CAMOSUN COLLEGE
Trades and Technology
Information and Computer Systems

ICS 214 Programming from C to C++
Winter Term, 2019

COURSE OUTLINE

The calendar description is available on the web @   camosun.ca/learn/calendar/current/web/ics.html

 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**	Chris Newstead
(b)	**Office hours**	Email to schedule an appointment or just drop by. Generally, the best time is directly after lectures or labs Mon, Wed, Fri – so just intercept me after class or on the way to my office..
(c)	**Location**	TEC 263
(d)	**Phone**	Better to Email **Alternative:**
(e)	**E-mail**	newsteadc@camosun.bc.ca
(f)	**Website**	course web site is on D2L as ICS-214

2. Intended Learning Outcomes
(If any changes are made to this part, then the Approved Course Description must also be changed and sent through the approval process.)

Upon successful completion of this course, students will be able to
- analyze and design strategies for solving basic programming problems.
- use primitive data types, selection statements, loops, and functions to write programs.
- develop programs to solve a variety of problems in math, science, business, and games.
- use the step-wise refinement approach.
- use arrays to store and process data.
- use an IDE to develop programs.
- understand OO concepts: encapsulation, inheritance, polymorphism, interfaces, abstract classes
- develop event-driven programs
- use file I/O and handle exceptions
- design and implement OO programs

3. Required Materials

(a) Texts

Recommended: Introduction to Programming with C++, by Y. Daniel Liang

(b) Other

Recommended: USB memory stick minimum 1 Gb capacity.

4. Course Content and Schedule

This **tentative** schedule outlines weekly topics. The schedule is subject to change.

1. Course Intro,
2. Elementary programming, Selections
3. Math, Characters, Strings
4. Loops & Functions
5. Arrays & Classes
6. Review & Midterm
    [READING BREAK]
7. Classes, OOP Thinking & Inheritance
8. Pointers & Dynamic Memory
9. Project work
10. Pointers, Dynamic Memory,
11. Exception Handling & File IO
12. Operator Overloading, Inheritance, Polymorphism
13. Review

5. Basis of Student Assessment (Weighting)

(a) Lab Assignments (25% total)

C++ is best learned by doing! Lab assignments will be assigned each week, and students will have a week to work on them before they are due.

(b) Quizzes (10% total)

Quizzes will follow along with the chapters of the book. Though they are a relatively small portion of your grade, they are an excellent way to keep pace with the course, to solidify your understanding, and to prepare for both the midterm and final. The format will be 10-15 questions (mostly multiple choice). Quizzes will be available for the duration of the course, and you may retake a quiz an unlimited number of times in order to improve your score.

(c)   Exams (Midterm 15%, Final 30%)

A passing grade is required on the final in order to pass the course.

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

Project (20%)
We will be analyzing requirements and putting together a game in C++. (expect about 700 lines of code. I plan to provide a .h file with function signatures which we will examine in class and in labs. We will be using SFML as a graphics library for drawing basic sprites to the screen.

Attendance for each lecture may be taken in the form of a sign-in sheet passed around the class for students to write in their name or signature. No marks are awarded for attendance but I may use attendance information to provide me an indication of student's level of commitment to the course.

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.)

| X | Standard Grading System (GPA) |

| | Competency Based Grading System |

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

The course D2L site maintains pages for the lectures with associated external and internal links to PDFs, Powerpoints, and other materials.

There is a web page for online testing for the review of the lecture materials as well as the posted answers to the quizzes.

There is a D2L web page for additional resource information by topic and a D2L online forum for the ICS students by 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, Student Services or the College web site at http://www.camosun.bc.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, Registration, and on the College web site in the Policy Section.
> http://www.camosun.bc.ca/policies/policies.html

CLASS POLICIES

ATTENDANCE AND PARTICIPATION

Your attendance and participation are essential to your success in this course. If you miss a class, it is **your responsibility** to know the material I have covered and to complete the assignments due. Please contact me if you are going to miss or be late to a class.

Assignment Policies

- Submissions: You must complete all assignments and complete all the quizzes to pass this course.

- Late submission policy: You must submit assignments on time. You can always submit assignments early if you wish. If you know that you will be submitting an assignment late, ask me before the due date, and let me know the date that you will be submitting the assignment. The late penalty will be 5% per day. If you do not consult me about a late assignment, the late penalty will be 10% per day. I will grade zero for any assignments submitted later than one calendar week after the due date.

- Plagiarism: This is a form of cheating in that you are passing off someone else's work as though it is your own. This is a form of stealing and within this academic setting, will not be tolerated. Plagiarism will result in a grade of zero and a meeting with me to discuss subsequent action.

GRADING SYSTEMS *http://www.camosun.bc.ca/policies/policies.php*

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://www.camosun.bc.ca/policies/E-1.5.pdf for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: 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	*In progress*: 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	*Compulsory Withdrawal*: 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.