

COURSE SYLLABUS



COURSE TITLE:	Math 073 – Advanced Math 2
CLASS SECTION:	DS01
TERM:	Summer 2024
COURSE CREDITS:	4
DELIVERY METHOD(S):	Self-paced, Online

Camosun College respectfully acknowledges that our campuses are situated on the territories of the Ləkʷəŋən (Songhees and Kosapsum) and WSÁNEĆ peoples. We honour their knowledge and welcome to all students who seek education here.

INSTRUCTOR DETAILS

NAME:	Crystal Lomas (May-June) & Muhammad Awais (July-Aug)
EMAIL:	LomasC@camosun.ca; AwaisM@camosun.ca
OFFICE:	Ewing 270 or Zoom
HOURS:	1:30-2:20 Mon-Thurs (May-June)

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 refresher course provides a foundation for the further study of mathematics. Topics include rational and radical expressions and equations, quadratic equations and functions, right triangle trigonometry, trigonometric functions of any angle and the Sine and Cosine Laws.

PREREQUISITE(S):	One of: C in Pre-Calculus 11, C in Foundations of Math 12, C in MATH 077, C+ in MATH 072, C+ in MATH 075, C+ in MATH 135, Assessment
CO-REQUISITE(S):	None.
EQUIVALENCIES:	None.

COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Use a scientific calculator to evaluate complex expressions with emphasis on using special keys to perform a variety of functions.
2. Develop facility with polynomial expressions and equations. In particular:
 - a. divide polynomials and binomials using long division, and
 - b. divide polynomials and binomials using synthetic division.
3. Perform mathematical operations 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.
4. 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.
5. 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.
6. Understand the basics of triangle trigonometry. 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.

After completion of Math 072 *and* 073, students will meet the outcomes for Mathematics: Advanced Level (Algebraic) as identified in the 2018-2019 Adult Basic Education Articulation Handbook found at <https://www.bctransferguide.ca/transfer-options/adult-basic-education/past-abe-guides/>

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Textbook: *Intermediate Algebra* 13th edition by M.L. Bittinger (print optional, MyLab Math Access Code required).

You can purchase the MyLab Math Access Code from the Camosun bookstore at https://www.camosuncollegebookstore.ca//buy_access_codes.asp.

There may also be textbook + access code bundles or used textbooks available at the Camosun bookstore. If you do get a used textbook, you'll still need an unused MyLab Math Access Code.

The MyLab Math Access Code for the textbook allows access to the digital textbook, practice problems, videos, assignments, practice tests, and tests. **Registration instructions are on D2L.**

For the Trigonometry Unit (Unit 5), the textbook is a pdf posted on D2L (Trig 6.1*-6.3* and 8.1*-8.2*).

Calculator: The recommended calculator is Sharp EL-531. This is the calculator used for demonstrations in class. You are **not permitted** to use a calculator with functions that allow graphing or algebraic manipulations. These calculator rules are to ensure you learn the skills necessary for success in future work.

Tech: You will need a computer or mobile device that can access Zoom for class and MyLab Math for coursework. A scanner or phone app is required for some course submissions. A microphone and headphones are recommended for communication in class and office hours.

Other: Graph paper, ruler/straight edge, pens/pencils/erasers.

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.

The following schedule is suggested to complete Math 073 in one term. You may complete it faster, or if you need more time, you can re-register for another term. Marks may be carried forward for up to one year. You can take up to 3 terms to complete a course.

Important: In order to receive an IP (In-Progress) grade, you must show progress and maintain communication with your instructor throughout the semester by completing a mandatory Check-in Quiz via D2L every two weeks.

The last day of class and the last day to write a test (including final exam) is **Thursday, August 15.**

Unit 1: Chapter 4 Polynomials and Polynomial Functions (4.1-4.8)

Unit 2: Chapter 5 Rational Expressions, Equations, Functions (5.1-5.6ab, 5.7-5.8)

Unit 3: Chapter 6 Radical Expressions, Equations, Functions (6.1-6.8)

Unit 4: Chapter 7 Quadratic Equations and Functions (7.1-7.7a)

Unit 5: Trigonometry (Trig 6.1*-6.3*, 8.1*-8.2*)

WEEK or DATE RANGE	HOMEWORK and PRACTICE TESTS	TESTS
1: May 6-10	Intro, 4.1, 4.2, 4.3, 4.4, 4.5	
2: May 13-17	4.6, 4.7, 4.8, Chapter 4 Practice Test	
3: May 21-24	5.1, 5.2	Ch 4 (Unit 1) Test
4: May 27-31	5.3, 5.4, 5.5, 5.6c (omit 5.6ab), 5.7	
5: June 3-7	5.8, Chapter 5 Practice Test	Ch 5 (Unit 2) Test
6: June 10-14	6.1, 6.2, 6.3, 6.4	
7: June 17-21	6.4, 6.5, 6.6, 6.7	
8: June 24-28	6.8, Chapter 6 Practice Test	Ch 6 (Unit 3) Test
9: July 1-5	7.1, 7.2, 7.3	
10: July 8-12	7.4, 7.5, 7.6, 7.7a	
11: July 15-19	7.7a, Chapter 7 Practice Test	Ch 7 (Unit 4) Test
12: July 22-26	Trig 6.1*, Trig 6.2*, Trig 6.3*	
13: July 29-Aug 2	Trig 8.1*, Trig 8.2*, Trig Practice Test	
14: Aug 5-9	Exam Review	Trig (Unit 5) Test
15: Aug 12-16	Exam Review	Last day for Test/Exam: Aug 15

