

	<p>School of Arts & Science MATHEMATICS DEPARTMENT</p> <p>MATH 187-X01 Technical Math 2 Quarter 3, 2012</p>
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COURSE OUTLINE

The Approved Course Description is available on the web @ <http://camosun.ca/learn/calendar/current/web/math.html#MATH187>

- 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:	Leah Howard		
(b)	Office Hours:	11:30-1:30 daily		
(c)	Location:	CBA 151		
(d)	Phone:	(250) 370-4490	Alternative Phone:	
(e)	Email:	howardl@camosun.bc.ca		
(f)	Website:	www.leahhoward.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. Calculate antiderivatives, indefinite integrals, and definite integrals; integrate natural logarithms and trigonometric functions, and use integral calculus to determine the area under a curve.
2. Use numerical integration techniques such as the trapezoidal rule and Simpson's Rule to approximate a definite integral.
3. Use integration in applications involving area between curves, volumes of revolution, moments of area and mass, centroids and centres of mass, and moments of inertia.
4. Evaluate integrals in basic logarithmic, exponential, trigonometric, and inverse trigonometric forms. Use techniques of integration, including integration by parts, trigonometric substitution, and partial fractions.
5. Calculate power-series expansions of functions, including Maclaurin and Taylor series, and use these expansions to evaluate integrals.
6. Compute integrals involving curves and surfaces in three dimensions.
7. Find partial derivatives of functions in more than one variable.
8. Evaluate double integrals using both Cartesian and cylindrical coordinates and use them to calculate volumes under three-dimensional surfaces.

3. Required Materials

- (a) Text: Allyn J. Washington, Basic Technical Mathematics with Calculus, SI version, 9th edition, Pearson Education Canada, 2009.
- (b) Calculator: Only scientific calculators (non-programmable, non-graphing) will be permitted for tests and exams.

4. Course Content and Schedule

1. Applications of Integration

- Applications of the Indefinite Integral (section 26.1)
- Areas by Integration (section 26.2)
- Volumes by Integration (section 26.3)
- Centroids (section 26.4)
- Moments of Inertia (section 26.5)
- Other Applications (section 26.6)

2. Methods of Integration

- The General Power Formula (section 28.1)
- The Basic Logarithmic Form (section 28.2)
- The Exponential Form (section 28.3)
- Basic Trigonometric Forms (section 28.4)
- Other Trigonometric Forms (section 28.5)
- Inverse Trigonometric Forms (section 28.6)
- Integration by Parts (section 28.7)
- Integration by Trigonometric Substitution (section 28.8)
- Integration by Partial Fractions: Nonrepeated Linear Factors (section 28.9)
- Integration by Partial Fractions: Other Cases (section 28.10)

3. Partial Derivatives and Double Integrals

- Functions of two variables (section 29.1)
- Curves and Surfaces in Three Dimensions (section 29.2)
- Partial Derivatives (section 29.3)
- Double Integrals (section 29.4)

4. Expansion of Functions in Series

- Infinite Series (section 30.1)
- Maclaurin Series (section 30.2)
- Certain Operations with Series (section 30.3)
- Computation by Use of Series Expansion (section 30.4)
- Taylor Series (section 30.5)

5. Matrices; Systems of Linear Equations

- Definitions and Basic Operations (section 16.1)
- Multiplication of Matrices (section 16.2)
- Finding the Inverse of a Matrix (section 16.3)
- Matrices and Linear Equations (section 16.4)
- Gaussian Elimination (section 16.5)

5. Basis of Student Assessment (Weighting)

4 Tests (12.5% each):	50%
Final Exam:	50%

If your exam mark is higher than your term mark, then your exam mark will count as 100% of your final mark.

Test Dates: Fri. Apr. 27, Fri. May 11, Fri. May 25, Fri. June 8

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.

Missed Tests: If you miss a test, your final exam mark will be used in place of the test mark.

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	<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, 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. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i>
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.

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 Lab: Technologies Centre (TEC) 142
This free drop-in centre is available for your use to work on math homework and to seek help from the tutor (see hours posted on door).