

COURSE SYLLABUS



COURSE TITLE: Math 057 Math for Electrical Trades

CLASS SECTION: S07

TERM: Winter 2022 (2022-01-10 - 2022-04-14)

COURSE CREDITS: 0

DELIVERY METHOD(S): Lecture/tutorial

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

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: Richard "Zack" Zajchowski

EMAIL: zackr@camosun.bc.ca

CLASS HOURS: Monday & Wednesday, 12:30 -3:20 PM

OFFICE Hours: By appointment

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 algebra from [MATH 053](#) plus modules on trigonometry and vectors, which provides the skills required for further study in Electrical ELT, advanced-level mathematics, and any course or program that requires Math 10. Topics: real numbers, algebraic expressions, equations, inequalities, graphing, polynomials, trigonometry, and vectors.

Prerequisite

- C in [MATH 052](#)

COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Use mathematics at an ABE Intermediate level with competence
2. Demonstrate knowledge and skills in using the language, principles, and operations of introductory Algebra and Trigonometry
3. Apply a variety of strategies in solving math-related problems
4. Apply knowledge and skills in introductory algebra and trigonometry to solve problems
5. Use knowledge of introductory algebra and trigonometry as a basis for further study in the Electrical ELT program, Advanced-level mathematics, and other courses and programs

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- (a) Textbook: *Developmental Mathematics*, Custom Edition for Camosun College, Marvin Bittinger/Judith Beecher (Content taken from the 9th Edition of *Developmental Mathematics* by the same authors)
- (b) *Unit R Arithmetic Review* booklet
- (c) Module: Trigonometry (*ABE Intermediate Mathematics* module 14), British Columbia
- (d) Module: Vectors (Camosun College)
- (d) Scientific calculator (Sharp EL-531X or EL-531W for next level MATH 072 or 135)

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

Self-paced Instructions

- (a) Before starting unit 1, students must pass a competency test to demonstrate that they can add, subtract, multiply, and divide whole numbers, fractions, and decimals without the use of a calculator (calculators are not allowed for parts of MATH 072 and 172) – use the Arithmetic Review booklet to review these operations before writing the competency test
- (b) For each section of the 057 text listed in the table below, read the explanations, study the Examples, do the Margin Exercises, and then work through and check all or at least some of the more difficult odd-numbered problems in the Exercise Set
- (c) Note that unit 4 includes text chapter 10, 11.1, & 11.2, and a supplement on exponents
- (d) To prepare for the final test for each unit, do the Summary and Review Exercises and write the Chapter Test at the end of the chapter, and correct all of your errors
- (e) Review your final test results with the instructor, and proceed to the next unit if you score 75% or better, or rewrite the final test if you score less than 75% (all test scores count)

| MATH 057 course content | | |
|-------------------------|---|--|
| | <i>Unit R – Arithmetic Review (no calculator)</i> | |
| R.1 | Place value | |

| | | |
|------|---|--|
| R.2 | Comparing numbers | |
| R.3 | Rounding numbers | |
| R.4 | Adding and subtracting whole numbers and decimals | |
| R.5 | Multiplying whole numbers and decimals | |
| R.6 | Dividing whole numbers and decimals | |
| R.7 | Order of operations | |
| R.8 | Operations with fractions | |
| R.9 | Equivalent fractions | |
| R.10 | Adding and subtracting fractions | |
| R.11 | Multiplying fractions | |
| R.12 | Dividing fractions | |
| R.13 | Converting fractions and decimals | |
| R.14 | Estimation | |
| | Practice Test | |
| | Unit R final test (no calculator) | |
| | | |
| | <i>Unit 1 – Real Numbers and Algebraic Expressions</i> (for 4-month completion: 20 days) | |
| 7.1 | Introduction to algebra | |
| 7.2 | The real numbers | |
| 7.3 | Addition of real numbers | |
| 7.4 | Subtraction of real numbers | |
| 7.5 | Multiplication of real numbers | |
| 7.6 | Division of real numbers | |
| 7.7 | Properties of real numbers | |
| 7.8 | Simplifying expressions; order of operations | |
| | Summary and review | |
| | Chapter test | |
| | Unit 1 final test | |
| | | |
| | <i>Unit 2 – Solving Equations and Inequalities</i> (30 days) | |
| 8.1 | Solving equations: the addition principle | |
| 8.2 | Solving equations: the multiplication principle | |
| 8.3 | Using the principles together | |
| 8.4 | Formulas | |
| 8.5 | Applications of percent | |
| 8.6 | Applications and problem solving | |
| 8.7 | Solving inequalities | |
| 8.8 | Applications and problem solving with inequalities | |
| | Summary and review | |
| | Chapter test | |
| | Unit 2 final test | |
| | | |
| | <i>Unit 3 – Graphs of Linear Equations</i> (22 days) | |
| 9.1 | Graphs and applications of linear equations | |
| 9.2 | More with graphing and intercepts | |
| 9.3 | Slope and applications | |
| | Summary and review | |
| | Chapter test | |
| | Unit 3 final test | |

