# COURSE SYLLABUS

COURSE TITLE: Math 057 – Math for Electrical Trades

CLASS SECTION: S04          TERM: Winter 2025

COURSE CREDITS: 0          DELIVERY METHOD: In Person

*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 explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.*

## INSTRUCTOR DETAILS

NAME: Augustin (Ruse) Rusekampunzi          CLASSROOM: CBA 118          EMAIL: ruse@camosun.ca

HOURS: Mondays & Wednesdays 1230 - 1520 (See class handout for lab and office hours).

This course consists of 6 hours of class time and 4 hours of lab time per week. Lab time includes, but is not limited to, tutorials with an instructor and/or instructional assistants and using the instructional resources in the Help Centre and library, virtually, and in person.

*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

This course covers the second part of ABE Intermediate Mathematics, and provides the introductory algebra and problem-solving skills required for further study in advanced-level algebra, math for technology, and any course or program that requires Math 10. Topics: real numbers, algebraic expressions, equations, inequalities, graphing, and polynomials.

PREREQUISITE(S):          C in MATH 052 - Must be completed prior to taking this course.
CO-REQUISITE(S):
EXCLUSION(S):

## COURSE LEARNING OUTCOMES / OBJECTIVES

Upon successful completion of this course, students will be able to:
1. **Operations with Rational Numbers**
   a. Write fractions as decimals and decimals as fractions
   b. Add, subtract, multiply, divide, and simplify rational numbers
   c. Use order of operations
   d. Graph rational numbers on the number line
   e. Define absolute value

2. **Algebra**
   a. Explain the use of variables
   b. Evaluate algebraic expressions using substitution
   c. Combine like terms and remove parentheses
   d. Solve first degree equations in one variable
   e. Translate a problem into an equation
   f. Use equations to solve problems
   g. Solve simple formulas for a given variable
   h. Use formulas to solve problems

3. **Linear Equations and Graphing**
   a. Draw a Cartesian co-ordinate system
   b. Plot and name points in a Cartesian co-ordinate system
   c. Given an equation in two variables:
       i. determine if an ordered pair is a solution
       ii. find ordered pairs which are solutions
   d. Graph equations of the form $x = a$ and $y = b$,
   e. Define slope and relate to grade and pitch
   f. Graph linear equations using
       i. slope and y-intercept
       ii. two intercepts
       iii. a table of values
   g. Find x- and y-intercepts
   h. Determine the equation of a line, $y = mx + b$, given
       i. its graph
       ii. its slope and a point on the line
       iii. two points on the line
   i. Solve problems using graphs of linear equations

4. **Powers, Roots, and Scientific Notation**
   a. Read and write numbers expressed as powers
   b. Evaluate powers with integral exponents
   c. Apply laws of exponents to simplify expressions
   d. Express numbers using scientific notation
   e. Convert between scientific and standard notation
   f. Determine the square root of a perfect square
   g. Express a square root as a mixed radical in simplest form (numerical radicands only)
   h. Approximate square roots of real numbers using a calculator

5. **Polynomials**
   a. Distinguish between monomials, binomials, trinomials and other polynomials in one variable only
   b. Apply the laws of exponents to variable expressions with integral exponents
   c. Evaluate polynomials by substitution
   d. Add, subtract, and multiply polynomials in one variable
   e. Factor polynomials by removing the largest common factor
   f. Factor binomials of the form $a^2x^2 - b^2y^2$
   g. Factor trinomials of the form $ax^2 + bx + c$ with a = 1 ONLY
   h. Divide a polynomial by a monomial

6. **Trigonometry**
   a) Name parts of a triangle
   b) Find missing side of a right triangle using the Pythagorean Theorem

c) Find the measure of an unknown side or angle of a right triangle using sine, cosine, or tangent ratios
d) Solve problems using right angle trigonometry

7. **Vectors (Supplementary module)**
   Problem sets
   Vector test

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

(a) textbooks: The textbooks may be purchased from the bookstore. A digital version can be freely accessed as below:
   (i) *Basic Review*:  https://pressbooks.bccampus.ca/basicreview/
   (ii) *Intermediate Algebra I* : https://pressbooks.bccampus.ca/math53/
(b) Trigonometry booklet.
(c) Vectors booklet.
(d) Scientific calculator: The Sharp EL 531W model (or similar) will be the only calculator allowed for this course.

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

*Since this is a self-paced math class, this schedule is just a suggestion and the actual time taken to complete each unit may vary.

| WEEK or DATE RANGE | ACTIVITY or TOPIC | OTHER NOTES |
|---|---|---|
| | Unit R \| Basic Review | |
| Week 1 - 2 | CHAPTER 1: Whole Numbers, Integers, and Introduction to Algebra | |
| | 1.1 Whole Numbers | |
| | 1.2 Use the Language of Algebra | |
| | 1.3 Evaluate, Simplify, and Translate Expressions | |
| | 1.4 Add and Subtract Integers | |
| | 1.5 Multiply and Divide Integers | |
| | 1.6 Chapter Review | |
| Week 3 - 4 | CHAPTER 2: Operations with Rational Numbers and Introduction to Real Numbers | |
| | 2.1 Visualize Fractions | |
| | 2.2 Add and Subtract Fractions | |
| | 2.3 Decimals | |
| | 2.4 Introduction to the Real Numbers | |
| | 2.5 Properties of Real Numbers | |
| | 2.6 Chapter Review | |
| | Unit R test | |
| Week 5 - 6 | Unit 1 \| CHAPTER 3: Solving First Degree Equations in One Variable | |
| | 3.1 Solve Equations Using the Subtraction and Addition Properties of Equality | |
| | 3.2 Solve Equations Using the Division and Multiplication Properties of Equality | |
| | 3.3 Solve Equations with Variables and Constants on Both Sides | |