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](https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams). <https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
MyLab Math Homework Assignments (~1 per section)	20%
MyLab Math Practice Tests (1 per Unit)	10%
MyLab Math Unit Test (1 per Unit)	35%
MyLab Math Final Exam (1, cumulative)	35%
	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](https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf) policy for more information.
<https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

Homework Assignments

For each section, after watching the section video (and/or reading the textbook section) and completing the examples, go to the Assignments tab on MyLab Math and complete the associated homework assignment. In general, there is a MyLab Math homework assignment for each section (the first one covers textbook section 4.1 and is called simply 4.1). You get three attempts on each question.

You can use whatever resources you want for the homework assignments, but make sure you can complete the questions without any resources by the time you're done.

Practice Tests

After completing the homework assignments for each section, access the Practice Test for the chapter on MyLab Math. Show all your work on paper, clearly numbering each question, then enter the answers in MyLab Math. When you're done your Practice Test, scan and save your written work as a **single pdf file**, then use the Assignment tool in D2L to submit. You will not receive credit for the practice test unless satisfactory work is shown.

There is a time limit for each Practice Test. No help, formulas, textbooks, or other resources are allowed for practice tests. You may rewrite each practice test once for a chance at a better score.

Unit (Chapter) Tests

After completing all the homework and the practice test for a Unit, you can book your Unit Test. For your first test, we will find a time that works for us both. For subsequent tests you can choose when to write. Please email me when you're ready to book your test.

Show all your work on paper, clearly numbering each question, then enter the answers in MyLab Math. Submit your written work **within half an hour** of writing the test by scanning it as a **single pdf file**, then using the Assignment tool in D2L. You will not receive credit for the test unless satisfactory work is shown.

Re-tests are only provided if you score less than 65%. Up to two re-tests are allowed per unit. There is a time limit on each chapter test.

No help, formulas, textbooks, or other resources are allowed for any test.

Note: If you would prefer to write your Unit Tests in person at the Lansdowne campus during Math Help Centre hours, we can accommodate that. Please talk to your instructor for details.

Final Exam

When you have completed all the tests and the exam review, and feel that you're ready, please let me know when you would like to write your exam. There are **no rewrites** for the final exam. You will need approximately 3 hours to write the final exam, and it covers material from the entire course. There is a time limit of 4 hours.

Access the Final Exam through MyLab Math. Show all your work on paper, clearly numbering each question, then enter the answers in MyLab Math. Submit your written work **within half an hour** of writing the test by scanning it as a **single pdf file**, then using the Assignment tool in D2L. You will not receive credit for the test unless satisfactory work is shown.

No help, formulas, textbooks, or other resources are allowed for the final exam.

Class Time

During class times, we will meet on Zoom (link on D2L). Content may consist of examples, demonstrations, individual student questions, etc., based on student needs and interests. Keep a record of any homework problems or concepts you struggle with so we can go over them in class.

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 camosun.ca/services.

Support Service	Website
Academic Advising	camosun.ca/services/academic-supports/academic-advising
Accessible Learning	camosun.ca/services/academic-supports/accessible-learning
Counselling	camosun.ca/services/health-and-wellness/counselling-centre
Career Services	camosun.ca/services/co-operative-education-and-career-services
Financial Aid and Awards	camosun.ca/registration-records/financial-aid-awards
Help Centres (Math/English/Science)	camosun.ca/services/academic-supports/help-centres
Indigenous Student Support	camosun.ca/programs-courses/iecc/indigenous-student-services
International Student Support	camosun.ca/international
Learning Skills	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills
Library	camosun.ca/services/library

Support Service	Website
Office of Student Support	camosun.ca/services/office-student-support
Ombudsperson	camosun.ca/services/ombudsperson
Registration	camosun.ca/registration-records/registration
Technology Support	camosun.ca/services/its
Writing Centre	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills

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 Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: <https://camosun.libguides.com/academicintegrity/welcome>
Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf> for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

Academic Accommodations for Students with Disabilities

Camosun College is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging appropriate academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a documented disability and think you may need accommodations, you are strongly encouraged to contact the Centre for Accessible Learning (CAL) and register as early as possible. Please visit the CAL website for more information about the process of registering with CAL, including important deadlines: <https://camosun.ca/cal>

Academic Progress

Please visit <https://camosun.ca/sites/default/files/2023-02/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 <https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <https://camosun.ca/registration-records/tuition-fees#deadlines>.

Grading Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

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 (see [Medical/Compassionate Withdrawals policy](#)). Please visit <https://camosun.ca/services/forms#medical> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence

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 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 Policy: <https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf> and camosun.ca/services/sexual-violence-support-and-education.

To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-370-3841

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 <https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Looking for other policies?

The full suite of College policies and directives can be found here: <https://camosun.ca/about/camosun-college-policies-and-directives>

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.