

CSCI 235: Procedural Programming



Spring 2018

Course Description

In this course, we will study the concepts of computer science using the C++ language. This will include problem-solving techniques, developing algorithms, program design, and testing. Additional topics include the history of computing and ethical issues in computing. Programming constructs include: control, repetition, functions, arrays, data types, and file handling. While C++ is an object-oriented language, for this introductory course we will focus on the procedural aspects of the language only. **Prerequisites:** CSCI 215/217 or instructor's permission, and MATH 110 or higher

Course Objectives

At the end of this course, the student is expected to:

- Define an algorithm.
- Develop algorithms for basic computing functions involving iteration, control-flow, files and functions.
- Analyze a problem description and to refine a solution into an algorithm.
- Take a large problem, break it down into smaller parts, solve it, and code it using C++.
- Understand the basic imperative syntax and semantics of C++.
- Translate an algorithm into C++.
- Demonstrate basic debugging capabilities.
- Express the issues involved in an ethical situation involving computing.

ABET Student Outcomes

The following student outcomes shall be supported by this course:

- (a) An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- (c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- (d) An ability to function effectively on teams to accomplish a common goal.
- (e) An understanding of professional, ethical, legal, security and social issues and responsibilities.
- (f) An ability to communicate effectively with a range of audiences.
- (g) An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- (h) Recognition of the need for and an ability to engage in continuing professional development.
- (i) An ability to use current techniques, skills, and tools necessary for computing practice.

Text

Malik, D. S. (2018). *C++ Programming: Program Design Including Data Structures*. 8th edition. Stamford, CT: Course Technology. ISBN: 978-1-337-11756-2. URL: <https://www.cengage.com/c/c-programming-program-design-including-data-structures-8e-malik>. *You may also choose to purchase the cheaper 7th edition for this course.*

Topic materials are expected to be read by students prior to the in-class discussions.

Attendance

Attendance is mandatory and CSUs FAs (Failure due to Absences) policy will be enforced. See the Student Handbook for more information on FAs. Since this class meets twice a week, 7 absences for any reason result in an automatic FA without exception. Three (3) instances of tardiness or leaving class early are equal to one absence. If you arrive after the role is called, check in with the professor directly after class so that you will be recorded as tardy instead of absent.

“Attendance” for the Online Course

Any online student who does not log into this Blackboard course for 28 consecutive days will earn a grade of FA (Failure due to Absences), in accordance with CSU Policy R-10. Online students are encouraged to attend lectures when possible, but physical attendance is not required. Lecture notes and other resources will be provided online.

Staying on top of things in an online course is of the utmost importance. There will be a class announcement at the beginning of each week detailing the week’s work. Stay up to date on these assignments; the more behind you get the less likely it becomes that you will pass the course. Email me as soon as you hit a problem; I am more than happy to help you.

Late Work

Deadlines are an inevitable part of life. Meeting deadlines is an important part of becoming a professional computer scientist. In order to begin to instill this within each of you, I am making a concerted effort to stick to all deadlines for programming exercises. *I will **not** grade late homework.*

The lowest assignment grade will be dropped at the end of the semester. Therefore, if you are a conscientious student and turn in all homework, you will benefit by dropping the lowest score. If you miss one deadline, that grade of zero will be dropped. If you miss multiple deadlines, your grade will be affected. I will look at your late work and let you know how you did if you bring it to me; however, *any late work will receive a grade of zero.*

Teamwork

There is an expectation of teamwork in many of the class/lab projects. The professor will use his/her discretion as to the team membership and will direct teams to produce a single solution among the teammates. Teamwork is a highly valued skill in the workplace and society as a whole. Through these teamwork exercises the goal is to develop an understanding of what makes teams successful and to be able to function effectively as a teammate.

Academic Integrity and the Honor Code

All students are expected to adhere to [Charleston Southern University's code of Academic Honesty](#). **All assignments** are individual assignments unless explicitly specified by the professor. Do not collaborate, search for posted solutions, or post code online. **Make sure that you write every line of your own code.** You should not use **ANY** outside sources of code for this class. Using or referencing code written by someone else or sharing your code with others (online or in person) is considered a violation of the academic integrity policy and will result in a report to the registrar's office. **Posting code relating to assignments on the Internet is prohibited** (e.g., **don't** post to discussion boards, forums, blogs, public repositories, **chegg.com**, etc.). Do NOT look at your neighbor's screen for hints or ask, "how did you do that?", unless you talk to me **beforehand**.

- **NEVER** ask to see someone else's code in person or online (chegg.com, forums, email, ect.).
Do ask your professor if you have questions or get stuck.
- **NEVER** search online for assignment solutions.
Do reference code from the book, code given to you by the instructor, and online documentation on the C++ language.
- **NEVER** exchange code in any manner or you tell someone what code they need.
You may talk to your classmates about C++ or assignments as long as you are not sharing ideas for assignment solutions.

