

# COURSE SYLLABUS



COURSE TITLE:	Math 072 – Advanced Math 1
CLASS SECTION:	S02
TERM:	Fall 2023
COURSE CREDITS:	4
DELIVERY METHOD(S):	Self-paced

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](#).

For COVID-19 information please visit <https://camosun.ca/about/covid-19-updates>

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*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

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NAME:	Dr. Muhammad Awais
EMAIL:	<a href="mailto:awaism@camosun.ca">awaism@camosun.ca</a>
WEBSITE:	Desire2Learn (D2L) <a href="http://online.camosun.ca">http://online.camosun.ca</a>
OFFICE:	E252
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

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This course provides the algebra skills required for statistics, criminal justice and some business programs. Topics include linear equations and inequalities, rearranging formulas, linear equations in two variables, systems of linear equations, integer and rational exponents, polynomials and factoring.

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 057, Assessment
CO-REQUISITE(S):	None.
EXCLUSION(S):	None.

## COURSE LEARNING OUTCOMES / OBJECTIVES

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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, and
  - e. simplify algebraic expressions with nested parentheses.
2. Solve linear equations and inequalities. 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. solve absolute value equations.
  3. Employ 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 systems of linear equations in two variables 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. Develop facility 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, and
    - g. solve applied problems using polynomial equations/functions.

After completion of Math 072 **and** 073, students will meet the outcomes as identified in the Adult Basic Education Articulation Handbook found at [https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/abe\\_guide.pdf](https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/adult-education/abe_guide.pdf)

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

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Textbook: *Intermediate Algebra* 13th edition by M.L. Bittinger.

If you wish to complete MyLabMath (MLM) Assignments and Practice Tests, you will need to purchase an Access Code either alone or bundled with your text. Registration instructions are on D2L and our CourseID is **awais51540**.

The Access Code allows access to the digital textbook, practice problems, videos, and assignments and practice tests.

For the Trigonometry Unit, the textbook is a pdf posted on D2L (AlgTrig).

Calculator: The only calculator permitted for tests and the final exam is the Sharp EL-531 scientific calculator. There are some parts of the course that must be done without a calculator.

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

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The following schedule is suggested to complete Math 072 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. If you wish to complete both Math 072 and Math 073 in one semester, a suggested schedule is on D2L.

It will take at least 8-12 hours of studying per week to finish the course in one term.

The last day to write a test or the final exam is **December 8**.

Unit 1: Just in Time Review (1-20) No Calculator

Unit 2: Chapter 1 Solving Linear Equations and Inequalities (1.1-1.5, 1.6 a-d)

Unit 3: Chapter 2 Graphs, Functions and Applications (2.1-2.6) No Calculator

Unit 4: Chapter 3 Systems of Equations (3.1-3.3, 3.4a, 3.7ab)

Unit 5: Chapter 4 Polynomials and Polynomial Functions (4.1-4.8)

Wk	Monday	Tuesday	Wednesday	Thursday	Friday
1		Just in Time Review (JITR)	JITR	JITR	JITR
2	JITR Review	JITR Practice Test	JITR Review	Unit 1 Test	1.1 Solving Equations
3	1.1 Solving Equations	1.2 Formulas and Applications	1.3 Applications and Problem Solving	1.3 Applications and Problem Solving	1.4 Sets, Inequalities, and Interval Notation
4	<i>Holiday Victoria Day</i>	1.4 Sets, Inequalities, and Interval Notation	1.5 Intersections, Unions, and Compound Inequalities	1.5 Intersections, Unions, and Compound Inequalities	1.6(a-d) Absolute-Value Equations
5	Chapter 1 Review	Chapter 1 Practice Test	Chapter 1 Review	Unit 2 Test	2.1 Graphs of Equations
6	2.1 Graphs of Equations	2.2 Functions and Graphs	2.3 Finding Domain and Range	2.4 Linear Functions: Graphs and Slope	2.4 Linear Functions: Graphs and Slope
7	2.5 More on Graphing Linear Equations	2.6 Finding Equations of Lines: Applications	2.6 Finding Equations of Lines: Applications	Chapter 2 Review	Chapter 2 Practice Test
8	Chapter 2 Review	Unit 3 Test	3.1 Systems of Equations in Two Variables (omit consistency & dependence)	3.2 Solving by Substitution	3.3 Solving by Elimination
9	3.3 Solving by Elimination	3.4a Solving Applied Problems	3.4a Solving Applied Problems	3.7ab Systems of Inequalities in 2 Variables	Chapter 3 Review
10	<i>Holiday</i>	Chapter 3 Practice Test	Chapter 3 Review	Unit 4 Test	4.1 Introduction to Polynomials
11	4.2 Multiplication of Polynomials	4.3 Introduction to Factoring	4.3 Introduction to Factoring	4.4 Factoring Trinomials: $x^2 + bx + c$	4.5 Factoring Trinomials: $ax^2 + bx + c$
12	4.5 Factoring Trinomials: $ax^2 + bx + c$	4.6 Special Factoring	4.6 Special Factoring	4.7 Factoring: A General Strategy	4.7 Factoring: A General Strategy
13	4.8 Applications of Polynomial Equations	4.8 Applications of Polynomial Equations	Chapter 4 Review	Chapter 4 Practice Test	Chapter 4 Review
14	Chapter 4 Review	Unit 5 Test	Exam Review	Exam Review	Exam Review
15	<i>Holiday</i>	Final Exam		Dec 8: Last Day to Write tests/exam	

