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Course Outline

School of Computing and Academic Studies
Program: Computer Systems Technology

COMP 3512
Object Oriented Programming in C++

Start Date:	September 3, 2008	**End Date:**	December 12, 2008		

Total Hours: 90	**Total Weeks:**	15	**Term/Level:**	3	**Course Credits:**	6

Hours/Week: 6	**Lecture:**	4	**Lab:** 2	**Shop:**	**Seminar:**	**Other:**

Prerequisites		**COMP 3512 is a Prerequisite for:**	
Course No.	**Course Name**	**Course No.**	**Course Name**
COMP 2510	Procedural Programming in C	COMP4981 COMP4985	Data Communications/Internetworking 2 Selected Topics in Data Communication / Internetworking

■ **Course Description (required)**

This is an intensive course in multi-paradigm C++ programming. A number of features of the C++ language will be covered including inheritance, polymorphism, templates, exceptions and the Standard Template Library

■ **Detailed Course Description (optional)**

■ **Evaluation**

		Comments:
Final Exam	16%	**You must pass the midterm exams & the final exam on average in order to pass the course. To put this another way, if the weighted average of your 2 midterm exams & final exam is less than 50%, you will fail this course (regardless of how well you scored on the assignments & lab activities).**
Midterm Exams I	22%	
Midterm Exam II	22%	
Assignments	21%	
Lab Activities (exercises & quizzes)	19%	**Note: The weighted average will be calculated using the ratio**
TOTAL	100%	**midterm I : midterm II : final = 22 : 22 : 16**

■ **Course Learning Outcomes/Competencies**

Upon successful completion, the student will be able to:
- Design & code abstract data types in C++
- Design & code good C++ classes
- Use inheritance to capture & reuse common behaviour
- Implement some of the common design patterns in C++
- Use templates to create reusable containers & iterators
- Use the standard C++ library including the Standard Template Library (STL)

■ Verification

I verify that the content of this course outline is current.

Albert Wei	May 5, 2008
Authoring Instructor	Date

I verify that this course outline has been reviewed.

Program Head/Chief Instructor	Date

I verify that this course outline complies with BCIT policy.

Dean/Associate Dean	Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

■ Instructor(s)

| Albert Wei | Office Location: | SW2-319 | Office Phone: | (604) 451-7007 |
| | Office Hrs.: | TBA | E-mail Address: | Albert_wei@bcit.ca |

■ Learning Resources

*Required***:**

● A C++ compiler conforming to the ANSI C++ standard

*Recommended***:**

● C++ Primer Plus, 5th Edition, Prata, SAMS, ISBN 978-0-672-32697-4

□ Information for Students

Course Grade: One requirement of passing this course is that the weighted average of your 2 midterm exams & final exam must be at least 50%. (See Evaluation section.)

Assignments: Late assignments, lab reports or projects will **not** be accepted for marking. Assignments must be done on an individual basis unless otherwise specified by the instructor.

Makeup Tests, Exams or Quizzes: There will be **no** makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Ethics: BCIT assumes that all students attending the Institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam, or project for all parties involved and/or expulsion from the course.

Attendance: The attendance policy as outlined in the current BCIT Policy will be enforced. Attendance will be taken at the beginning of each session. Students not present at that time will be recorded as absent.

Illness: A doctor's note is required for any illness causing you to miss assignments, quizzes, tests, projects, or exam. At the discretion of the instructor, you may complete the work missed or have the work prorated.

Attempts: Students must successfully complete a course within a maximum of three attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the appropriate program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

Labs: Lab attendance is mandatory. Lab exercises are due at the end of the lab period.

I.D. Required in Examination Centres: Effective December 2000, in order to write exams, students will be required to produce photo-identification at examination centres. Photo I.D. must be placed on the desk before an exam will be issued to the student. The I.D. must remain in view on the desk while writing the exam, for inspection by invigilators. Students should bring a BCIT OneCard or alternatively two pieces of identification, one of which must be government photo I.D. such as a driver's licence. Please see BCIT Policy #5002, Formal Invigilation Procedures.

● **Cheating and Plagiarism**
● **Student Conduct**
● **Responsible Use of Information Technology at BCIT**: your receipt of this outline and your attendance in this course signifies that you have been made aware of these official BCIT policies which are detailed on the BCIT web site and referred to on the last page of this outline.

■ Assignment Details

Details will be provided

Schedule*

Week of/ Number	Outcome/Material Covered	Reference/ Reading
1	Introduction to C++	Lecture Notes
2	Console I/O Introduction to strings & string streams File I/O	Lecture Notes
3	Inline functions, default argument values References `new` and `delete`	Lecture Notes
4	Function overloading Introduction to STL	Lecture Notes
5	Some standard containers & algorithms Implementing simple generic algorithms	Lecture Notes
6	Constructors, Destructors & Assignment Operators Static Members Friend Functions Operator Overloading	Lecture Notes
7	Abstract data types	Lecture Notes
8	Derived classes	Lecture Notes
9	Virtual Functions & Polymorphism	Lecture Notes
10	Casting RTTI Exceptions	Lecture Notes
11	Multiple inheritance Function & class templates	Lecture Notes
12	STL containers & iterators	Lecture Notes
13	STL algorithms & function objects	Lecture Notes
14	Miscellaneous STL Topics	Lecture Notes

* This schedule is subject to change at the discretion of the instructor

CST Student Conduct Guidelines

The School of Computing and Academic Studies expects the highest level of professional conduct and ethical behaviour from all students enrolled in Computer Systems Technology (CST) courses and programs.

All students are reminded of the following BCIT policies related to student conduct:

- Policy 5002 Cheating and Plagiarism
     www.bcit.ca/files/pdf/policies/5002.pdf
- Policy 5002 Student Conduct
     www.bcit.ca/files/pdf/policies/5002.pdf
- Policy 3501 Responsible Use of Information Technology at BCIT

     www.bcit.ca/files/pdf/policies/3501.pdf

CST students are especially reminded that the Computing and IT knowledge and skills acquired in the course of their studies confer upon them, as with all IT professionals, a special responsibility to use this knowledge in a responsible, professional and ethical manner.

Given that misuse of computer facilities at BCIT can have significant legal and/or economic impacts, upon evidence of any violation of Policy 3501, the School may recommend immediate suspension, even for first offences.

By attending this course, every student has been made aware of these policies and the actions that will be taken. Please follow the links provided, each student is responsible to read and comply with these policies.