

# COURSE SYLLABUS



**COURSE TITLE:** MATH-168: Applied Math for Electronics 2

**CLASS SECTION:** X01

**TERM:** Winter 2025

**COURSE CREDITS:** 3

**DELIVERY METHOD(S):** face-to-face lectures

Camosun College campuses are located on the traditional territories of the Ləkʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here. Learn more about Camosun's [Territorial Acknowledgement](#).

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## INSTRUCTOR DETAILS

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**NAME:** Gilles Cazalais

**EMAIL:** cazalais@camosun.bc.ca

**OFFICE:** CBA 158

**HOURS:** <https://sites.google.com/site/cazalais/home>

*As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.*

## CALENDAR DESCRIPTION

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MATH 168 provides the second half of the applied mathematics necessary to achieve competency in electronics and computer engineering technology. Students will study integration of algebraic functions, basic applications of integration, methods of integration, differential equations, and a brief introduction to statistics. Applications to electronics are included throughout the course.

### PREREQUISITE(S):

One of:

- C in MATH 100
- C in MATH 166

### CO-REQUISITE(S):

Not applicable

### EXCLUSION(S):

Not applicable

## COURSE LEARNING OUTCOMES / OBJECTIVES

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Upon completion of this course a 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.

## Textbook and Required Material

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Basic Technical Mathematics with Calculus (10th. Edition) by Washington and Boué (Optional)

Coursepack for Math 168 by Susie Wieler

SHARP EL-W516 Calculator (Required)

## CHAPTERS AND SECTIONS

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### 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** (Ch. 22 of Washington and Coursepack)

- Counting Techniques and Probability (Coursepack)
- Summarizing Data (22.2)
- The Normal Distribution (22.3)
- Confidence Intervals (22.4)

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Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced notice is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

**EVALUATION OF LEARNING**

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DESCRIPTION	WEIGHTING
Test 1 (January 29)	15%
Test 2 (February 26)	15%
Test 3 (March 12)	15%
Test 4 (April 2)	15%
Final Exam	40%
<b>TOTAL</b>	<b>100%</b>

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information. <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

**Missing Tests**

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No test extension or make-up test will be offered. If you are unable to write a test for a serious reason such as illness, then you must talk to me as soon as possible and the weight of the missed test will be added to the final exam.

## SCHOOL OR DEPARTMENTAL INFORMATION

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Interurban Math Lab (TEC 142)  
Services: Individual free tutoring and study space  
Schedule: posted on the door  
Format: Drop in – first-come first-served

Chair of the Math & Stats Department: Patrick Montgomery  
Phone: 250-370-3502  
Office: Ewing 268, Lansdowne Campus  
Email: [montgomeryp@camosun.ca](mailto:montgomeryp@camosun.ca)

## STUDENT RESPONSIBILITY

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Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## SUPPORTS AND SERVICES FOR STUDENTS

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Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	<a href="http://camosun.ca/advising">http://camosun.ca/advising</a>
Accessible Learning	<a href="http://camosun.ca/accessible-learning">http://camosun.ca/accessible-learning</a>
Counselling	<a href="http://camosun.ca/counselling">http://camosun.ca/counselling</a>
Career Services	<a href="http://camosun.ca/coop">http://camosun.ca/coop</a>
Financial Aid and Awards	<a href="http://camosun.ca/financialaid">http://camosun.ca/financialaid</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/help-centres">http://camosun.ca/help-centres</a>
Indigenous Student Support	<a href="http://camosun.ca/indigenous">http://camosun.ca/indigenous</a>
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>
Learning Skills	<a href="http://camosun.ca/learningskills">http://camosun.ca/learningskills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>
Office of Student Support	<a href="http://camosun.ca/oss">http://camosun.ca/oss</a>
Ombudsperson	<a href="http://camosun.ca/ombuds">http://camosun.ca/ombuds</a>
Registration	<a href="http://camosun.ca/registration">http://camosun.ca/registration</a>

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Technology Support

<http://camosun.ca/its>

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Writing Centre

<http://camosun.ca/writing-centre>

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If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

### Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the

course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and [camosun.ca/sexual-violence](http://camosun.ca/sexual-violence). To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-3703841

### Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

**Changes to this syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.