



**School of Arts & Science
MATHEMATICS DEPARTMENT**

**MATH 105-02
Algebra and Pre-Calculus
2006F**

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 – 12:15 or 3:15 – 3:45		
(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	

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. The main topics are 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 – 11:15 in Y217
Section 2: Mon – Thurs 1:30 – 3:15 in Y217
Feel free to mix and match (except on test days!)

Math Room: Ewing 224 (370 - 3503)
This is a drop-in centre where you can work on your math homework and get free help from the math tutor.

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. The calculator is sold at the Camosun bookstore.

Prerequisite: The minimum recommended prerequisite is a recent B in Math 11 or B- in MATH 073. If you have not taken Math 11 within the past 2 years or Math 12 within the last 3 years, then you probably want to take either 073 or 092 rather than this course. Please come to my office and see me (or the chair of the Math department) ASAP so that we can discuss your background and get you in the right course.

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. We push hard for the first 12 weeks and then finish the course with some lighter topics.

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 get behind or 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 tests are based on the homework in the four booklets. If you work hard on these questions, then you will ace the course and you will be really well prepared for calculus.
- Final Exam: This is a very intensive course. One way to lighten the load a bit is to **not** have a final exam. Instead of cramming for a final, work consistently on the material throughout the term. Hopefully you will learn more and retain it for longer.
- Missed Tests: You are required to provide medical or other documentation if you miss a test. You may do a make-up in our assigned Math 105 final exam time slot sometime in week 15 or 16.
- Rewrites: If you wish to improve your mark on one of the first 3 term tests and you have not missed any tests, then you may rewrite one test during the Math 105 final exam time slot. Your rewrite mark is **averaged** with your original test mark.
- “Proof” Quizzes: We cover a number of proofs during the course. They will be tested on short quizzes usually one or two days after we do the proof in class. Missed quizzes may be made up in my office during office hours, usually within a week of when the quiz was written in class. You may also rewrite a proof quiz in my office if you wish to improve your mark.
- Homework: All the questions in the problem sets are relevant to the course and all the answers are provided. My best advice is to do as many of the exercises as you can. The sections are numbered so that we more or less cover one section each day or four sections in a full week.
- Homework is collected at the beginning of class on Monday and graded as follows. Each section will be marked out of 2. If you correctly complete 50% – 69% of the work in that section, you earn 1/2. If you complete 70% – 89% of the material, you receive a perfect score of 2/2 for that section. If you complete 90% or more of the work in a section, then you will receive 2.2/2, a bit of a bonus.
- On the upper right corner of the front page of your homework, please make a small table showing the section number and the mark you earned for that section. Add it up and circle the total. If you haven't finished all the sections, hand in what you have done for full credit and include the rest with next week's homework. Late homework is discounted by 50% and can be at most one week late.
- I will scan your work and record the mark. After the first term test, I will look to see if there are any anomalies; people doing homework but not performing as expected. I'll look at the homework from those individuals in more detail and we will try to identify the problem and turn things around.
- Grade Calculation: Subject to the conditions* below, your grade will be calculated as follows: Test 1 (20%), Test 2 (30%), Test 3 (30%), Test 4 (7%), Homework (7%) and Proof Quizzes (6%).
- *To obtain a grade of C or higher in this course, you need to achieve an overall grade of at least 60% AND a mark of at least 50% on **each** of the first 3 term tests.
- To obtain a grade of B or higher in the course, you need to achieve an overall grade of at least 75% AND a grade of at least 65% on **each** of the first 3 term tests **and** on the proof quizzes.

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** in this course. For most other math courses, a grade of C in Math 105 is sufficient.

6. Grading System

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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 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 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.

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