



California State University, Sacramento
College of Engineering and Computer Science

Computer Science 20: Programming Concepts and Methodology II

Summer 2025 Syllabus

Instructor

Devin Cook, M.S.

Contact Information

I use the same e-mail address to answer questions and to receive your coursework. So, please use a descriptive subject in your e-mail. I get quite a bit of e-mail, and the subject helps a lot.

E-Mail	dcook@csus.edu
Office	Riverside Hall 5009

Website

All the information in this syllabus – as well as other helpful information presented during the course – can be found online.

Website	athena.ecs.csus.edu/~dcook/20
----------------	--

Course Description

Catalog Description

Application of object-oriented techniques for systematic problem analysis and specification, design, coding, testing, and documentation. Semester-long project approach emphasizing larger programs. Managing program complexity using abstraction. Introduction to algorithm analysis and Big-O notation. Advanced language features. Basic sorting and searching algorithms. Recursion. Lecture two hours, technical activity and laboratory two hours.

Prerequisites

CSc 15

Textbook (Optional)

Building Java Programs: A Back to Basics Approach, 5th edition by Stuart Reges and Marty Stepp

Major Topics

- Object-oriented techniques, data abstraction, and procedural abstraction including proper programming style, program documentation, and testing and debugging techniques.
- Representation of various abstract data types and their associated algorithms: strings, linear lists, (including cursor and linked representation). Basic sorting and searching algorithms such as insertion sort and binary search.
- Lifetime of variables, dynamic memory allocation and the use of references
- Exceptions and exception handling, inheritance, interfaces, abstract classes
- Recursion as a problem-solving technique and its implementation in programming languages
- Abstraction and information hiding, and the support that object-oriented programming provides.

Academic Integrity

- Do **not** plagiarize. Plagiarism is the act of incorporating another person's work into yours and claiming it as your own.
- Do **not** aid any student to commit academic fraud. This means you **cannot** show your solution to another student or show how to do it.
- Do **not** use Discord for any channel related to the course. This will be considered cheating.
- In **any** case of cheating, both the student, who copied the solution, **and** the student who allowed it, will receive a zero. For severe incidents, it will result in an automatic **F** in the course.
- Any assignments done in prior semesters, *even if you took this class*, are **not** allowed. Any prior work will receive an automatic zero.

Lectures

- Attendance is vital to your success in the course. If you miss a class, you are responsible for checking with a classmate about the material we covered.
- Please ask questions or give comments. I enjoy back-and-forth interactions with students. There are no dumb questions!
- During lectures **no** electronic devices, of any type, are allowed. This includes laptops, phones, and other texting devices. **No** exceptions.
- I will provide all the lecture slides in PDF format on the website. So, you don't have to take notes.

Assignments

- You only get to submit each assignment **once** – so make sure you did it correctly!
- Late assignments are penalized. I will take off 20%, per day, starting immediately after the assignment is due. Weekend days are counted.
- Do not ask other students for help.** All assignments are individual work only.
- My job is not to give you the correct solution, but to help you figure it out by yourself. There are no “dumb” questions, so don't be afraid to ask. But, don't be upset if I don't give an answer!

Grading

Title	Points
Lab Activities / Quizzes	300
Midterm Exam	300
Final Exam	300
	900

- Any material covered in the lectures, or the notes can be included in the exams.
- Note:** Depending on how much material is covered during the semester, the percentages may vary.

Student Resources

- Student Health & Counseling Services**
<https://www.csus.edu/student-life/health-counseling>
- Crisis Assistance & Resource Education Support (CARES)**
<https://www.csus.edu/student-affairs/crisis-assistance-resource-education-support>
- Services for Students with Disabilities**
<https://www.csus.edu/student-affairs/centers-programs/services-students-disabilities>
- Reading and Writing Center**
<https://www.csus.edu/undergraduate-studies/writing-program>