

SYLLABUS
CS5001 - Intensive Foundations of Computer Science
Khoury College
Spring 2020

Dr. Laney Strange West Village H, Room 310A laney@northeastern.edu	Dr. Keith Bagley West Village H, Room 302 k.bagley@northeastern.edu
Piazza: https://piazza.com/northeastern/spring2020/cs5001boston Course web page: https://course.ccs.neu.edu/cs5001/	

Schedule

- Lecture
 - Section 1 (Strange): W 1:35-4:50pm. Forsyth 129
 - Section 2 (Strange): W 6:00-9:15pm. Kariotis 011
- Lab
 - Section 1 (Bagley): R 1:35-4:50pm. WVH 210/212
 - Section 2 (Strange): R 6:00-9:15pm. WVH 210/212

You MUST sign up for the lab section, CS5003. We will meet every Thursday to get some hands-on practice with recent lecture material. Some recitation times will also be used for Align seminars.

Final Exam

- Wednesday, April 15, 2020. During lecture.

Office Hours (Instructors)

- Laney Strange, WVH 310A: TR 3:00-5:00pm
- Keith Bagley, WVH302: M 2:30-5:00pm, R 5-7:00pm

Teaching Assistants

- Isabella Avila Lares, avilalares.i@husky.neu.edu
- Bobby Lupo, lupo.r@husky.neu.edu
- Brennan Beeler, beeler.b@husky.neu.edu
- Samuel Engida, engida.s@husky.neu.edu
- Kraig Johnson, johnson.kra@husky.neu.edu
- Shebna Mathew, mathew.she@husky.neu.edu
- Edward Wersocki, wersocki.e@husky.neu.edu
- Utkarshna Sinha, sinha.ut@husky.neu.edu
- Kristi Spicer, spicer.k@husky.neu.edu
- Miranda Tran, tran.mir@husky.neu.edu
- Dayton Wilson, wilson.jos@husky.neu.edu
- Zefan (KD) Zhang, zhang.zef@husky.neu.edu

Office hours are scheduled throughout the week. Below is the **tentative** schedule, but it is still subject to change. Keep an eye on the course website for the final schedule when the semester officially begins.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
5-8pm RY 277	2-5pm KA 304 5-8pm KA 304	4:30-7:30pm KA 304		3-6pm BK 210	2-5pm FR 238	2-5pm FR 238

Required Textbook

- Python Programming in Context, 3rd edition. Miller and Ranum. Jones and Bartlett, 2019. ISBN: 1284175553. Available on [Amazon](https://www.amazon.com/) and in the Northeastern bookstore.

Course Description

This course is an accelerated introduction to computer science with the Python programming language. Along with the other courses in the Align program, it will prepare you to complete your Master's Degree in computer science.

We believe that computer science is for everyone. No matter what your background is, you can succeed in CS5001. Computer science is a creative, collaborative field -- it's not just programming. Although programming is certainly an important craft and Python is an essential tool, we emphasize concepts and problem-solving over programming language. Learning computer science is like learning a new spoken language. There are rules of syntax and semantics, and sometimes a whole new mindset will apply. In this course, you'll learn how to think algorithmically, and how to solve problems elegantly.

The major topics within the course, and their corresponding textbook chapters, are the following (note that the order in which topics are covered might change):

Text Section(s)	Topics
Ch 1	Variables, strings, arithmetic operations
Ch 2	Functions and parameter passing; testing and debugging
Ch 2	Conditionals, boolean expressions, strings
Ch 3	Iteration (while loops, for loops) and strings
Ch 4	Lists and dictionaries
Ch 9	Recursion
Ch 5	File processing; exception handling

Ch 10	Classes and objects; stacks and queues
Ch 13	Event-driven programming
--	Program efficiency; search + sort

Evaluation

Factor	Number	Weight
Homework Sets (lowest dropped)	7	40%
Project	1	10%
Quizzes	4	10%
Midterm Exam	1	20%
Final Exam	1	20%

You can check your homework grades online through the Khoury HandIn server. Allow at least one week after you submit a homework before the grades are posted. If you have a question about a grade or would like a score to be reviewed, please come by office hours so we can discuss in person.

Recitation (CS5003)

Every student in CS5001 must sign up for the labs, CS5003. Labs are intended to be completed within the scheduled time. If you finish early, stay and help others, or get a head start on the current homework.

Many labs will require you to work with a partner, usually assigned by instructors. We call this setup “pair programming.” Each pair will work at one computer, and each partner will contribute to the program. Jumping ahead while your partner watches quietly is NOT acceptable. Here’s how we split up the work:

- **Navigator:** Dictates the code to be written. Explains the why as we go. Checks for syntax errors.
- **Driver:** Writes the code. Listens closely to the navigator. Asks questions when lack of clarity.

Quizzes / Exams

Four quizzes will be given this semester. They will be administered during the first 15 minutes of class. You must be present to receive a grade for each quiz.

