



CAMOSUN COLLEGE
Trades & Technology
Computer Science

COMP166
Programming 1 for Engineers
Fall 2020

COURSE OUTLINE

The calendar description is available on the web @ <http://camosun.ca/learn/calendar/current/web/comp.html#COMP166>

** Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.*

1. Instructor Information

(a) Instructors/s	Maxwell Terpstra
(b) Office hours	TBA and by appointment M/Th 4-6pm
(c) Location	Online
(d) Phone	n/a
(e) E-mail	terpstrama@camosun.ca
(f) Website	https://online.camosun.ca/d2l/home/177002

2. Intended Learning Outcomes

As students are taught principles of structured programming, they will see concepts illustrated with examples and do problems from science and engineering disciplines. Topics include: elementary features of the programming language used, such as data types and structures, control flow, input/output, functions; the programming environment; problem solving process.

Upon completion of the course, students will be able to:

1. Prepare an algorithm for solving a problem
2. Use functions and parameters to modularize code
3. Define, reference, and modify one and two-dimensional arrays
4. Define, reference, and modify character strings
5. Read, write, and calculate with integer and floating-point data
6. Use functions from the standard C libraries
7. Use the computer environment effectively for program development
8. Document code using structured inline comments
9. Write a program of some logical complexity involving input and output
10. Test and debug code

3. Required Materials

- (a) Texts: N/A
- (b) Development software: Microsoft Visual Studio Code

4. Course Content and Schedule

Week / Date	Topics	Lab
1 / Sept 8	course overview motivation for learning C history and context	Development Tools
2 / Sept 15	computation fundamentals binary data compilation	
3 / Sept 22	C language structure literals and symbolic constants variables and assignment arithmetic operators basic output	Variables and Operators
4 / Sept 29	selection (if, else, switch) logical operators conditional expressions	
5 / Oct 6	arrays pointers command-line arguments	Conditional Logic
6 / Oct 13	repetition (for, while, do-while) increment and decrement operators assignment operators	
7 / Oct 20	midterm review	Repetition
8 / Oct 27	functions pass by value / by reference the call stack	
9 / Nov 3	header files and includes standard C libraries file and stream IO	Functions
10 / Nov 10	ASCII and unicode string functions documentation with Doxygen recursion	
11 / Nov 17	C preprocessor in depth dynamic memory	File I/O
12 / Nov 24	structs unions sizeof	
13 / Dec 1	linking and make	Dynamic Memory
14 / Dec 8	final review	

5. Basis of Student Assessment (Weighting)

Component	Weight
Lab assignments	30%
Quizzes	10%
Discussion assignments	10%
Attendance	5%
Midterm exam	15%
Final exam	30%

Important: Students must attain a minimum grade of 50% on the final exam to pass the course.

6. Grading System

<input checked="" type="checkbox"/>	Standard Grading System (GPA)
<input type="checkbox"/>	Competency Based Grading System

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

- Reference texts:
 - C Programming Language, 2nd ed, by Kernighan and Ritchie, Prentice Hall PTG.
 - Engineering Problem Solving with C, 4th ed, by Etter, Pearson.
- Class notes and reference material provided through D2L

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. Grading Systems <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. 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		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes.

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. 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/index.html> 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.