



**CAMOSUN COLLEGE**  
*Trades & Technology*  
*Computer Science*

**COMP 139e**  
**Programming 1 for Engineers**  
**Fall 2019**

**COURSE OUTLINE**

---

The calendar description is available on the web @ [camosun.ca/learn/calendar/current/web/comp.html](http://camosun.ca/learn/calendar/current/web/comp.html)

*Ω 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) Instructor	Dale Shpak	
(b) Office hours	TBA	
(c) Location	TB 253	
(d) Phone		Alternative: _____
(e) E-mail	shpak@camosun.ca	
(f) Website	hal.cs.camosun.bc.ca/~shpak/comp139e	

**2. Intended Learning Outcomes**

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

1. prepare an algorithm for solving a problem;
2. use functions and parameters appropriately and correctly;
3. define, reference and modify one- and two-dimensional arrays correctly;
4. define and implement classes for object-oriented programming;
5. implement object-oriented I/O;
6. understand and implement exceptions;
7. understand and implement function overloading and overriding;
8. understand and implement inheritance and polymorphism;
9. understand basic software engineering principles;
10. use standard object-oriented libraries;
11. use a mathematical/engineering programming environment for solving mathematical, numerical, and engineering-related problems; and
12. understand basic finite-precision effects

**3. Required Materials**

(a) Texts

Gary J. Bronson, *C++ for Engineers and Scientists*, 4th Edition, Cengage/Nelson, ISBN-10: 1133187846 ISBN-13: 978-1133187844 , 2012.

(b) Other

#### 4. Course Content and Schedule

(Can include: Class hours, Lab hours, Out of Class Requirements and/or Dates for quizzes, exams, lecture, labs, seminars, practicums, etc.)

Week		Reference	Labs & Exams
1-3	Review of programming constructs including loops, selection and function calls. Pass by value, pass by reference, pointers	Ch 4-6, 12	Lab 1, 2
4	Object-oriented I/O	Ch 3, 8	Lab 3
5	Software Engineering Principles	DJS	Lab 4
6	Exceptions and error handling	Ch 9	Lab 5
7	Data Structures and Algorithms	Ch 7, DJS	Lab 6
8	Abstract data types, classes and objects	Ch 10	Lab 7
9	Member functions, access specifiers, constructors, Review	Ch 11	Midterm
10	Function overloading and overriding. Inheritance and polymorphism	Ch 11	Lab 8
11	Intro to MATLAB	DJS	Lab 9
12	Numerical Methods and Quadrature	DJS	Lab 10
13	Differential Equations, Finite Differences, Simulink	DJS	Lab 11
14	Review		

#### 5. Basis of Student Assessment (Weighting)

*(Should be directly linked to learning outcomes.)*

(a) Laboratory Assignments

30 %

(b) Quizzes

(c) Exams

Midterm 25 %

Final 45 %

(d) Other (e.g. Project, Attendance, Group Work)

N/A

#### 6. Grading System

*(If any changes are made to this part, then the Approved Course description must also be changed and sent through the approval process.)*

*(Mark with "X" in box below to show appropriate approved grading system – see last page of this template.)*

Standard Grading System (GPA)

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

Additional resources are on the course home page:  
[hal.cs.camosun.bc.ca/~shpak/comp139e/](http://hal.cs.camosun.bc.ca/~shpak/comp139e/)

## 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.