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

## EVALUATION OF LEARNING

Choose Weighting 1 or Weighting 2:

DESCRIPTION	WEIGHTING 1	WEIGHTING 2
Unit Tests (5)	35%	60%
MLM Assignments (~28)	20%	0%
MLM Practice Tests (5)	10%	0%
Final Exam	35%	40%
TOTAL	100%	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>

### Unit Tests

- There are five (5) unit tests, equally-weighted.
- When you feel you are prepared to take a test, please ask your instructor for test authorization. This will give you permission to write your test in the Math Help Centre (E342). You can write your tests any time the Math Help Centre is open (Usually Mon-Thurs 4-8 pm).
- On each unit test, if you score at least 65%, you can move on to the next unit or reattempt once for a better score. If you do not score at least 65%, you must re-study and re-take the test until you get at least 65%.
- You will need approximately 1.5 hours to complete each test, so the latest you should begin is 6:30 pm.
- There is no calculator allowed on Units 1 and 3. For the other tests, the Sharp EL-531 scientific calculator is permitted.
- Papers, references, books, etc., may not be used on tests.

### Final Exam

- The final exam is cumulative and 3 hours long.
- There are no rewrites for the final exam.
- The last day to write the final exam is December 8.
- No electronic device other than the approved calculator may be used on the exam. There is a no-calculator section of the exam (on Units 1 & 3) worth 40% of the exam grade.
- Papers, references, books, etc., may not be used on the exam.

### MLM Assignments

- There is approximately one assignment per section of the text.
- Three attempts on each question.

### MLM Practice Tests

- There is one practice test per Unit.
- Two attempts.

## COURSE GUIDELINES & EXPECTATIONS

### D2L

This class uses Desire2Learn (D2L), an online course management system. Course-related materials, grades, and announcements will be available on D2L. A link to D2L is at the top of the camosun.ca webpage. Manage notifications by clicking on your name in the top right corner of D2L.

### Class Time

Our class meets twice a week (Mondays and Wednesdays, 5:30 pm - 7:50 pm), but there is no lecture. During class times, you can work on recommended exercises and study at your own pace while getting support from the instructor when you need it. You can work in the classroom or at home.

In the classroom:

1. Check in with me so I can record your attendance and keep informed of your progress.
2. Bring your textbook, calculator, and work materials to every class.
3. If you have a question, please write your name on the whiteboard, continue working, and I will help as soon as I can.

Working through the course

- Please see the Recommended Exercises handout for details about working through the course.
- When doing practice exercises, label each question clearly and show your work. This makes it easy to review for the test and to get help if you don't understand.
- If you have trouble with an exercise, highlight the question and make a note in your margin about what you don't understand.

Transferring Grades

- If you are continuing this course from a previous semester, please let me know. You won't need to redo any of the Units you've successfully completed within the last year.
- If you score at least 80% on Math 072 Unit 5 and continue into Math 073 within the next year, you may be able to skip Math 073 Unit 1. Speak to your instructor for more information.

## SCHOOL OR DEPARTMENTAL INFORMATION

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Math Help

You can get free face-to-face or online tutoring from our instructional assistants in the Math Help Centre/Lab in E342/E224. Hours are posted on the doors and on the website <http://camosun.ca/services/help-centres/>.

## 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/>.

Support Service	Website
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>

Support Service	Website
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>
Technology Support	<a href="http://camosun.ca/its">http://camosun.ca/its</a>
Writing Centre	<a href="http://camosun.ca/writing-centre">http://camosun.ca/writing-centre</a>

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.

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## 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.