

**Information and Communications Technology****C++ Programming****Computer Eng. Technology – Comp. Science****Professor's Name: Andrew Tyler****Course Number: CST8219****Email: [tylera@algonquincollege.com](mailto:tylera@algonquincollege.com)****Course Section: 01****Phone: 3468****Academic Year: 2015-2016****Office: WT314****Term: W16****Out of Class****Academic Level: 4****Assistance: Office Hour****Section-Specific Learning Resources**

The course book "Thinking in C++", second edition by Bruce Eckel is available free online. Course related materials will be provided to the student as required.

**Evaluation Breakdown**

<b>Assessment</b>	<b>Value</b>	<b>CLRs</b>
Assignment 0	4%	9
Assignment 1	8%	1, 2, 3
Assignment 2	9%	1, 2, 3, 4, 5, 9
Assignment 3	9%	1, 2, 3, 4, 5, 6, 7, 8, 9
Test 1	17.5%	1, 2
Test 2	17.5%	2, 3, 4
Final Exam	35%	1, 2, 3, 4, 5, 6

**Learning Schedule** (subject to change with notification)

Date	Weekly Theme and Learning Outcomes	Learning Activities	Assessments (%)	Resources	CLRs
Week 1	Overview of Course and Policies <ul style="list-style-type: none"> <li>Course Outline</li> <li>Classes in C+</li> </ul>	<ul style="list-style-type: none"> <li>Draw diagram of dynamic memory allocation</li> <li>Use Visual Studio 2013</li> </ul>	Assignment 0, Assignment 1	Eckel, Chapters 2, 3 and 4	1
Week 2	C++ as a "better" C	<ul style="list-style-type: none"> <li>Use header guards</li> </ul>	Assignment 1	Chapter 5	2
Week 3	Constructors and Destructors	<ul style="list-style-type: none"> <li>Use inline and non-inline member functions</li> <li>Implement dynamic memory leak detection</li> </ul>	Assignment 1	Chapter 6	2, 3
Week 4	Constructors and Destructors	<ul style="list-style-type: none"> <li>Use inline and non-inline member functions</li> <li>Implement dynamic memory leak detection</li> </ul>	Assignment 1	Chapter 6	2, 3
Week 5	Overloaded Functions	<ul style="list-style-type: none"> <li>Test overloaded constructors for assignment specs</li> </ul>	Assignment 2	Chapters 7 and 9	3, 4
Week 6	Test 1 in Class Hand back and go over marked Test 1				
Week 7	Reference Data Type and Copy Constructor	<ul style="list-style-type: none"> <li>Use the reference data type for l-value and r-value</li> </ul>	Assignment 2	Chapter 11	3, 4
Week 8	Implement Overloaded Operators	<ul style="list-style-type: none"> <li>Verify using overloaded operators eliminates accessors</li> </ul>	Assignment 2	Chapter 12	5
Week 9	Implement Overloaded Operators	<ul style="list-style-type: none"> <li>Verify using overloaded operators eliminates accessors</li> </ul>	Assignment 2	Chapter 12	5
Week 10	Test 2 in Class Hand back and go over marked Test 2				
Week 11	Inheritance	<ul style="list-style-type: none"> <li>Test early and late binding</li> </ul>	Assignment 3	Chapter 14	7
Week 12	Polymorphism	<ul style="list-style-type: none"> <li>Compare non-polymorphic with polymorphic inheritance</li> </ul>	Assignment 3	Chapter 15	8
Week 13	Abstract base classes, the VTABLE	<ul style="list-style-type: none"> <li>Demonstrate that an abstract base class may need constructors</li> </ul>	Assignment 3	Chapter 15	8
Week 14	Templates	<ul style="list-style-type: none"> <li>Implement code reuse with standard container classes</li> </ul>	Assignment 3	Chapter 16	6

Week 15	FINAL EXAM week				
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### Other Important Information

Lectures will present the theoretical material of the course. Students are expected to attend all the lectures.

Laboratory attendance is compulsory and the absence from more than 2 laboratory sessions without the prior consent of the professor will result in a grade of "F". Students are responsible for keeping a record of the number of laboratory sessions they have missed. Professors will not inform students of an impending failure because of missed laboratory sessions. All laboratory assignments must be successfully completed in order to obtain course credit. Late assignments will be penalized at the rate of 25% per day late, but must still be completed. Any missed evaluation points will result in a grade of "0". In the case of a documented emergency the professor, in consultation with the chair, will determine how the mark will be made up and/or final grade adjusted.

In order to pass the course, the student must have a grade of at least 50% or "D-" on tests and final exam combined, as well as on the lab exercises component. Lab assignments will not be included in the final grade unless the student achieves at least a grade of 50% or "D-" on the combined tests and the final exam. (Students who have a failing grade on the combined tests and the exam will receive a grade of "F".)