Lamar University

COSC 1337-01, Spring 2005

Introduction to Computer Science II (C++)

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Office Hours: Tue & Thu 2:00 ~ 3:30 PM or by appointment

Classroom and meeting time:

Mase 111, MWF 9:05 ~ 9:55 AM
(Attendance will be taken impulsively)

HomePages of the course: `http://hal.lamar.edu/~licc/cosc1337`

From there, you may find important information about assignments, assignment data, due dates, sample programs, or announcements. **Note:** *An announcement made in the class will be considered as an official one, since I may not be able to update every announcement.*

Course Description and Purposes: This is a continuous course of CS1. We assume that students already have basic programming skill in JAVA. We will study more advanced features of programming languages in terms of C++. Also, we will shift the programming environment from MS Windows' IDE to Unix. The topics to be covered include the most important and basic features of C++ such as elementary data types, input/output, functions and the way they pass parameters, control structures, arrays, records and files I/O, string manipulation, pointers, modular design, and structured programming. Since C++ is an *object oriented* programming language, we will introduce some basic concepts of object-oriented programming such as *classes*, *public and private functions*, *friend classes*, *inheritance*, and *polymorphism*. However, we will not particularly focus on such programming paradigm due to the time constraint. Also, we will learn how to analyze the complexity of programs in order to give students a taste of data structures and algorithm analysis.

Prerequisites:

COSC 1336 (or 1373) with grade B or better.

Textbooks:

Absolute C++, by Walter J. Savitch, Addition Wesley Publishers, 2002

Reference:

Object-Oriented Programming in C++, by Nicolai M Josuttis, John Wiley & Sons Ltd, 2003

Examinations: (300 points) Two midterms and one Final Exam (100 points for each test)

- Unless announced otherwise, all tests are accumulative, closed book, and indispensable. No makeup test will be given unless a documented absence is authorized by the university.
- Every student is allowed to bring a self-prepared crib sheet to the test. You can **write** down anything on both sides of **one** letter-sized paper. No circulation during the test.

Midterm I	100 points	Feb. 18, 6^{th} week's Friday
Midterm II	100 points	Mar. 21, 11^{th} week's Monday
Final Exam	100 points	May 6, Friday, 8:00 AM $\sim$ 10:30 AM

Assignments: (210 $\sim$ 240 points) About 7 or 8 programming assignments will be given. Students are encouraged to discuss assignments and help each other. However, this does not mean that you can either entirely or partially copy or modify someone else's works.

Any form and any degree of plagiarism will receive 0 point.

Late works will be graded with penalty: -10 points per day after the due date.

Attendance: (50 points) Attendances will be taken impulsively.

Pop quizzes: (50 points)

About 5 (or more) pop quizzes will be given impulsively. Each quiz carries 10 points towards students' final scores. The coverage of every quiz is also accumulative, including the materials covered in the class right before the quiz. A typical quiz takes about 10 minutes. No makeup quiz will be given if missed. If you miss a quiz due to a university authorized absence, we will use the average of your rest quizzes; otherwise, you get a 0 for the absent quiz.

Academic Honesty:

Cheating, plagiarism, collusion, abuse of resource materials, and their consequences are defined and described under the section of Academic Affairs in the *Student Handbook*.

Students giving away academic works for assignment offered for credit to other students working on the same assignment will be considered as guilty as academic dishonesty, and will receive the same penalty.

Grading Policy:

Considering 650 points the perfect score, your grade is based on the scheme shown in the table.

I do not curve!!

Points	Grade	
540 $\sim$ 650	A	Excellent
420 $\sim$ 539	B	Good
300 $\sim$ 419	C	Satisfactory
200 $\sim$ 299	D	Passing
0 $\sim$ 199	F	Failure

Tentative Topics and Schedule:

Week	Topics	Reading
1: Jan. 12	(Jan. 12, first class day), programming preliminaries	Syllabus
2: Jan. 17	(Jan. 17, no class), programming and Unix preliminaries	Lecture Notes
3: Jan. 24	C++ basics	Chapter 1
4: Jan. 31	Control structures: if, for-loop, while-loop, functions, parameters	Chapter 2, 3.1, 3.2
5: Feb. 7	Scopes, Call by value vs. reference, overloading	3.3, 4.1, 4.2
6: Feb. 14	Arrays, array parameters **(Midterm 1, Feb. 18, Friday)**	Chapter 5
7: Feb. 21	(Feb. 23, last day to drop without penalty) Structures vs. classes, constructors, vectors	Chapter 6, 7.1, 7.3
8: Feb. 28	Operator overloading, friend functions	Chapter 8
9: Mar. 7	String and C-string manipulation, pointers	Chapter 9, 10.1
10: Mar. 14	Spring break, no class	
11: Mar. 21	**(Midterm 2, Mar. 21, Monday)** Dynamic arrays, (Mar. 25, good Friday, no class)	10.2, 10.3
12: Mar. 28	Separate compilation, namespace	Chapter 11, 12.1
13: Apr. 4	Inheritance, polymorphism, virtual functions	14.1, 15.1
14: Apr. 11	Pointers and virtual functions, templates	15.2, Chapter 16
15: Apr. 18	Recursion, exception handling	Chapter 13, 18
16: Apr. 25	Standard Template Library (Iterators, Containers)	19.1, 19.2
17: May 2	(May 3, last class day) **Final Exam, May 6, Friday, 8:00 $\sim$ 10:30 AM**	