
Colgate University

COSC101 A, Spring 2002

Introduction to Computing I

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Class meeting times and place:

MWF 10:20 AM ~ 11:10 AM, McGregory 312.

(Attendance will be taken impulsively)

HomePages:

Course http://cs.colgate.edu/~chungli/2002Spring_COSC101/index.html

Lab http://149.43.80.142/CsLabWebPages/CS101.Web_pages/cs101.html

These webpages contain detailed information about this course, laboratory and policy, due dates, and most recent announcements.

Course Description and Purpose:

This course is designed to give students a concrete concept of computing with computers. We will emphasize on the problems that by their natures can be solved by computers. In other words, the purpose of this course is to learn how to use programming languages to let computers find the solutions to the problems. In particular, we select C++ as the programming language for our intensive study. The topics to be covered are the most important yet basic futures of C++ including functions, input/output, program control, elementary data types, arrays, records and files, modular design, and structured programming. Since C++ is an *object oriented* programming language, we will introduce the concepts of classes in C++, but we will not particularly focus on such programming paradigm due to the time limitation. Also, we will learn how to analyze the complexity of a program in terms of its efficient of running.

There are no specific prerequisites needed for this course. Students taking this course do not have to have any experience of programming languages. However, a certain experience of working with computers may help to take off in the fist two weeks.

The environment for developing our C++ programs in this course is *Microsoft Visual C++ 6.0*. Students shall be familiar with the environment from their lab works. We will not cover it in the regular classes. The introductory vision of Microsoft Visual C++ 6.0 that comes with the textbook is enough for most of the lab works and assignments.

Text Books:

Computer Science Tapestry – Exploring Programming and Computer Science with C++
by *Owen L. Astrachan*, published by McGraw Hill

Examination Dates:

1. Midterm 1: 6th Friday, March 1, (in class).
2. Midterm 2: 13th Friday, April 19, (in class).
3. Final Exam: 2 hours, accumulative, date will be announced.

Grading Policy:

- 55% on writing tests: Midterm 1 (15%), Midterm 2 (15%), Final Exam (25%).
- 45% on laboratories: Lab works (35%), Homework, assignments, and Attendance (10%).

Special Notes to The Class:

- Cheating and plagiarism and their consequences are defined and described in the booklet *The Colgate University Academic Honor Code*.
- Backup your works. “My dog ate my disk!!” is not a good excuse.

What to do before going to the first lab:

1. Prepare at least two 3.5 inch floppies. They will be formatted in the lab.
2. Use a web browser to link to the web pages of the course.
3. Also, link to the web pages of the lab and read:
 - (a) *Lab Policy Statement*
 - (b) *Policy on Academic Honesty*
4. Print out prelab #1, which can be found under the page *Prelabs*
5. Link to *Laboratory Manual Pages* and read all pages in **Part I: Reference Materials**. The materials will help you to answer all the questions in prelab #1.

Tentative Topics and Schedules

Week	Topic	Reading <i>(textbooks)</i>	Lab
1: Jan. 21	Introduction to computer science, languages, program design, and structure of a C++ program	1.1~2.3	Lab 1
2: Jan. 28	Functions and parameters, program style, input expressions	2.4~3.2	Lab 2
3: Feb. 4	Classes and types, assignments, conditionals, boolean expressions	3.3~4.3	Lab 3
4: Feb. 11	More conditionals and boolean expressions, functions and return values, class member functions, loops	4.4~5.1	Lab 4
5: Feb. 18	Other type of loops, nested loops, scope	5.1~5.3	Lab 5
6: Feb. 25	Using classes and their implementation, review for Midterm 1 (March 1)	5.4~6.1	Lab 6
7: Mar. 4	More class implementation, reference parameters, streams and files	6.1~6.3	Lab 7
8: Mar. 11	More streams and files, type casting, finding extreme values, more iteration	6.3~6.5	Lab 8
9: Mar. 18	<i>Spring break</i>	TBA	
10: Mar. 25	Designing classes, class coordination, random walk, switch statement	7.1~7.3	Lab 9
11: Apr. 1	Structs, enumerated types, vector	7.4~8.2	Lab 10
12: Apr. 8	Operation on vectors, binary search	8.3	Lab 11
13: Apr. 15	Recursion, review for Midterm 2 (April 19)	10.1	Lab 12
14: Apr. 22	More recursion, comparing recursion and iteration, sorting	10.1~10.3	Lab 13
15: Apr. 29	Catch-up, review for the final	1.1~10.3	Lab 14
16: May 6	Final exam week	1.1~10.3	