trigonometric identities and equations, and a brief introduction to both conics and calculus.
- References: We have several Precalculus textbooks in the math room and in the library. As well, there are videos and DVD's in the Lansdowne Library Viewing Room that are available on 3 day loan.
- Class times: Section 1: Mon – Thurs 9:30 – 11:20 in Y219  
Section 2: Mon – Thurs 1:30 – 3:20 in Y219  
Feel free to mix and match (except on test days)
- 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 test 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 – Thurs (not 8 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)

*(Should be linked directly to learning outcomes.)*

Tests:	The 5 tests are based on class work and the homework. The test dates are shown on the course calendar on the last page of this outline.								
Final Exam:	Since this is such an intensive course with so much material, there will <b>not</b> be a comprehensive final exam. Instead, you can rewrite one of the tests during our scheduled final exam slot.								
Rewrites:	if you have missed a test due to illness or a family emergency or if you wish to improve your mark on one of the term tests, then you may rewrite one test during the Math 105 final exam time slot. Your rewrite mark replaces your original test mark.								
“Proof” Quizzes:	We cover a number of proofs during the course. They will usually be tested on short quizzes one or two days after we do the proof in class. Missed proof quizzes may be made up in my office during office hours, usually within a week of when the quiz was written in class.								
Homework:	<p>Homework is due at the beginning of class each Monday. To allow for illness etc, you will receive full credit for the first 100 late problems during the term (and ½ credit for any other late problems). So, if you only have time to do part of an assignment, then hand in what you have done and then complete the rest at a later date as part of your late allotment.</p> <p>If you are having difficulty, please do more than the assigned questions. Since the tests are based on the concepts practised in the homework, this is a very important component of the course.</p>								
Grade Calculation:	<table><tr><td>5 tests</td><td>95%</td></tr><tr><td>Proof Quizzes</td><td>5%</td></tr><tr><td>Homework</td><td>5%</td></tr><tr><td>Total</td><td>105% (Bonus of 5%)</td></tr></table>	5 tests	95%	Proof Quizzes	5%	Homework	5%	Total	105% (Bonus of 5%)
5 tests	95%								
Proof Quizzes	5%								
Homework	5%								
Total	105% (Bonus of 5%)								
Mark to aim for:	If you are going on to Math 100 (calculus for math, computing science, physics and chemistry students), then you need a <b>B</b> in this course. For most other math courses and programs, a grade of C in Math 105 is sufficient.								

## 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
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5

70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		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 at [camosun.ca](http://camosun.ca) or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> 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	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> 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.

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](http://camosun.ca) for information on conversion to final grades, and for additional information on student record and transcript notations.

## 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](http://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.

## ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED

The numbers in the calendar refer to sections in the *Math 105 Problem Set Booklets* available at the 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
1	<b>Jan.</b>	8 1.1	9 1.2	10 1.3	11 1.4
2		15 1.5	16 1.6	17 1.7	18 1.8
3		22 <i>last day for refund</i> 1.9	23 1.10	24 1.11	25 1.12
4		29 Catchup	30 <b>Test 1 (19%)</b>	31 2.1	1 2.2
5	<b>Feb.</b>	5 2.3	6 2.4	7 2.5	8 Holiday
6		12 2.6	13 2.7	14 2.10	15 <i>Catchup</i>
7		19 <b>Test 2 (19%)</b>	20 2.11	21 2.12	22 2.13
8		26 3.1	27 3.2	28 3.3	1 <i>Catchup</i>
9	<b>Mar.</b>	5 <b>Test 3 (19%)</b>	6 3.4	7 3.5	8 3.6
10		12 <i>withdrawal date</i> 3.7	13 3.8	14 3.9	15 3.9
11		19 3.10	20 3.11	21 3.12	22 Long Proof Quiz & Catchup
12		26 <b>Test 4 (19%)</b>	27 3.13	28 4.1	29 4.1
13	<b>Apr.</b>	2 4.2	3 4.3	4 4.4	5 4.5
14		9 Holiday	10 4.6	11 Catchup	12 <b>Test 5 (19%)</b>
15/ 16		There will not be a final exam for this course. However, registration will be assigning us a final exam time slot during this 2 week period. If you miss a term test or if you want to rewrite a test to improve your mark, then you may do the rewrite in the 105 exam slot. If you are doing a rewrite, please sign up by the end of week 13.			