

**Mathematics 185: Technical Math 1**  
**Q1, 2007/8**

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**Course web site:** <http://wrean.disted.camosun.bc.ca/math185>  
**Office Hours:** Posted on office door and on website.

**Course Description:** Topics include: vectors: operations, dot and cross products; matrices: operations, scaling, rotation, representation of linear systems; limits; derivatives: polynomial, trigonometric, logarithmic and exponential functions, higher order; applications: related rates, extrema, graphing.

**Prerequisites:** MATH 105 or MATH 115 or MATH 173 or a “B” in Math 12 or an “A” in Applications of Math 12 or assessment.

**Textbook:** Allyn J. Washington, Basic Technical Mathematics with Calculus, SI version, 8<sup>th</sup> edition, Pearson Education Canada, 2005.  
Matrix Algebra course materials (available in bookstore).  
Vector course materials (available on course website).

**Calculator Policy:** The calculators required by each program (Mechanical – Ti-89 Titanium, Civil – HP50G) will be used for the vectors and matrix algebra portion of the course. However, no calculators will be allowed for the calculus quizzes.

**Grade Calculation:** The final grade will be calculated according to the following breakdown:

Quizzes:	40%
Assignments:	10%
Final Exam:	50%

The lowest quiz grade will be dropped when calculating the average of your quizzes. This allows a student to be absent on any one quiz day for any reason, including illness, without penalty. There is no provision for “making up” a missed quiz.

If your final exam grade is higher than your term work grade and your term work is **50% or higher**, then your final exam grade will count as 100% of your final grade.

**Final Exam:** The final exam will cover the entire course and will be 3 hours long. As stated in the current college calendar on page 39, “students are expected to write tests and final examinations at the scheduled time and place.” Exceptions will only be considered due to **emergency** circumstances as outlined in the calendar. Holidays or scheduled flights are not considered to be emergencies.

**Assignments:** The lowest assignment grade will be dropped when calculating the average of your assignments. This allows a student to miss any one assignment for any reason, including illness, without penalty.

**Late Policy:** Assignments that are late by one day will be given a 25% penalty. After that, late assignments will not be accepted.

**Collaboration Policy:** Student are encouraged to collaborate (work together) on assignments. However, you must be prepared to answer similar questions on your own for the quizzes, so it is vital that you yourself understand all of the assigned questions and work that you turn in.

**Math Room:** Technologies Centre (TEC) 142 (phone: 370-4492): This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on door).

**Grade Scale:** Final letter grades are normally assigned as follows (subject to the conditions above):

A+	90-100	B-	70-72
A	85-90	C+	65-69
A-	80-84	C	60-64
B+	77-79	D	50-59
B	73-76	F	0-49

### **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, Registrar's Office or the College web site at <http://www.camosun.bc.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, Registration, and on the College web site in the Policy Section:

<http://www.camosun.bc.ca/about/policies/policies.html#ss>

### **Academic Progress Policy:**

There is an Academic Progress Policy designed to enhance a learner's likelihood of success. Students should become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section:

<http://www.camosun.bc.ca/about/policies/policies.html#programminginstruction>

Here is the list of topics we will be covering in the course. The number of hours spent on each topic, however, is approximate and may be changed to best meet the needs of the class.

Section	Topic	hours
V.1	intro/vector concepts	1
V.2	vector concepts	1.5
V.3	dot product	1
V.4	cross product	1
V.5	applications of dot and cross product	1
MA 7.1-7.2	Review 2x2 linear systems - substitution and addition methods	1
MA 7.3	Multivariable Linear Systems	1
MA 8.1	Augmented Matrices and Gaussian Elimination	2
MA 8.1	Word Problems	1
W 23.1	Limits	1
W 23.2	Slope of Tangent to Curve	1
W 23.3	The Derivative	1
W 23.4	Instantaneous Rates of Change	1
W 23.5	Derivatives of Polynomials	1
W 23.6	Derivatives of Products and Quotients	2
W 23.7	Derivative of a Power of a Function and Chain Rule	2
W 23.8	Differentiation of Implicit Functions	2
W 24.1	Tangents and Normals	1
W 24.2	Newton's Method for Solving Equations	1
W 24.3	Curvilinear Motion	1
W 24.4	Related Rates	2
W 24.5	Using Derivatives in Curve Sketching	1
W 24.6	More on Curve Sketching	1
W 24.7	Applied Max/Min Problems	2
W 27.1	Derivatives of the Sine and Cosine Functions	1
W 27.2	Derivatives of the Other Trig Functions	1
W 27.3	Derivatives of the Inverse Trig Functions	1
W 27.4	Applications	1
W 27.5	Derivatives of the Log Function	1
W 27.6	Derivatives of the Exponential Functions	1
W 27.7	Applications	1
MA 8.1	Review of Matrices	1
MA 8.2	Operations with Matrices	2
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MA 8.3	Inverse of a Square Matrix	2
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MA 8.4	Determinant of a Square Matrix	1
MA 8.5	Applications of Matrices and Determinants	1
	additional linear algebra topic	2