COURSE SYLLABUS

COURSE TITLE:	Math 077
CLASS SECTION:	D01
TERM:	2021S
COURSE CREDITS:	4
DELIVERY METHOD(S):	Online Lecture

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.

The COVID-19 pandemic has presented many challenges, and Camosun College is committed to helping you safely complete your education. Following guidelines from the Provincial Health Officer, WorkSafe BC, and the B.C. Government to ensure the health and wellbeing of students and employees, Camosun College is providing you with every possible protection to keep you safe. Our measures include COVID Training for students and employees, health checks, infection control protocols including sanitization of spaces, PPE and ensuring physical distancing. For details on these precautions please follow this link: http://camosun.ca/covid19/faq/covid-faqs-students.html. However, if you're at all uncomfortable being on campus, please share your concerns with your Instructor. If needed, alternatives will be discussed.

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:	Crystal Lomas
EMAIL:	LomasC@camosun.bc.ca
OFFICE:	Collaborate (Ewing 270)
HOURS:	By appointment, please email

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

Students will develop the foundation in algebra and trigonometry that will enable further study of mathematics or satisfy program and entrance requirements for Precalculus 11. Topics include linear equations and inequalities; function notation; linear functions; systems of linear equations in two variables; polynomial, rational, and radical expressions and equations; quadratic functions and equations; and triangle trigonometry including the Sine and Cosine Laws.

PREREQUISITE(S): One of: C in Foundations of Math and Pre-calculus 10, C- in Pre-calculus 11, C in MATH 053, C in MATH 075

CO-REQUISITE(S): None.

EXCLUSION(S): None.

COURSE LEARNING OUTCOMES / OBJECTIVES

The learning outcomes in this course meet the required learning outcomes in Mathematics: Advanced Level (Algebraic) as outlined in the BC ABE Articulation Handbook 2018/19 Edition. Upon successful completion of the course, a student will be able to:

1. Demonstrate basic algebraic skills, and use a scientific calculator to evaluate complex expressions with emphasis on using special keys to perform a variety of functions. In particular:
    a. perform operations with real numbers including absolute value and exponential notation,
    b. simplify expressions using rules for order of operations and properties of exponents,
    c. translate common language into algebraic expressions,
    d. evaluate algebraic expressions by substitution,
    e. simplify algebraic expressions with nested parentheses, and
    f. use scientific notation.
2. Solve linear equations and inequalities in one variable. In particular:
    a. solve first degree/linear equations in one variable,
    b. solve simple formulas for a given variable,
    c. solve and graph linear inequalities in one variable,
    d. write set-builder and/or interval notation for the solution set or graph of an inequality,
    e. use linear equations, formulas and linear inequalities to solve applied problems,
    f. find the union or intersection of two sets,
    g. solve and graph compound inequalities (conjunctions and disjunctions), and
    h. simplify expressions containing absolute value and solve absolute value equations.
3. Employ two-dimensional graphing techniques for relations and functions. In particular:
    a. write linear relations in slope-intercept form,
    b. graph linear equations and non-linear equations using a table of values,
    c. graph linear equations using the y-intercept and slope and using x-and y-intercepts,
    d. graph horizontal and vertical lines,
    e. find the slope of a line given two points on the line,
    f. find the equation of a line given graphic data: the slope and y-intercept, the slope and one point, or two points on the line,
    g. determine whether a pair of lines is parallel, perpendicular or neither,
    h. find the equation of a line parallel or perpendicular to a given line and through a given point,
    i. use the definition of function and the vertical line test to distinguish between functions and non-functions,
    j. use and interpret function notation to evaluate functions for given x-values and find x-values for given function values,
    k. determine the domain and range of a function,
    l. use a table of values to graph linear functions and non-linear functions such as quadratic, cubic, square root, reciprocal, and absolute value functions, and
    m. graph linear inequalities in two variables.
4. Solve systems of linear equations in two variables. In particular:
    a. solve by graphing, substitution and elimination methods,
    b. determine if a system of equations will have no, one, or an infinite number of solutions, and
    c. use systems of equations to solve applied problems.
5. Solve foundational problems with polynomial expressions and equations. In particular:
    a. determine the degree of a polynomial,
    b. distinguish between monomials, binomials, trinomials, and other polynomials,
    c. add, subtract, multiply polynomials,
    d. divide polynomials by monomials,