A Community of Honor

As a liberal arts university committed to the Christian faith, Charleston Southern University seeks to develop ethical men and women of disciplined, creative minds and lives that focus on leadership, service and learning. The Honor System of Charleston Southern University is designed to provide an academic community of trust in which students can enjoy the opportunity to grow both intellectually and personally. For these purposes, the following rules and guidelines will be applied.

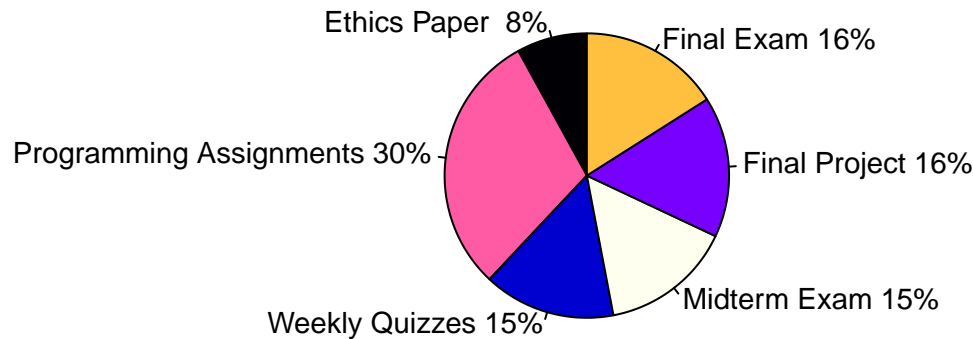
"Academic Dishonesty" is the transfer, receipt, or use of academic information, or the attempted transfer, receipt, or use of academic information in a manner not authorized by the instructor or by university rules. It includes, but is not limited to, cheating and plagiarism as well as aiding or encouraging another to commit academic dishonesty.

"Cheating" is defined as wrongfully giving, taking, or presenting any information or material borrowed from another source - including the Internet by a student with the intent of aiding himself or another on academic work. This includes, but is not limited to a test, examination, presentation, experiment or any written assignment, which is considered in any way in the determination of the final grade.

"Plagiarism" is the taking or attempted taking of an idea, a writing, a graphic, music composition, art or datum of another without giving proper credit and presenting or attempting to present it as one's own. It is also taking written materials of one's own that have been used for a previous course assignment and using it without reference to it in its original form. Students are encouraged to ask their instructor(s) for clarification regarding their academic dishonesty standards.

Grading Policy

Weights



Grading Scale for Letter Grade

Letter grades will be calculated from the following ranges.



Course Evaluations

Course evaluations are completed via the web. Instructions on how to access this system and how to evaluate the course will be available midway through the semester. I encourage you to take this seriously and provide constructive feedback for improving the class.

Student Representatives

These are students who are designated by letter to represent the University on official business, e.g., athletic, music, and similar events. If officially scheduled absences cause these students to miss tests, assignments, and/or other similar academic activities, University policy allows these to be made up without penalty. In accordance with this policy, Student Representatives may opt to either make up tests prior to departure, or supplanting missed tests with the final exam grade. Final exams must always be taken prior to departure to avoid an Incomplete for the course. Scheduled assignments remain subject to the lateness policy and must be turned in before departure to avoid lateness penalties. Student Representatives are responsible to inform the instructor of official absences and to make all appropriate arrangements.

Students with Disability

Any student who may need of accommodations should review the requirements / procedures on [Disability Services website](#). Once approved to receive accommodations through Disability Services, the student will need to contact the instructor.

Nondiscrimination Policy and Student Rights

Charleston Southern University does not illegally discriminate on the basis of race, color, national or ethnic origin, sex, disability, age, religion, genetic information, veteran or military status, or any other basis. Inquiries regarding the non-discrimination policies should be directed to Latitia R. Adams, Title IX Coordinator, 843-863-7374, ladams@csuniv.edu. Students should refer to the [CSU Student Handbook](#) to be fully informed of their rights and remedies.

Tentative Course Schedule

The weekly schedule is subject to change.

#	Week Days	Lecture Topics	Textbook
1	01/08 – 01/12	Syllabus, Schedule, etc.; Overview of Computers and Programming Languages; Introduction to Flowcharts and the Command Line	CH 1
2	01/15 – 01/19	Basic Elements of C++	CH 2
3	01/22 – 01/26	Input / Output	CH 3
4	01/29 – 02/02	Boolean Expressions and Conditionals (Branching)	CH 4
5	02/05 – 02/09	Repetition (Looping)	CH 5
6-7	02/12 – 02/23	User-Defined Functions	CH 6
7	02/22	Midterm Exam	CH 1-6
8	02/26 – 03/02	User-Defined Simple Data Types and Namespaces	CH 7
9	03/05 – 03/09	<i>Spring Break</i>	
10	03/12 – 03/16	User-Defined Simple Data Types and Namespaces	CH 7
11-12	03/19 – 03/30	Arrays and Strings	CH 8
13	04/02 – 04/06	Records	CH 9
14	04/09 – 04/13	Review / Work on Final Project	
16	April 26th	Final Exam	CH 1-9