| WEEK or DATE RANGE | ACTIVITY or TOPIC | OTHER NOTES |
|---|---|---|
| | 3.4 Solve Equations with Fraction or Decimal Coefficients | |
| | 3.5 Use a General Strategy to Solve Linear Equations | |
| | 3.6 Solve a Formula for a Specific Variable | |
| | 3.7 Use a Problem-Solving Strategy | |
| | 3.8 Chapter Review | |
| | Unit 1 Final Test | |
| Week 7 - 8 | Unit 2│ CHAPTER 4: Linear Equations and Graphing | |
| | 4.1 Use the Rectangular Coordinate System | |
| | 4.2 Graph Linear Equations in Two Variables | |
| | 4.3 Graph with Intercepts | |
| | 4.4 Understand Slope of a Line | |
| | 4.5 Use the Slope–Intercept Form of an Equation of a Line | |
| | 4.6 Find the Equation of a Line | |
| | 4.7 Chapter Review | |
| | Unit 2 Final Test | |
| Week 9 - 10 | Unit 3 │ CHAPTER 5: Powers, Roots, and Scientific Notation | |
| | 5.1 Use Multiplication Properties of Exponents | |
| | 5.2 Use Quotient Property of Exponents | |
| | 5.3 Integer Exponents and Scientific Notation | |
| | 5.4 Simplify and Use Square Roots | |
| | 5.5 Simplify Square Roots | |
| | 5.6 Chapter Review | |
| | Unit 3 Final Test | |
| Week 12 | Unit 4 │ CHAPTER 6: Polynomials | |
| | 6.1 Add and Subtract Polynomials | |
| | 6.2 Multiply Polynomials | |
| | 6.3 Special Products | |
| | 6.4 Greatest Common Factor and Factor by Grouping | |
| | 6.5 Factor Quadratic Trinomials with Leading Coefficient 1 | |
| | 6.6 Divide Polynomials | |
| | 6.7 Chapter Review | |
| | Unit 4 Final Test | |
| | | |
| | MATH 053 Final Practice | |
| | | |
| Week 13 | MATH 053 Final Exam | |
| | | |
| Week 14 | Trigonometry | |
| | Name parts of a triangle | |
| | Find missing side of a right triangle using the Pythagorean Theorem | |
| | Find the measure of an unknown side or angle of a right triangle using sine, cosine, or tangent ratios | |
| | Solve problems using right angle trigonometry | |
| | Trig test | |
| | | |

| WEEK or DATE RANGE | ACTIVITY or TOPIC | OTHER NOTES |
|---|---|---|
| Week 15 | Vectors | |
| | Problem sets on Vectors | |
| | Vector test | |

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 noticed is required. Deadlines scan be reviewed on the CAL exams page. http://camosun.ca/services/accessible-learning/exams.html

## EVALUATION OF LEARNING

You must pass the Final Exam to pass the course.

| DESCRIPTION | | WEIGHTING |
|---|---|---|
| Unit R test (may not be required; Unit 1 – 4 test weights will be adjusted) | | 10% |
| Unit 1 test | | 10% |
| Unit 2 test | | 10% |
| Unit 3 test | | 10% |
| Unit 4 test | | 10% |
| Trig test | | 10% |
| Vectors test | | 10% |
| Final Exam | | 30% |
| | TOTAL | 100% |

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 policy for more information. http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf

## COURSE GUIDELINES & EXPECTATIONS

The course is designed to be completed in one term. However, it can be completed sooner, depending on a number of factors including your beginning level of math skills, motivation, learning rate, and how much time you can actually study (average 10 – 15 hours per week to complete in 4 months).

If you do not understand something, seek help right away. In addition to your instructor, resources include your family and friends and the Math Help Centres. You can get free online tutoring from our instructional assistants in the Math Help Centres/Labs in E342 (Lansdowne) or CBA 109 (Interurban). Check out the website at http://camosun.ca/services/help-centres/.

## SCHOOL OR DEPARTMENTAL INFORMATION

Students with a record of poor attendance OR poor progress may be restricted from re-registering in the Academic and Career Foundations Department courses.

## STUDENT RESPONSIBILITY

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

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/.

| Support Service | Website |
| --- | --- |
| Academic Advising | http://camosun.ca/advising |
| Accessible Learning | http://camosun.ca/accessible-learning |
| Counselling | http://camosun.ca/counselling |
| Career Services | http://camosun.ca/coop |
| Financial Aid and Awards | http://camosun.ca/financialaid |
| Help Centres (Math/English/Science) | http://camosun.ca/help-centres |
| Indigenous Student Support | http://camosun.ca/indigenous |
| International Student Support | http://camosun.ca/international/ |
| Learning Skills | http://camosun.ca/learningskills |
| Library | http://camosun.ca/services/library/ |
| Office of Student Support | http://camosun.ca/oss |
| Ombudsperson | http://camosun.ca/ombuds |
| Registration | http://camosun.ca/registration |
| Technology Support | http://camosun.ca/its |
| Writing Centre | http://camosun.ca/writing-centre |

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.

## 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](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. 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](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.