e. factor polynomials using an appropriate strategy or a combination of techniques: common factors, difference of squares, difference and sum of cubes, perfect square trinomials, trial/error, or grouping,
f. solve polynomial equations using the principle of zero products,
g. solve applied problems using polynomial equations/functions,
h. divide polynomials and binomials using long division, and
i. divide polynomials and binomials using synthetic division.

6. Solve foundational problems involving rational expressions. In particular:
   a. identify situations and find values for which a rational expression will be undefined,
   b. simplify rational expressions,
   c. add, subtract, multiply and divide rational expressions,
   d. solve rational equations and check the solutions,
   e. solve formulas involving rational expressions for a given variable,
   f. solve applied problems that can be modelled with rational equations,
   g. simplify complex fractions,
   h. express variations in the form of equations (direct, inverse, joint, combined), and
   i. solve problems involving direct, inverse, joint and combined variation.
7. Perform mathematical operations involving radicals and rational exponents. In particular:
   a. identify situations and find values for which a radical expression will be undefined,
   b. write radicals as powers with rational exponents and vice-versa,
   c. use rational exponents to simplify radical expressions,
   d. simplify, add, subtract, multiply and divide radical expressions (numeric or algebraic,)
   e. rationalize denominators in fractional expressions containing radicals (including the use of conjugates,)
   f. solve equations involving radical expressions or powers with rational exponents and check for extraneous roots,
   g. solve formulas involving powers and square roots for a given variable,
   h. solve applied problems which can be modelled by radical equations, and determine if solutions are reasonable given the context of the problem,
   i. identify imaginary and complex numbers and express them in standard form, and
   j. add, subtract, multiply, and divide complex numbers.
8. Develop facility with solving problems involving quadratic functions. In particular:
   a. solve quadratic equations by factoring, using the principle of square roots, completing the square, and employing the quadratic formula,
   b. use the discriminant to identify the number and type of solutions of a quadratic equation,
   c. write a quadratic equation given its solutions,
   d. solve rational and radical equations reducible to a quadratic pattern and check that answers are reasonable,
   e. solve selected polynomial equations that can be factored simplifying to linear and/or quadratic factors,
   f. graph quadratic functions of the form $f(x) = a(x-h)^2 + k$ and demonstrate translations, reflections, and stretching/shrinking resulting from changes in the function equation,
   g. find the vertex, line of symmetry, minimum or maximum values, x-and y-intercepts, domain and range, given the function $f(x) = a(x-h)^2 + k$,
   h. rewrite $f(x) = ax^2 + bx + c$ as $f(x) = a(x-h)^2 + k$ by completing the square,
   i. solve problems that can be modelled using quadratic equations such as maximum and minimum problems,
   j. solve quadratic equations having complex number solutions.
9. Use triangle trigonometry to solve problems involving all types of triangles. In particular:
   a. label the sides of a right triangle with respect to a given angle,
   b. determine sine, cosine, and tangent ratios of an angle in a right triangle using the side lengths,

c. use a scientific calculator to find the trigonometric value for a given angle and find an angle given its trigonometric value,
d. solve right triangles and applied problems using the basic trigonometric ratios, the Pythagorean Theorem, and the sum of the angles of a triangle (180°),
e. use the Law of Sines and the Law of Cosines to solve non-right (oblique) triangles and applied problems,
f. determine the quadrant for positive and negative angles in standard position,
g. identify coterminal angles,
h. identify reference angles,
i. determine all trigonometric function values for angles in standard position,
j. solve trigonometric equations involving the primary functions over a specific domain,
k. find exact values of the trigonometric ratios for special angles, and
l. find exact values of the trigonometric functions for angles with special reference angles.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Textbook:	Intermediate Algebra 13th edition by M.L. Bittinger, with digital access code for MyLab Math (available through the college bookstore). If you do not want a print text, then you can purchase the standalone digital code since it grants access to the digital textbook and student solutions manual. Our CourseID is lomas62225.
Tech:	Computer/tablet, headphones or speakers, internet access. Microphone recommended.
Calculator:	Sharp EL-531 scientific calculator or use the online calculator at https://www.calculator.net/scientific-calculator.html

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.

