

CS 102 Syllabus

4 September 2013

Welcome to CS 102, an introduction to problem solving, algorithmic design, and implementation using the C++ programming language. Topics include fundamental data types and associated array types, I/O processing, conditional and loop constructs, use and implementation of functions. A brief overview of structures is given. Throughout the course, good programming styles and sound program construction are emphasized.

When: Monday, Wednesday 11am–12:50pm

Where: LLC 207

Credits: 4

Prerequisites: CS101

Contact Information

Instructor: Prof. Christopher League, Ph.D.

Email: christopher.league@liu.edu – please include the course number in the subject.

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Office hours: Monday, Wednesday 2–2:50 (US Eastern) or make an appointment at <https://liucs.net/bookme>

Office phone: +1 718 488 1274

Office location: LLC 206, LIU Brooklyn

Resources

Web sites: <https://liucs.net/cs102f13/>

<https://liucs.net/cloudcoder>

<http://pollev.com/liucs>

<http://www.gradechamp.com/>

Text: *C++ Without Fear* by Brian Overland (second edition, ISBN 978-0-13-267326-6). <http://amzn.com/0132673266>

Library: Campus library resources tailored for computer science are available at <https://liucs.net/u1>

Requirements

Your grade will be computed based on assignments, exams, quizzes, and participation. There are a total of 1,000 points available, broken down as follows:

- There will be **12 assignments** during the semester. That's roughly one per week. Some class time will be devoted to work on assignments. They are worth **60 points each**, but I will **drop the lowest two scores** so only 10 will count, for a total of **600 points**.
- There are **6 quizzes** scheduled throughout the semester, to make sure you are following along with the lectures and online review resources. Quizzes are worth **20 points each**, but I will **drop the lowest two scores** so only 4 will count, for a total of **80 points**.
- There will be **12 online 'check-in' opportunities** scheduled, roughly one per week. Many of these will involve using an online system called **CloudCoder**. Check-ins are worth **12 points each**, but I will **drop the lowest two scores** so only 10 will count, for a total of **120 points**.
- There will be a midterm and final exam, worth **100 points each** for a total of **200 points**.

On the 1,000-point scale, you can expect the following letter grades:

		≥ 870: B+	≥ 770: C+	≥ 670: D+
≥ 930: A	≥ 830: B	≥ 730: C	≥ 600: D	
≥ 900: A–	≥ 800: B–	≥ 700: C–	else: F	

In the end, I may choose to adjust the scale slightly to compensate for assignments or questions that turned out to be trickier than I intended. Such adjustments would never *lower* your grade from what is designated in the above table; if you achieve 930 points, you are guaranteed an A.

Policies

No late assignments will be accepted, because we will discuss and evaluate your work promptly after the deadline. This helps to ensure that everyone receives timely feedback, and that you can learn from mistakes while they are still fresh in your mind.

There will be no extra credit. Students usually ask for extra credit late in the semester after they have already messed up their original opportunities. Be sure to start your work early, so that we can detect and solve any problems before they can affect your grade.

Plagiarism is the use or presentation of ideas, words, or work that is not one's own and that is not common knowledge, without granting credit to the originator. Pla-

gism is a practice that is not only unacceptable, but which is to be condemned in the strongest terms possible on the basis of moral, educational and legal grounds. Under University policy, plagiarism may be punishable by a range of penalties from a failing grade in the assignment or course to dismissal from the School of Business, Public Administration and Information Sciences. All students are required to read the handbook on avoiding plagiarism by visiting <https://liucs.net/u2>

Cheating includes, but is not limited to the following: falsification of statements or data; listing sources that have not been used; having another individual write your paper or do your assignments; writing a paper or creating work for another student to use without proper attribution; purchase of paper or research work for one's submission as his/her own work; using written, verbal, or electronic or other sources of aid during an examination (except when expressly permitted by the instructor, depending on the nature of the examination) or knowingly providing such assistance to aid other students.

In a course with programming assignments, it is usually okay to work with and learn from other students to **some** extent, but what you submit in the end needs to be your own. The most reliable way to do that would be to set aside whatever code you created together, and then recreate it from scratch on your own.

Showing up on time to class every week is extremely important. If you must be absent or more than 5 minutes late, please try to notify me in advance. I will be keeping track of whether you are in class, and when you arrive. A few missed classes will not count against you, but habitual absence will significantly hurt your grade. Additionally, there will be no make-up quizzes. I do not distinguish between 'excused' and 'unexcused' absence. Unless you miss an *exam* due to a severe medical emergency, I don't want to see a doctor's note. If you do miss an exam, the make-up exam will be different – and probably *not* easier.

Long Island University seeks to provide **reasonable accommodations for all qualified persons with disabilities**. This University will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to register with Special Education Services (SES) as early as possible and to provide faculty members with the formal communication from SES for suitable accommodations. All accommodations must be approved through SES. Contact Information: 718 488 1221 or 718 488 1044.

The **Family Educational Rights and Privacy Act (FERPA)** gives students control over the disclosure of their educational records. During this course you may have the opportunity to create accounts or register with certain public online services. In these cases, you need not make any personally identifying information public. You may use a pseudonym or online handle, as long as you identify yourself to the instructor.

