

# Computer Systems and C Programming

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Hi there, welcome to CSE 13s, Computer Systems and C Programming!

**Instructor:** Alex Rudnick ([alexr@ucsc.edu](mailto:alexr@ucsc.edu) (<mailto:alexr@ucsc.edu>))

**TA:** Nistha Kumar ([nkumar20@ucsc.edu](mailto:nkumar20@ucsc.edu) (<mailto:nkumar20@ucsc.edu>))

**Tutor** (LSS): Pooja Das Gupta

## Sections

Our TA will run weekly sessions, where you can get help, and there will sometimes be explanations on tooling or other interesting topics!

Section attendance is *strongly encouraged*.

## Expectations for the class

For this class, you'll need access to Linux in some form or another! You'll want either an Ubuntu Linux installation on your computer, or in a virtual machine (such as VirtualBox or UTM), or ssh access to a Linux computer. We are using Ubuntu 24.04 LTS as our official Linux distribution.

The homeworks will be the bulk of the work in the class. Make sure to start early! You'll always have at least a week to do each homework, and you'll be required to make an *initial check-in* (which will contain a prose design document) before the final due date. So you can think of each homework as having two due dates.


Do not share code on your assignments. Collaboration *about concepts* is fine, as long as you (a) list your collaborators but make sure to (b) type all your own code, and (c) cite any external sources you use. It's against course policy to show people (other than course staff) your code for your assignments.

Both prose and code that you turn in for this class must be code that you typed (or spoke into an accessibility device, etc) yourself.

## Class materials

The required textbook is *The C Programming Language* (2nd ed) by Kernighan & Ritchie.

This is a classic, and you need a copy, either physical or digital. And you need to read it! Make sure to get the second edition, which will say "ANSI C" on the front.

There are more helpful optional references, available at <https://go.oreilly.com/university-of-california-santa-cruz>  (<https://go.oreilly.com/university-of-california-santa-cruz>)! You may find these books helpful:

- Version Control with Git
- Learning the bash Shell
- Learning the vi and Vim Editors
- Linux in a Nutshell
- C in a Nutshell
- Managing Projects with GNU Make

## Grading

Assignments: 60% (there will be roughly 1 homework per week, except for exam weeks)

Exams: 30% (20% for the final, 10% for the midterm)

participation/quizzes: 10%

## Exams

There will be a take-home midterm exam during the sixth week of the class, and a final exam at the [appointed final exam time, \(https://registrar.ucsc.edu/soc/final-examinations.html\)](https://registrar.ucsc.edu/soc/final-examinations.html) which for us is Monday, June 10th at noon.

## Getting help

Ask for help from the course staff! We'll have online discussions (possibly on Discord?). We have a TA and a tutor.

Also the TA and instructor have office hours, which we'll post.

## How not to get help

There are a lot of people in this class, and at this scale, some awful stuff is going to happen to *somebody*. Probably many of you will have family emergencies; somebody will get sick; there will be travel mishaps. Some of your computers will break.

We understand. We believe you. We like you and want you to be well. You don't have to go into gruesome detail about your family members health issues! *You will have late days allocated for your assignments*, and you should use them when you need them.






What you shouldn't do: don't email the instructor or your TA about all the awful stuff.

Just do your best to get your stuff in on time, and come to class and section as much as you can. If you can't make it in person, watch the videos. Do the participation quizzes and participate in the discussions. It's going to be alright.

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*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, or in office hours, 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](mailto:drc@ucsc.edu).*

## Course Summary:

Date	Details	Due
Wed Jul 3, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=518559&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=518559&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=518559&amp;include_contexts=course_74347</a> )	2pm to 3:15pm
Fri Jul 5, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/602473">homework 0: getting started</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/602473">https://canvas.ucsc.edu/courses/74347/assignments/602473</a> )	due by 11:59pm
Tue Jul 9, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/603474">homework 1: design doc</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/603474">https://canvas.ucsc.edu/courses/74347/assignments/603474</a> )	due by 11:59pm
Wed Jul 10, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=518560&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=518560&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=518560&amp;include_contexts=course_74347</a> )	2pm to 3:15pm
Fri Jul 12, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/603475">homework 1: our first few functions in C, conditionals, and a little bit of I/O</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/603475">https://canvas.ucsc.edu/courses/74347/assignments/603475</a> )	due by 11:59pm