Collaborate Lectures (access through D2L): Mon, Tues, Wed, Thurs 2:30 – 4:20 pm

WEEK or DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
May 3-6	Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6abcd	
May 10-13	Sections 2.1, 2.2, 2.3, 2.4	Chapter 1 Post-Test May 11
May 17-20	Sections 2.5, 2.6, 3.1, 3.2	Chapter 2 Post-Test May 19
May 25-27	Sections 3.3, 3.4a, 3.7ab	Chapter 3 Post-Test May 27
May 31-June 3	Sections 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8	
June 7-10	Sections 5.1, 5.2, 5.3, 5.4	Chapter 4 Post-Test June 8
June 14-17	Sections 5.5, 5.6c, 5.7, 5.8	
June 21-24	Sections 6.1, 6.2, 6.3, 6.4	Chapter 5 Post-Test June 21

WEEK or DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
June 28-30	Sections 6.5, 6.6, 6.7, 6.8	
July 5-8	Sections 7.1, 7.2, 7.3, 7.4	Chapter 6 Post-Test July 6
July 12-15	Sections 7.5, 7.6, 7.7a	
July 19-22	Trig Sections 1, 2, 3	Chapter 7 Post-Test July 19
July 26-29	Trig Sections 4, 5	Trig Post-Test July 29
Aug 3-5	Course Review	
Aug 9-23	Final Exam (to be scheduled by College Registrar)	

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

DESCRIPTION		WEIGHTING
Section Homework (1 per section)		10%
Chapter Review Quizzes (8, one per chapter)		10%
Chapter Review Assignments (8, one per chapter)		20%
Chapter Post-Tests (8, one per chapter)		30%
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 & EXPECATIONS

It is expected that all course items will be completed on time. If you must miss a course item due to an emergency, contact me as soon as possible.

Chapter Skills Check (0%)

I recommend completing these Checks and the associated Reviews before we start the chapter in class. Showing mastery of learning objectives on this assessment will give credit for some questions in the Chapter Skills Review.
Not for marks. One attempt. Timed.

Chapter Skills Review (0%)

Not for marks. Three attempts per question.

Chapter Pre-Test (0%)

Showing mastery of learning objectives on this assessment will give credit for some questions in the Section Homework.
Must be submitted to gain access to the Section Homework. Not for marks. One attempt. Timed.

Section Homework (10% total)

Full marks if completed by the due date listed on MLM (usually the start of the next class). Half marks for any questions completed after the due date but before the Chapter Post-Test. No marks awarded after the Post-Test. Links to lecture video and textbook section included in homework.
Three attempts per question.

Chapter Review Quiz (10% total)

Showing mastery of learning objectives on this assessment will give credit for some questions in the Chapter Review Assignment.
One attempt. Timed.

Chapter Review Assignment (20% total)

Three attempts per question.

Chapter Post-Test (30% total)

Completed during class time (see pacing schedule for dates). Written work must be submitted by 5:00 pm on the day of the test.
One attempt. Timed.

Final Exam (30%)

The comprehensive final exam is on MyLab Math and is based on the entire course. It must be written at the time scheduled by the Registrar's Office (date will be posted on May 21).
One attempt. Timed.

Class Time
During class times (Mon-Thurs, 2:30-4:20 pm), we will meet via Collaborate for lectures and practice (except on scheduled test days).

SCHOOL OR DEPARTMENTAL INFORMATION

Free tutoring: You can email mathlab@camosun.ca or book a video chat at https://outlook.office365.com/owa/calendar/MathLab@camosun.ca/bookings/

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.