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

MATH-168
Applied Math for Electronics 2
Winter 2021

COURSE OUTLINE

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

Ω *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:** Gilles Cazelais
(b) **Location:** Online
(c) **Phone:** Use email to contact me.
(d) **Email:** Cazelais@camosun.bc.ca
(e) **Website:** https://sites.google.com/site/cazelais/home/math168

2. Intended Learning Outcomes

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

1. Find antiderivatives of functions and use antiderivatives to solve applied problems including applications to electronics.
2. Use the Fundamental Theorem of Calculus to evaluate definite integrals. Calculate areas between curves.
3. Evaluate integrals in power, logarithmic, exponential, and trigonometric forms.
4. Evaluate integrals using substitution, integration by parts, and non-repeated linear partial fractions.
5. Solve first order separable and linear differential equations and applied problems.
6. Solve homogeneous second order linear differential equations and applied problems, including LRC circuits.
7. Solve problems involving counting techniques and basic probability.
8. Calculate the mean, median, and standard deviation of a discrete data set and interpret the results.
9. Perform calculations involving the normal distribution. Calculate confidence intervals for large samples.

3. Textbooks

Basic Technical Mathematics with Calculus, 10th edition, by Washington and Boué

Coursepack for Math 168, by Susie Wieler

4. Chapters and Sections

1. Integration (Ch. 25 of Washington)
  Antiderivatives (section 25.1)
  The Indefinite Integral (section 25.2)
  The Area Under a Curve (section 25.3)
  The Definite Integral (section 25.4)

2. Applications of Integration (Ch. 26 of Washington)
  Applications of the Indefinite Integral (section 26.1)
  Areas by Integration (section 26.2)

3. Methods of Integration (Ch. 28 of Washington)
  The General Power Formula (28.1)
  The Basic Logarithmic Form (28.2)
  The Exponential Form (28.3)
  Basic Trigonometric Forms (28.4)
  Other Trigonometric Forms (28.5)
  Integration by Parts (28.7)
  Integration by Partial Fractions: Nonrepeated Linear Factors (28.9)

4. Differential Equations (Ch. 31 of Washington)
  Solutions of Differential Equations (31.1)
  Separations of Variables (31.2)
  The Linear Differential Equations of First Order (31.4)
  Elementary Applications (31.6)
  Higher-Order Homogeneous Equations (31.7)
  Auxiliary Equations with Repeated or Complex Roots (31.8)
  Solutions of Nonhomogeneous Equations (31.9)
  Applications of Higher-Order Equations (31.10)

5. Introduction to Probability and Statistics (Coursepack)
    1. Counting Techniques and Probability
        1.1 Two Fundamental Principles of Counting
        1.2 Probabilities Involving Equally Likely Outcomes
        1.3 Probability Rules

    2. Summarizing Data
        2.1 Mean
        2.2 Median
        2.3 Standard Deviation

    3. The Normal Distribution

    4. Confidence Intervals
        4.1 Central Limit Theorem
        4.2 Confidence Intervals for Large Samples

    5. Linear Regression

5. Basis of Student Assessment (Weighting)

Assignments: 10%

Three term tests: 55%

Final Exam: 35%

The tentative dates of the term tests are February 11, March 11, and April 8.

Final exams are held from April 19 - 27. You **must** be available at the scheduled time.

The assignments, tests, and final exam will be online. Students will need to upload their work (preferably as a single pdf file) to the D2L dropbox.

6. Grading System

| X | Standard Grading System (GPA)

| | Competency Based Grading System

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.

A. GRADING SYSTEMS *http://camosun.ca/about/policies/index.html*

The following two grading systems are used at Camosun College:

1. 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		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. 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 http://camosun.ca/about/policies/index.html for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: 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	*In progress*: 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	*Compulsory Withdrawal*: 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.