Date	Details	Due
Tue Jul 16, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/604401">homework 2: design doc</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/604401">https://canvas.ucsc.edu/courses/74347/assignments/604401</a> )	due by 11:59pm
Wed Jul 17, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=518561&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=518561&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?</a> <a href="https://canvas.ucsc.edu/calendar?event_id=518561&amp;include_contexts=course_74347">event id=518561&amp;include_contexts=course 74347</a> )	2pm to 3:15pm
Thu Jul 18, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/604402">homework 2: functions, arrays, and pointers</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/604402">https://canvas.ucsc.edu/courses/74347/assignments/604402</a> )	due by 11:59pm
Tue Jul 23, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/605578">homework 3: design doc</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/605578">https://canvas.ucsc.edu/courses/74347/assignments/605578</a> )	due by 11:59pm
Wed Jul 24, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=518562&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=518562&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?</a> <a href="https://canvas.ucsc.edu/calendar?event_id=518562&amp;include_contexts=course_74347">event id=518562&amp;include_contexts=course 74347</a> )	2pm to 3:15pm
Thu Jul 25, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/605579">homework 3: strings, arrays and function pointers</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/605579">https://canvas.ucsc.edu/courses/74347/assignments/605579</a> )	due by 11:59pm
Tue Jul 30, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/608188">homework 4: design doc</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/608188">https://canvas.ucsc.edu/courses/74347/assignments/608188</a> )	due by 11:59pm
Wed Jul 31, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=518563&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=518563&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?</a> <a href="https://canvas.ucsc.edu/calendar?event_id=518563&amp;include_contexts=course_74347">event id=518563&amp;include_contexts=course 74347</a> )	2pm to 3:15pm
Fri Aug 2, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/610278">midterm assignment!</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/610278">https://canvas.ucsc.edu/courses/74347/assignments/610278</a> )	due by 3pm
Tue Aug 6, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/608189">homework 4: making the text editor!</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/608189">https://canvas.ucsc.edu/courses/74347/assignments/608189</a> )	due by 11:59pm
Fri Aug 9, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=522946&amp;include_contexts=course_74347">alexr office hours</a> ( <a href="https://canvas.ucsc.edu/calendar?event_id=522946&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?</a> <a href="https://canvas.ucsc.edu/calendar?event_id=522946&amp;include_contexts=course_74347">event id=522946&amp;include_contexts=course 74347</a> )	3pm to 4:15pm
	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/610875">homework 5: design doc</a> ( <a href="https://canvas.ucsc.edu/courses/74347/assignments/610875">https://canvas.ucsc.edu/courses/74347/assignments/610875</a> )	due by 11:59pm

Date	Details	Due
Mon Aug 12, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523118&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523118&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523118&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523118&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Tue Aug 13, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/610876">homework 5: strings, searching, words, I/O</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/610876">(<a href="https://canvas.ucsc.edu/courses/74347/assignments/610876">https://canvas.ucsc.edu/courses/74347/assignments/610876</a>)</a>	due by 11:59pm
Fri Aug 16, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523119&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523119&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523119&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523119&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Fri Aug 16, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/611981">homework 6: design doc</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/611981">(<a href="https://canvas.ucsc.edu/courses/74347/assignments/611981">https://canvas.ucsc.edu/courses/74347/assignments/611981</a>)</a>	due by 11:59pm
Mon Aug 19, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523120&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523120&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523120&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523120&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Tue Aug 20, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/611982">homework 6: strings, searching, pointers</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/611982">(<a href="https://canvas.ucsc.edu/courses/74347/assignments/611982">https://canvas.ucsc.edu/courses/74347/assignments/611982</a>)</a>	due by 11:59pm
Fri Aug 23, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523121&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523121&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523121&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523121&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Fri Aug 23, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/613662">homework 7: design doc</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/613662">(<a href="https://canvas.ucsc.edu/courses/74347/assignments/613662">https://canvas.ucsc.edu/courses/74347/assignments/613662</a>)</a>	due by 11:59pm
Mon Aug 26, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523122&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523122&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523122&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523122&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Fri Aug 30, 2024	 <a href="https://canvas.ucsc.edu/calendar?event_id=523123&amp;include_contexts=course_74347">alexr office hours</a> <a href="https://canvas.ucsc.edu/calendar?event_id=523123&amp;include_contexts=course_74347">(<a href="https://canvas.ucsc.edu/calendar?event_id=523123&amp;include_contexts=course_74347">https://canvas.ucsc.edu/calendar?event_id=523123&amp;include_contexts=course_74347</a>)</a>	2pm to 3:15pm
Fri Aug 30, 2024	 <a href="https://canvas.ucsc.edu/courses/74347/assignments/615130">final exam assignment!</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/615130">(<a href="https://canvas.ucsc.edu/courses/74347/assignments/615130">https://canvas.ucsc.edu/courses/74347/assignments/615130</a>)</a>	due by 3pm
Fri Aug 30, 2024	 <a href="#">homework 7: hash tables, I/O and strings</a>	

Date	Details	Due
	<a href="https://canvas.ucsc.edu/courses/74347/assignments/613663">https://canvas.ucsc.edu/courses/74347/assignments/613663</a>	
	 <a href="#">Syllabus Acknowledgement (New Quiz)</a> <a href="https://canvas.ucsc.edu/courses/74347/assignments/563166">https://canvas.ucsc.edu/courses/74347/assignments/563166</a>	