

**Course Information**

Instructor: Felix Muzny

Contact: [muzny@colorado.edu](mailto:muzny@colorado.edu)

Office: ECOT (engineering center tower) 734

Credit: 3 credits

Lecture times: Mondays &amp; Fridays 2 - 2:50pm, CHEM 140

Course website: <https://moodle.cs.colorado.edu>

Office hours: see course website

**TAs:**

Head TA: Shirly Montero Quesada

Nick Lopinski

Suchi Lulla

Will Ness

Kaelan Patel

Aiden Prohaska

Blaine Rubenson

Catalina Rondini

Chaitan Walia

**Labs:**

Section	Location	Time	TAs
100-101	ECES 112	8 - 9:40	Suchi
100-102	ECES 112	10 - 11:40	Shirly & Nick
100-103	ECES 112	12 - 1:40	Kaelan & Catalina
100-104	ECES 112	2 - 3:40	Shirly & Will
100-105	ECES 112	4 - 5:40	Chaitan & Blaine
100-106	ECES 112	6 - 7:40	Aiden

**Course Goals**

1. Learn to take a systematic approach to problem solving, to formulate an algorithm/strategy with a computational approach.
  - a. To understand the form and function of computer programming languages.
  - b. To know the steps in a software development process.
  - c. To understand programs following the input, process, output (IPO) pattern.
2. Understand how computing and computational processes interact with the world at large.
  - a. Apply computational knowledge to the analysis of current events and innovations.
3. Understand and be able to articulate problems that computer scientists study at a high level.



## Topics

There are three broad topics that align with the learning objectives for this course:

### Programming topics

- print/input functions
- Data types, variables
- Functions, parameters, returns
- Iteration
- Lists
- Boolean, conditionals
- File input/output
- Using modules/libraries
- Using objects in programs

### Computing in the modern world

- AI in the news + the world around us
- Search (and privacy concerns)
- Data and scale
- Data visualization

### Computer science topics

- Search
- Sorting
- Runtime
- Classic computer science problems

A detailed calendar is located on the course website.

## Expectations

You are expected to come to class and actively participate in group and individual work. You are expected to treat your fellow classmates with respect to create an environment that is friendly to learning.

You are expected to do the work assigned for this course. You should expect to spend between 6 and 9 hours outside of class every week studying and working on assignments.

**We cannot emphasize enough the importance of doing homeworks and quizzes to your success in this class.**

## Late Policy

All homeworks must be turned in on time. Incomplete homeworks that are turned in on time will receive partial credit. Late homeworks will not receive credit.

Extensions will be given in the case of *exceptional* circumstances accompanied by a healthcare provider letter, military activation order, obituary/memorial service notice, police/fire report, etc.



All requests for extensions should be directed to Felix Muzny (muzny@colorado.edu).

### Make-Up Policy

If you are unable to attend the lab that you are registered for during a particular week, it is your responsibility to contact both your TAs and the TAs of the lab that you wish to attend instead to get approval beforehand. You should contact the TAs at least 24 hours before the earlier lab whenever possible.

### Collaboration Policy

You are expected to do your all of your work yourself.

- **Strategies:** You may talk with your classmates about *general strategies* but you may not talk about *specific solutions*.
- **Explaining concepts:** You may talk with your classmates about how certain techniques work *in general* but not how to write any part (or sub-part) of the solution needed for the homework.
- **A good rule of thumb:** don't show your assignments to other people; don't look at other people's assignments; don't write code together unless the assignment explicitly states that you may work in pairs. This includes working through solutions on whiteboards as well as telling your friend verbally what you have written.

The finer-grained details:

- **Do not search for a solution online:** You may not actively search for a solution to the problem from the internet. This includes posting to sources like StackExchange, Reddit, Chegg, etc.
  - **StackExchange Clarification:** Searching for basic techniques in Python is totally fine. If you want to post and ask "How do convert a float to an integer" that's fine. What you **cannot** do is post "Here's the function my prof gave me to write. I need to convert this temperature in celcius to fahrenheit. **Give me code!**". That's cheating.
- **Plagiarism:** assignments **and code** that you turn in should be written entirely on your own. You should not need to consult sources beyond your textbook, class notes, posted lecture slides and notebooks, and Python/Matplotlib documentation.
- **Tutors:** you should always consult the TAs for this course if you need extra help. They are here specifically to help you! You should never have anyone else write code for you. This includes tutors, friends, strangers, friends of friends. Anyone who is not you.
  - **A second note on tutors:** our TAs are here for you. They are not paid to do your assignments, but to help you learn. If you are using a tutor that is not helping you learn, **they are not helping you**.
  - **A third note on tutors:** if you turn in work that you are unable to explain, this will result in a loss of credit.
- **When in doubt, ask:** If you have doubts about this policy or would like to discuss specific cases, please ask the instructor.



Copying and/or soliciting a solution to a problem from the internet or another classmate constitutes a violation of the course's collaboration policy and the honor code and will result in a trip to the honor council, loss of credit for the assignment, and a grade reduction.

### Course Resources

The notes provided by the instructor are supplemented by an interactive online free textbook:

How to think like a computer scientist – Interactive Edition

The main website can be found here: <https://runestone.csel.io/thinkcspy1200/index.html>

### Grading

	Due Dates & other info	Total points	Grade percentage
Homework (7 total)	Due Tuesdays at 9pm.	350	35%
Data Visualization Project	Task 1 - April 4th Task 2 - April 11th Task 3 - April 18th Task 4 - April 25th	200	20%
Quizzes (25 total)	Due on Mondays and Fridays before lecture. Each quiz is worth 5 points.  All points over 100 that you earn in this category are extra credit.	105	10.5%
Labs (15 total)	Each lab is worth 3 points. To earn full credit you must be present <b>and</b> working for the duration of the lab.	45	4.5%
Exams	Friday, February 15th (100 points, in lecture) Friday, March 22nd (100 points, in lecture)  Final — date TBD — (100 points)  <b>*You must earn an average of at least 60% on the exams to earn a C- or better in the course. If your exam average is under 60%, you will be capped at a D+.*</b>	300	30%



## Calendar of Topics

Week	Topic
1/14	Introduction to computational thinking, how computers work
1/21	computer organization, data types and variables
1/28	data types and variables, input function, pseudocode, functions
2/4	Functions, parameters, returns
2/11	boolean logic, conditionals, <b>midterm 1</b>
2/18	while loops
2/25	lists, for loops
3/4	using modules, mutability, sorting and searching, runtime
3/11	file input/output
3/18	file input/output, review, <b>midterm 2</b>
3/25	- spring break -
4/1	data visualization, projects, using matplotlib
4/8	using matplotlib, graphs and graph analysis
4/15	artificial intelligence and data
4/22	classic computer science problems
4/29	review

See course website for homework deadlines.

## Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.



*This course requires the use of Jupyter Notebooks which have currently not been reviewed fully for accessibility. If you use assistive technology to access the course material, please contact the course instructor and/or Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) as soon as possible to discuss other effective means for providing equal alternate access.*

## **Classroom Behavior**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

## **Honor Code**

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code ([honor@colorado.edu](mailto:honor@colorado.edu)); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

## **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation**

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#).

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to



ensure that individuals impacted receive information about options for reporting and support resources.

## **Religious Holidays**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, contact the instructor at least 7 days in advance to reschedule a test. Contact both your TAs and the TAs of the lab that you wish to attend at least 24 hours before the earlier of the two to reschedule a lab.

See the [campus policy regarding religious observances](#) for full details.