



CAMOSUN COLLEGE
School of Arts & Science
Department of Mathematics & Statistics

MATH-193-X01
Applied Math for Civil / Mech 2
Winter 2019

COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/math.html>

⚡ Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

(a) Instructor	Leah Howard
(b) Office hours	Monday-Friday 11:30-1:15
(c) Location	CBA 151
(d) Phone	250-370-4490 Alternative: _____
(e) E-mail	HowardL@camosun.ca
(f) Website	www.leahhoward.com

Free math help is also available in the Math Lab, TEC 142. Hours are posted on the door.

2. Intended Learning Outcomes

Upon completion of this course a student will be able to:

- Integrate algebraic, exponential, logarithmic and trigonometric functions.
- Use methods of integration, including integration by parts and non-repeated linear partial fractions
- Find partial derivatives of functions.
- Evaluate double integrals using both Cartesian and polar coordinates and use double integration to calculate volumes under three-dimensional surfaces.
- Solve separable and linear first-order differential equations.
- Solve second-order linear homogeneous and non-homogeneous differential equations with constant coefficients.
- Solve application problems involving first and second-order differential equations, including mass-spring systems.
- Calculate probabilities using counting techniques and basic probability.
- Graph a data set using a variety of presentations. Calculate the mean, median, and standard deviation of a data set and interpret the results.
- Solve problems involving discrete probability distributions such as binomial and Poisson, and continuous probability distributions such as the normal distribution.
- Calculate point estimates and confidence intervals for means of both large and small samples.
- For a bivariate data set, calculate the linear regression line using the method of least squares, either using a scientific calculator or using appropriate software. Calculate and interpret the coefficients of correlation and determination.

3. Required Materials

- (a) A scientific (non-graphing) calculator. The SHARP EL-531 or EL-520 are recommended.
- (b) The suggested homework problems and answers are on D2L. These can be printed by taking a flashdrive containing the file to the Satellite Printshop (in the CBA Atrium).

Optional Textbook: Allyn J. Washington and Michelle Boué, *Basic Technical Mathematics with Calculus*, SI Version, 10th Ed.

4. Course Content and Schedule

CALCULUS

28.1	The General Power Formula
28.2	The Basic Logarithmic Form
28.3	The Exponential Form
28.4	Basic Trig Forms
28.6	Inverse Trig Forms
28.7	Integration by Parts
28.9	Partial Fractions (Non-repeated Linear Factors)
29.3	Intro to Surfaces
29.4	Double Integrals

DIFFERENTIAL EQUATIONS

31.1	Solutions of Differential Equations
31.2	Separation of Variables
31.4	First-Order Linear Differential Equations
31.6	Applications of First-Order DE
31.7	Higher-Order Homogeneous DE with Constant Coefficients
31.8	Auxiliary Equations with Repeated and Complex Roots
31.9	Higher-Order Non-Homogeneous DE with Constant Coefficients
31.10	Applications of Higher-Order DE

STATISTICS

Section 1	Collection and Representation of Data
Section 2	Summarizing Data
Section 3	Probability
Section 4	Discrete Random Variables
Section 5	Binomial and Poisson Distributions
Section 6	Continuous Random Variables
Section 7	The Normal Distribution
Section 8	The Central Limit Theorem
Section 9	Confidence Intervals
Section 10	Linear Regression

5. Basis of Student Assessment

(a) **Weekly Quizzes** 5% total

Quizzes will be at the beginning of class on Tuesdays, starting in Week 2. The two lowest quiz grades will be dropped. There are no make-up quizzes.

(b) **Three Term Tests** 45% total (15% each)

If a student misses a test for any reason, the final exam will be worth 65% of the final grade. There are no make-up tests.

(c) **Final Exam** 50%

The final exam will cover the entire course and will be three hours long. As stated in the College Calendar, "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.

6. Grading System

Standard Grading System (GPA)

Competency Based 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	<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. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)
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. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.