

Computer Science Principles

REVIEW

Announcements

Final Exam on Thursday, **December 16** at **3:15 – 5:45 pm**

Final Exam:

- Mainly focused on material from the second half of semester (Modules 13-21)
- However, will have some material from the first half of the semester (Modules 3-12)
- Combination of text response, multiple choice questions, and programming problems
 - Around 50% longer than a midterm exam
- Open book / open notes – same as midterm exams
- Video camera **must** be on to receive credit
 - You must be in the video – pointing your video at the ceiling will not count
 - If you do not have a web camera, you can login to Zoom with your phone

You learned a lot this
semester...

Python

Commands and expressions

Arithmetic

Variables

Assignments

Handling errors

Keyboard input

Console output

Functions (a form of abstraction)

Flow of execution

Conditionals and Boolean expressions

Python

Relational & logical operators

Strings

- String functions
- String methods
- Slicing and splitting strings

Lists

- List methods
- Slicing

Iteration (loops)

- For and while loops
- Nested loops

Algorithms and Data Structures

Understanding and writing algorithms

Random numbers

- Making simulations

Tuples

Dictionaries

File I/O

Data Science

Intro to Data Science

Using Pandas library

- Loading in data
- Exploring / analyzing data
- Answering questions

Making visualizations in Python

Principles of Data Visualizations

What you have learned. . .

Yes, we've done all that!!!

- You learned a lot about CS in this overview course on Computer Science Principles

We used Python as a tool to learn CS concepts and programming

- You might learn a new language, but the fundamentals will be the same

If you are majoring in CS, this is be a good starting point and you will be ready for the next step:

- CSE 114 Introduction to Object-Oriented Programming
- CSE 215 Foundations of CS (if you want to try 2 courses next semester)

If you are not a CS major, this is still a good exposure to CS, programming, and data science

These skills can be helpful for many different jobs

- Researcher, data scientist, project manager, engineer, etc.

Suggestion

If you are planning on taking CSE 114 next semester or in the future . . .

Review this course material during the break

- Start with the first lecture and go through them all in order
- As you read the lecture notes, do each lab exercise followed by the problem sets, without looking at the solution
- Doing it the second time will be much easier and you will learn a lot! It will be much faster as well.

If you need help as you review, let me know

If interested, read the full course book in detail during the break

Finally . . .

I had lots of fun teaching the course!

I hope you had fun, too.

I know this course was a lot of work and very difficult for many of you

- However, this is only the beginning of studying computer science and it takes a lot of effort
- It can be particularly difficult at the start, and it is very impressive for you all to have made it this far!

Good luck with your finals and have a great break!

- Hope to see you next semester on campus