Time commitment

This is a lab course, for which you will have to spend a significant amount of time both inside and outside of class to succeed. In addition to spending about **1–2 hours** preparing (reading, reviewing, practicing) for each hour of class time, your work on the assignments is a crucial part of the learning experience. Some time will be set aside in class for supervised work on the assignments, but it will not be sufficient.

The productivity of computer programmers varies widely, depending on the project and skill level, by a factor of ten or more. (In other words, the most productive programmer can accomplish the same task in one-tenth the time taken by the least productive programmer.) This factor comes from studies of professional programmers; for beginners, the effect is probably multiplied even further.

For this reason, I am reluctant to estimate the number of hours a ‘typical’ student will need to spend on each assignment. However, the state of New York requires it, so here we go. On average, expect to spend **5 hours per assignment** (keeping in mind that earlier assignments will require less time than later ones), or a total of **60 hours per semester**. You may find you need less time, or you may find you need spend substantially more time, in order to achieve the educational goal. So please don’t get discouraged if you find yourself working even more than this. With practice, you will get there. Nothing worth doing is easy.

Schedule

Wed 4 Sep Meeting 1 at 11 am: Introduction – languages, compilers, and other tools. Building a C++ program: main, output, includes.

Mon 9 Sep Meeting 2 at 11 am: Types, variables, and operators.

Tue 10 Sep Check-in 1 due at 23:59.

Wed 11 Sep Meeting 3 at 11 am: Classwork on Assignment 1.

Sun 15 Sep Assignment 1 due at 23:59.

Mon 16 Sep Meeting 4 at 11 am: Decisions with if/else. **Quiz 1**.

Tue 17 Sep Check-in 2 due at 23:59.

Wed 18 Sep Meeting 5 at 11 am: Classwork on Assignment 2.

Sun 22 Sep Assignment 2 due at 23:59.

Mon 23 Sep Meeting 6 at 11 am: Nested if/else chains.

Tue 24 Sep Check-in 3 due at 23:59.

Wed 25 Sep Meeting 7 at 11 am: Classwork on Assignment 3.

Sun 29 Sep Assignment 3 due at 23:59.

Mon 30 Sep Meeting 8 at 11 am: Logical operators, short-circuit evaluation. **Quiz 2.**

Tue 1 Oct Check-in 4 due at 23:59.

Wed 2 Oct Meeting 9 at 11 am: Classwork on Assignment 4.

Sun 6 Oct Assignment 4 due at 23:59.

Mon 7 Oct Meeting 10 at 11 am: Introduction to loops, increment/decrement operator.

Tue 8 Oct Check-in 5 due at 23:59.

Wed 9 Oct Meeting 11 at 11 am: Classwork on Assignment 5.

Sun 13 Oct Assignment 5 due at 23:59.

Mon 14 Oct Meeting 12 at 11 am: Compound statements, for-loop variable declarations, break and continue. **Quiz 3.**

Tue 15 Oct Check-in 6 due at 23:59.

Wed 16 Oct Meeting 13 at 11 am: Classwork on Assignment 6.

Sun 20 Oct Assignment 6 due at 23:59.

Mon 21 Oct Meeting 14 at 11 am: Review session.

Wed 23 Oct Midterm exam at 11 am: You may leave after finishing the exam.

Mon 28 Oct Meeting 16 at 11 am: Introduction to functions, local and global variables.

Tue 29 Oct Check-in 7 due at 23:59.

Wed 30 Oct Meeting 17 at 11 am: Classwork on Assignment 7.

Sun 3 Nov Assignment 7 due at 23:59.

Mon 4 Nov Meeting 18 at 11 am: Recursive functions. **Quiz 4.**

Tue 5 Nov Check-in 8 due at 23:59.

Wed 6 Nov Meeting 19 at 11 am: Classwork on Assignment 8.

Sun 10 Nov Assignment 8 due at 23:59.

Mon 11 Nov Meeting 20 at 12 pm: Arrays and strings.

Tue 12 Nov Check-in 9 due at 23:59.

Wed 13 Nov Meeting 21 at 11 am: Classwork on Assignment 9.

Sun 17 Nov Assignment 9 due at 23:59.

Mon 18 Nov Meeting 22 at 11 am: Arrays of arrays and two-dimensional arrays, randomness. **Quiz 5.**

Tue 19 Nov Check-in 10 due at 23:59.

Wed 20 Nov Meeting 23 at 11 am: Classwork on Assignment 10.

Mon 25 Nov Meeting 24 at 11 am: Introduction to pointers, and array processing using pointers.

Tue 26 Nov Assignment 10 due at 23:59.

Mon 2 Dec Meeting 25 at 11 am: String manipulation functions in C and C++.

Tue 3 Dec Check-in 11 due at 23:59.

Wed 4 Dec Meeting 26 at 11 am: Classwork on Assignment 11.

Sun 8 Dec Assignment 11 due at 23:59.

Mon 9 Dec Meeting 27 at 11 am: Loose ends — overloading, do-while, switch statements, multiple modules. **Quiz 6.**

Tue 10 Dec Check-in 12 due at 23:59.

Wed 11 Dec Meeting 28 at 11 am: Classwork on Assignment 12.

Sun 15 Dec Assignment 12 due at 23:59.

Wed 18 Dec Final exam session 1 at 11 am:

Fri 20 Dec Final exam session 2 at 9 am: **Final exam session 3** at 11 am: