

Course Objectives

In this course, you will learn the foundation concepts and principles of computer science; fundamental computer programming principles, methodologies, and techniques; and basic concepts of programming in general and the C++ language specifically.

Course Website

The URL for the course website is <http://cs.ucla.edu/classes/fall19/cs31>. You must check the site for announcements at least every other weekday. You must also check your email as regularly.

Instructor and Class Meetings

|  |  |   |  |  |  |
|--|--|---|--|--|--|
| <a href="#">Lecture 1</a><br>MW 12-1:50<br>Kaplan A51<br>David Smallberg<br><a href="mailto:das@cs.ucla.edu">das@cs.ucla.edu</a>   |  |   |  | <a href="#">Lecture 2</a><br>MW 4-5:50<br>Franz 1178<br>David Smallberg<br><a href="mailto:das@cs.ucla.edu">das@cs.ucla.edu</a>            |  |
| <b>Discussion 1A</b><br>F 10-11:50<br>Boelter 5272<br>Daniel Achee<br><a href="mailto:dpachee@cs.ucla.edu">dpachee@cs.ucla.edu</a> | <b>Discussion 1C</b><br>F 10-11:50<br>Boelter 5422<br>Angelina Poole<br><a href="mailto:angelinapoole@ucla.edu">angelinapoole@ucla.edu</a> | <b>Discussion 1E</b><br>F 12-1:50<br>Boelter 5273<br>Vivian Cheng<br><a href="mailto:viviancheng@cs.ucla.edu">viviancheng@cs.ucla.edu</a> | <b>Discussion 1G</b><br>F 2-3:50<br>Boelter 5273<br>Yewen Wang<br><a href="mailto:wyw10804@gmail.com">wyw10804@gmail.com</a>                 | <b>Discussion 2A</b><br>F 10-12:50<br>Boelter 5273<br>Kareem Ahmed<br><a href="mailto:kareem.yousri@gmail.com">kareem.yousri@gmail.com</a> | <b>Discussion 2D</b><br>F 12-1:50<br>Boelter 5420<br>Kevin Hsieh<br><a href="mailto:kevin.hsieh@ucla.edu">kevin.hsieh@ucla.edu</a> |
| <b>Discussion 1B</b><br>F 12-1:50<br>Haines 220<br>Xiusi Chen<br><a href="mailto:xiusi@ucla.edu">xiusi@ucla.edu</a>                | <b>Discussion 1D</b><br>F 12-1:50<br>Kaplan A65<br>Guangyu Zhou<br><a href="mailto:guangyuzhou@g.ucla.edu">guangyuzhou@g.ucla.edu</a>      | <b>Discussion 1F</b><br>F 12-1:50<br>Boelter 5422<br>Pan Xu<br><a href="mailto:panxu@ucla.edu">panxu@ucla.edu</a>                         | <b>Discussion 1H</b><br>F 12-1:50<br>Boelter 5272<br>Alejandro Zapata Acosta<br><a href="mailto:azapataa@g.ucla.edu">azapataa@g.ucla.edu</a> | <b>Discussion 2B</b><br>F 10-11:50<br>Boelter 5422<br>Angelina Poole<br><a href="mailto:angelinapoole@ucla.edu">angelinapoole@ucla.edu</a> | <b>Discussion 2F</b><br>F 2-3:50<br>Boelter 5436<br>Manoj Reddy<br><a href="mailto:mdareddy@cs.ucla.edu">mdareddy@cs.ucla.edu</a>  |

[Office hours](#) for the instructor, TAs, and LAs are on the class web page.

## Schedule of Lecture Topics and Exams

| Week | Date    | Topics  | Book              |
|------|---------|---|-------------------|
| 0    | Sep. 27 | Introduction/Computer History   |                   |
| 1    | Sep. 30 | Basics  | Chapter 1         |
|      | Oct. 2  | Basics  | Chapter 1         |
| 2    | Oct. 7  | Basics  | Chapter 1         |
|      | Oct. 9  | Control Flow  | Chapter 2         |
| 3    | Oct. 14 | Control Flow  | Chapter 2         |
|      | Oct. 16 | Functions   | Chapter 3         |
| 4    | Oct. 21 | Functions and Program Development   | Chapter 3         |
|      | Oct. 23 | Parameters  | Chapter 4         |
| 5    | Oct. 28 | Arrays  | Chapter 5         |
|      | Oct. 28 | Midterm exam part 1 (5:30 to 6:35, 5:45 to 6:50, or 6:00 to 7:05) cancelled due to campus closure |                   |
|      | Oct. 30 | Arrays  | Chapter 5         |
| 6    | Nov. 4  | Strings   | Chapter 9         |
|      | Nov. 6  | Pointers  | Chapter 10.1–10.2 |

|           |               |  |                   |
|-----------|---------------|--|-------------------|
| 7         | Nov. 11       | <i>Veterans Day holiday</i>  |                   |
|           | Nov. 13       | Pointers   | Chapter 10.1–10.2 |
| 8         | Nov. 18       | Structs and Classes  | Chapter 6         |
|           | Nov. 20       | Classes  | Chapter 6         |
|           | Nov. 20       | Midterm exam <del>part 2</del> (5:45 to 7:20, 6:00 to 7:35, or 6:15 to 7:50) |                   |
| 9         | Nov. 25       | Constructors   | Chapter 7         |
|           | Nov. 27       | Pointers   | Chapter 10.3      |
| 10        | Dec. 2        | Function Overloading   |                   |
|           | Dec. 4        | Review   |                   |
| end of 10 | Dec. 7 (Sat.) | Final exam, 11:30 to 2:30  |                   |

## Textbook

The official course textbook is Absolute C++, Sixth, Fifth, or Fourth Edition, by Walter Savitch, Addison Wesley, 2016, 2013, or 2010, with or without MyProgrammingLab or any other publisher extras.

## Lecture and Discussion Sections

Lectures will present material from the course textbook, supplemented by additional subject matter. You are responsible for *all* material presented in *all* lectures.

In discussion sections, your TA will review material covered in the lectures, discuss homeworks and programming projects, pose problems to solve in class to ensure you understand key concepts, and answer questions.

Assignments

You cannot learn how to write programs without writing programs. There will be seven programming projects. Each project specification will detail any requirements that differ from the [general project requirements](#). Your program correctness score is based on your program's correctness as determined by our testing. The amount of time you spent working on the program is irrelevant; indeed, if you follow our software development advice, you'll probably spend less time and get a higher score than if you don't.

Since seven programs cannot give you experience with all the material in the course, an assignment may contain, in addition to a primary programming project, some tasks more in the nature of homework. These may require you to answer some questions and analyze or write small programs. Some of the work you put into the homework will do double duty: it will help you with a programming project or will serve as a good study guide for an exam. If you are seriously interested in mastering the course material, you will do every homework problem, even though not every problem of every homework assignment will be graded. (You won't know which problems won't be graded.)

Every C++ program you turn in for this class must run successfully using two compilers, as specified in the [Project Requirements](#) document.

Programming projects and homeworks are due at 11 PM on the dates listed below. Late submissions will be penalized by 0.0034722% per second (which comes to 12.5% per hour), making a submission worthless if submitted after 7 AM the next morning. The deadlines in our minds for the assignments are one day before these published deadlines. The published deadlines already account for extensions due to broken or stolen computers, medical issues, etc., so we will not be granting further individual extensions. It is *your* responsibility to start early, to make backups to removable devices or to online storage, and to make the deadlines in our minds the deadlines in your mind.

|           |   |
|-----------|---|
| Project 1 | Monday, October 7                                   |
| Project 2 | Thursday, October 17                                |
| Project 3 | <del>Tuesday, October 29</del> Thursday, October 31 |
| Project 4 | <del>Tuesday, November 5</del> Thursday, November 7 |
| Project 5 | Monday, November 18                                 |
| Project 6 | Monday, November 25                                 |
| Project 7 | Thursday, December 5                                |

Examinations

The midterms will cover material from the lectures and the textbook. The final examination will cover material from the entire course. Missing the final for any reason will result in a final exam score of zero.

## Grading

Your grade in the course will be determined from your total score, although a final exam score below 40 may subject you to a failing grade regardless of your total score. The total score is determined from the graded materials as follows:

|              |     |
|--------------|-----|
| Assignments  | 40% |
| Midterm exam | 25% |
| Final exam   | 35% |

The total points you earn from assignments (scaled to 0 through 100) will be capped at 30 points above the mean of your exam scores (scaled to 0 through 100). For example, if you average 90 on the assignments, your midterm score is 60, and your final is 40, then your assignment average is treated as only 80 (because that's 30 more than the mean of 60 and 40). In other words, your assignment scores won't count fully if you can't show from your exam scores that you learned what you should have from the assignments.

A request for reconsideration of the grading for an item must be made within one week of our sending you your score for that item.

You will not earn points on any of your coursework unless you have signed and turned in the [Academic Integrity Agreement](#) in lecture.