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| | <i>Unit 4 – Polynomials: Operations and Factoring</i> | (28 days) |
| 10.1* | Integers as exponents | |
| 10.2* | Exponents and scientific notation | |
| | *after 10.2, complete supplementary exercises on exponents (#1-25) | |
| 10.3 | Introduction to polynomials | |
| 10.4 | Addition and subtraction of polynomials | |
| 10.5 | Multiplication of polynomials | |
| 10.6 | Special products | |
| 10.7 | Operations with polynomials in several variables | |
| 10.8a | Division of polynomials by a monomial | |
| 11.1ab | Introduction to common factoring | |
| 11.2 | Factoring trinomials of the type $x^2 + bx + c$ | |
| 11.5cd | Factoring difference of squares | |
| | Summary and review | |
| | Chapter test | |
| | Unit 4 final test | |
| | | |
| | MATH 053 review | |
| | MATH 053 final exam | day 105 |
| | | |
| | <i>Unit 5 – Trigonometry</i> (supplementary module) | (25 days) |
| 5.1 | The right triangle | |
| 5.2 | Angles and sides | |
| 5.3 | The Pythagorean theorem (more in 7e text p 1059, 8e text p 1087) | |
| 5.4 | The tangent ratio | |
| 5.5 | Using the tangent ratio | |
| 5.6 | The sine and cosine ratios | |
| 5.7 | Solving triangles | |
| | Practice test | |
| | Unit 5 final test | |
| | | |
| | <i>Unit 6 – Vectors</i> (supplementary module) | |
| p 10 | Problem Sets | |
| | Vectors Final Test | day 130 |

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

- (a) **Tests** 75% of the course grade is based on the average of **all** unit final test scores for units 1–6 (including both passing and failing test scores)

(b) **Exams** 25% of the course grade is based on the average of **all** final exam scores (including both passing and failing exam scores)

Note:Students with a record of low attendance OR lack of progress may be restricted from re-registering in Academic and Career Foundations Department courses.

| DESCRIPTION | WEIGHTING |
|-------------------|-----------|
| Units 1-6 | 75% |
| <u>Final Exam</u> | 25% |
| 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](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>

COURSE GUIDELINES & EXPECTATIONS

The course consists of 6 hours of class time and 4 hours of lab time per week. Lab time is generally spent in the Help Centre where instructional resources are available. Course completion time will vary for each student, depending on a number of factors, including your current level of math skills, motivation, learning rate, and how much time you have to study math, either at the college or at home. Students generally need to spend 5–15 hours of study time per week to complete each math course within a reasonable amount of time.

SCHOOL OR DEPARTMENTAL INFORMATION

Grading System – Standard Grading System <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>

| | | | | | | | |
|----|---------|----|--------|----|-------------|---|--------|
| A+ | 90–100% | B+ | 77–79% | C+ | 65–69% | D | 50-59% |
| A | 85–89% | B | 73–76% | C | 60–64% | F | 40-49% |
| A– | 80–84% | B– | 70–72% | IP | in progress | | |

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/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

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.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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. To contact the Office of Student Support: 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.