



COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/math.html#MATH155>

Ω Please note: the College electronically stores this outline for five (5) years only.

It is **strongly recommended** you keep a copy of this outline with your academic records.

You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

| | | | | |
|-----|---------------|---|--------------------|--|
| (a) | Instructor: | Patricia Wrean (Pat) | | |
| (b) | Office Hours: | Posted on office door and website | | |
| (c) | Location: | CBA 153 | | |
| (d) | Phone: | (250) 370-4542 | Alternative Phone: | |
| (e) | Email: | wrean@camosun.bc.ca | | |
| (f) | Website: | http://wrean.disted.camosun.bc.ca/math155/ | | |

2. Intended Learning Outcomes

Upon completion of this course the student will be able to:

1. Use correct terminology, notation, and symbolic processes in logic and Boolean algebra to facilitate proper programming skills and logical thinking.
 - a. Use truth tables to define the logical connectives “and”, “or”, and “not.”
 - b. Complete truth tables and use the laws of logic to simplify logical and Boolean expressions and prove equivalence.
 - c. Use the conditional and related logical forms to translate English expressions into logical symbols and analyze conditional and biconditional propositions.
2. Explain basic concepts of relational algebra and apply them to databases.
 - a. State the definitions of sets and ordered n-tuples, including appropriate notation.
 - b. Define and identify relations and functions.
 - c. Determine the appropriate commands for making simple queries to a database.
3. Use sequences and series to solve applied problems and explain recursive algorithms used in programming.
 - a. Solve problems involving general and recursive forms for sequences, including the arithmetic and geometric cases.
 - b. Evaluate sums for arithmetic and geometric series.
4. Analyze exponential and logarithmic expressions commonly used in computer programming.
 - a. Simplify exponential and logarithmic expressions
 - b. Sketch graphs of desired exponential and logarithmic functions.
 - c. Use logarithmic scales to graph appropriate data sets.
 - d. Describe the response of various types of computer algorithms to changes in input size.

3. Required Materials

- (a) Texts - All course materials are online and available at the course website.
- (b) Calculator - Only ordinary scientific calculators (non-graphing, non-programmable) are permitted. The use of other electronic devices such as cell phones, MP3 players, iPods, electronic translators, etc., during exams is not allowed.

4. Course Content and Schedule

Binary, Octal, and Hexadecimal

- 1.1 Decimal and Octal
- 1.2 Binary and Hexadecimal
- 1.3 Converting from Decimal
- 1.4 Converting between Binary, Octal, and Hexadecimal

Logic

- 2.1 Introduction to Logic
- 2.2 Venn Diagrams
- 2.3 Logical Equivalence
- 2.4 Boolean Algebra
- 2.5 Laws of Logic
- 2.6 More Laws of Logic
- 2.7 The Conditional
- 2.8 The Biconditional

Sequences and Series

- 3.1 Introduction to Sequences and Series
- 3.2 Arithmetic Sequences and Series
- 3.3 Geometric Sequences and Series

Exponents and Logs

- 4.1 Exponential Equations
- 4.2 Exponential Graphs
- 4.3 Compound Interest and Exponential Growth
- 4.4 Logarithmic Equations
- 4.5 Logarithmic Graphs
- 4.6 Big O

5. Basis of Student Assessment (Weighting)

Grade Calculation: The final grade will be calculated according to the following breakdown:

| | |
|--------------|-----|
| Assignments: | 10% |
| Midterm: | 40% |
| Final Exam: | 50% |

If your final exam grade is higher than your term work grade and your term work is 50% or higher, then your final exam grade will count as 100% of your final grade.

Midterm: There will be one midterm exam. If a student is absent for any reason, the weight of the midterm will be transferred to the final exam unless the student has made a prior arrangement with the instructor or has provided documentation of a medical or family emergency.

Final Exam: The final exam will cover the entire course and will be 2 hours long. As stated in the current college calendar, "students are expected to write tests and final examinations at the scheduled time and place." Exceptions will only be considered due to emergency circumstances as outlined in the calendar. The calendar specifically states that "holidays or scheduled flights are not considered to be emergencies."

Assignments: The assignments are online. The lowest assignment grade will be dropped when calculating the average of your assignments. This allows a student to miss one assignment for any reason, including illness, without penalty.

Late Policy: The online assignments close on the due date and late online submissions will not be accepted.

Collaboration Policy: Student are encouraged to collaborate (work together) on assignments and to consult the Math Lab tutor and/or the instructor when stuck. However, you must be prepared to answer similar questions on your own for the quizzes, so it is vital that you yourself understand all of the assigned questions and work that you turn in.

Academic Integrity: The Department of Mathematics and Statistics has prepared a handout called Student Guidelines for Academic Integrity to help you interpret college policies involving student conduct, academic dishonesty, plagiarism, etc. Copies will be given to students during the first week of classes, and the handout has a link on the course website. It is your

responsibility to become familiar with the contents of the document and the college policies it references.

6. Grading System

Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|---|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

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 E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

| Temporary Grade | Description |
|-----------------|--|
| I | <i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| IP | <i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.) |
| CW | <i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.

Math Lab: Tech 142, phone: (250) 370-4492. This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on door).