There are 5-7 questions per quiz. Your quiz grade will be scaled, though (for example, getting one question wrong on a 6-question quiz doesn't mean your quiz score is $5/6 = 83\%$). Quiz scaling will be applied as follows:

- Zero incorrect: Perfect
- One incorrect: Good

- Two incorrect: Satisfactory
- Three incorrect: Fair
- Three or four incorrect: Unsatisfactory
- More than four incorrect: Poor

There is one midterm exam, given about halfway through the semester, and one final exam. They will be administered during the lecture period. Exam scores will be out of 100 points.

Homework Sets

Homeworks are assigned (almost) every week. They are usually due 6 days after they are assigned, unless otherwise noted. Most homeworks will be evaluated according to the CS5001 Grading Rubric.

Everyone is granted two “late days.” Each entitles you to submit a homework up to 24 hours late with no penalty. You can use both your late days together on a single homework, or split them up between two different ones. A late day goes up to 24 hours and cannot be broken into smaller chunks.

You will submit your homework solutions via the Khoury HandIn server, which we will cover during the first week. The HandIn server automatically tracks your late days. These tokens apply only to homeworks, and not to the project, quizzes, or exams.

Your lowest homework grade will be dropped and will not count towards your overall course grade.

Project

There is one project towards the end of the semester. It will be more challenging and involve more code than the homework sets, but you will have a longer time to complete it. The project may not be submitted late, and it will not be dropped.

Technical Requirements

We'll be using Python 3 in this class. The rooms for our scheduled labs have desktops with Python 3 installed on them. You should also download Python 3 onto your own computer before the semester begins. We'll use IDLE, Python's own Integrated Development Environment (IDE). An IDE combines the Python interpreter with an editor for your code, which makes it easy to work on your code and test/run your software.

Download Python 3.8.1 from <https://www.python.org/downloads/>. It's available for Windows, Mac OSX, and Linux. Once installed, click on IDLE to open it up. You can use Python's interactive environment, or you can write and save a file with a .py extension.

You also must sign up for a Khoury account. Follow these instructions to register for one: bit.ly/ccisaccount

Communication

Computer Science is equal parts art and science. There is rarely a problem to solve for which only one

solution exists. Computer scientists develop good software by applying knowledge, educated guesses, trial-and-error, and collaboration. We have office hours for CS5001, but it is often just as helpful to talk over your approach with your classmates as it is to talk it over with a Teaching Assistant or Professor.

The quickest way to get feedback and help from your classmates is via Piazza. Piazza is an extension of our classroom discussion, and we expect everyone to behave accordingly. No disrespect, rudeness, or abuse will be tolerated -- towards fellow students or towards the course staff. Piazza will be disabled if we feel it is being misused.

You may not post your code on Piazza, but you can ask, answer, and discuss different things you've tried, what worked and didn't work, and resources you've found.

We'll also use Piazza to post course announcements, so make sure your email settings are turned on!

Email (laneys@northeastern.edu; k.bagley@northeastern.edu) is the best tool for specific questions or concerns about your experience in class or anything sensitive in nature. During the week, we'll respond within 24 hours, but don't expect a response after 9pm. On the weekends we'll be slower to respond, but if you reach out over a weekend you can expect to hear back by Sunday evening.

Office hours are the best place for talking through your approach to a homework problem. We're not here to give you answers, of course, but to be your fellow computer scientists thinking through a tough problem with you. Expect us to ask more questions than we answer.

Late/Makeup Policy

All assignments are expected to be completed and turned in on schedule. Due dates will be clearly indicated for each assignment.

There is no make-up mechanism for quizzes or exams. You must be present to receive a grade. If you must miss a quiz/exam due to extreme, unanticipated circumstances such as an illness or a family emergency, notify instructors via email before the event.

Attendance Policy

Lecture attendance is not required for lectures, but it is for labs, quizzes, and exams.

It is your responsibility to familiarize yourself with the course schedule to ensure that you do not have any conflicts with important dates. If you must miss a lab or exam, and if you feel that extraordinary circumstances warrant a makeup, get in touch with me before the scheduled date.

When you come to class, I ask that you be fully present. No phones are permitted in the classroom. If you use a laptop, use it **only to take notes**. Please be respectful of your fellow students and me by participating attentively and non-disruptively.

Academic Integrity

While students are encouraged to discuss course materials, no plagiarism/copying is allowed on homework. In particular:

- You may not copy anyone else's code under any circumstances.
- You may not permit any other student to see any part of your program, except when requesting assistance in debugging.
- You may not permit yourself to see any part of another student's program, except when rendering assistance in debugging.
- You may not post a public question to Piazza that contains any part of your code.

Student Accessibility

If you require support during the course due to a disability please ensure that you are already registered with the University's Disability Center, and contact your course instructors to coordinate any support needed during the course.

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: [Title IX](#).