



California State University, Sacramento  
College of Engineering and Computer Science

Computer Science 20: Programming Concepts and Methodology II

Summer 2025 Syllabus

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## Instructor

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Devin Cook, M.S.

## Contact Information

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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.

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| <b>E-Mail</b> | dcook@csus.edu      |
| <b>Office</b> | Riverside Hall 5009 |

## Website

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

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| <b>Website</b> | <a href="http://athena.ecs.csus.edu/~dcook/20">athena.ecs.csus.edu/~dcook/20</a> |
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## Course Description

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### 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

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- 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.

## Crashing the Course

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**All** student adds are done, in-person, during the second week of the Semester.

Wait-listed students will be added first. But, only students who are physically present will be added.

## Lectures

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- 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.
- During lectures **no** electronic devices, of any type, are allowed. This includes laptops, phones, and other texting devices. **Only** tablets are allowed.
- I will provide all the lecture slides in PDF format on the website. So, you don't have to take notes.

## Assignments

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- You only get to submit each assignment **once** – so make sure you did it correctly!
- Late assignments are penalized. I will take off **25%**, 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.
- Any assignments done in prior semesters, *even if you took this class*, are **not** allowed. Any prior work will receive an automatic zero.

## Academic Integrity

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- 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** minor case of cheating, both the student that copied the solution **and** the student who allowed it, will receive a zero. Any subsequent cheating will result in an automatic **F** in the course.
- Cheating on an exam, downloading code, having another student do your work, or using AI (in any way), will result in an automatic **F** in the course.
- Any cheating offense **will be reported to the Dean of Students.**

## Grading

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| 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.