

CSE 101

Introduction to Data Structures and Algorithms

Winter 2021

Description: Introduction to abstract data types and basics of algorithms. Linked lists, stacks, queues, hash tables, trees, heaps, and graphs will be covered. Students will also be taught how to derive big-Oh analysis of simple algorithms. All assignments will be in C/C++.

Prerequisites: CSE 12 and CSE 12L, or BME 160; CSE 13E or CSE 13S; and CSE 16; and CSE 30; and MATH 11B or MATH 19B or MATH 20B or AM 11B; Students may enroll in CSE 101 without having completed CSE 30 and CSE 13S or CSE 13E if they completed CSE 15 and CSE 15L (formerly CMPS 12B/M) by fall 2019; and CSE 16; and MATH 11B or MATH 19B or MATH 20B or AM 11B; and one course from the following: MATH 21, MATH 22, MATH 23A, AM 10, or STAT 131.

Days & Times: TTh 3:20-4:55pm (via zoom)

Class Webpage: <https://classes.soe.ucsc.edu/cse101/Winter21/>

Instructor: Patrick Tantalo <http://users.soe.ucsc.edu/~ptantalo/>

Office Hours: Wednesday 10:00am-12:00pm & 2:00pm-4:00pm (via zoom)

Dates: Wednesday January 6 – Wednesday March 10

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Teaching Assistants:

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Course Tutors:

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MSI Study Group Leader:

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Required Text:

Introduction to Algorithms (3rd edition) by Cormen, Leiserson, Rivest and Stein. MIT Press 2009 (ISBN 978-0-26-203384-8)

Recommended Texts:

Open Data Structures (pseudo-code edition) by Pat Morin. <https://opendatastructures.org/>

Data Abstraction & Problem Solving with C++ (6th edition) by Carrano & Henry. Pearson 2013 (ISBN 978-0-13-292372-9)

Coursework:

70% Programming Assignments (8): Due at roughly 7 day intervals

20% Quizzes (5): Tuesdays 1/12, 1/26, 2/9, 2/23, 3/9 (times to be announced)

10% Final Exam: Tuesday March 16 (time to be announced)

All scores are rounded to the nearest 10th of a percent. They will not be rounded further. No scores are curved. The following letter grade boundaries will be used to determine your grade in the class.

Grading scale:

A+	98.0% - 100%
A	93.0% - 97.9%
A-	90.0% - 92.9%
B+	88.0% - 89.9%
B	83.0% - 87.9%
B-	80.0% - 82.9%
C+	78.0% - 79.9%
C	70.0% - 77.9%
C-	68.0% - 69.9%
D+	65.0% - 67.9%
D	61.0% - 64.9%
D-	59.0% - 60.9%
F	0% - 58.9%

Accommodations for Students with Disabilities

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me by email, preferably within the first two weeks of the quarter. I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu. See also <https://drc.ucsc.edu/>.

Academic Honesty:

The Baskin School of Engineering has a zero tolerance policy for any incident of academic misconduct. If cheating occurs, consequences may range from getting zero on a particular assignment to failing the course. In addition, every case of academic misconduct is referred to the students' college Provost, who sets in motion an official disciplinary process. Cheating in any part of the course may lead to failing the course, suspension or dismissal from the Baskin School of Engineering, or from UCSC.

What is cheating? In short, it is presenting someone else's work as your own. Examples include copying another students' homework, programming assignment, or exam solution; allowing your own work to be copied; or in any way facilitating misconduct by others. You may discuss programming projects with fellow students, but your collaboration must be at the level of *ideas* only. You may freely give and receive help on the UCSC computer facilities, code editors and IDEs, the UNIX operating system, and on the proper use and syntax of the C and C++ programming languages. You may also freely use any *example code* posted by me on the class webpage. However, you may not *copy, paste, email, transfer* or *share* in any way the *source code* for projects in this class. Go to https://www.ue.ucsc.edu/academic_misconduct to see the University's official policy on Academic Misconduct.

Important Dates and Information:

Waitlists expire: Wednesday January 13

Add/Drop/Swap deadline: Monday January 25

Withdraw from class deadline: Tuesday February 16

Enrollment FAQ: <https://registrar.ucsc.edu/faqs/students/enrollment/index.html>

Waitlist FAQ: <https://registrar.ucsc.edu/faqs/students/wait-list/index.html>

Enrollment Videos: <https://orientation.ucsc.edu/next-steps/slug-videos.html#enrollment>

More How-To Videos: <https://orientation.ucsc.edu/summer/how-to-index.html>