

# CS65: Introduction to Computer Science

## Spring 2023

**Instructor: Md Alimoor Reza**

Assistant Professor of Computer Science  
Department of Mathematics and Computer Science  
Drake University  
Collier-Scripps Room#323

**Logistics:** Most of the course content lectures, assignments, labs, etc. will be hosted at <https://drake.blackboard.com>. Coursework will include attending the class and completing individual and collaborative programming assignments, labs, class activities, quizzes, and a final project.

**Office hours:** The instructor will hold weekly office hours, either in person or online via Zoom. Please see Blackboard for up-to-date times and URLs. If you cannot make it during office hours, contact the instructor to make a separate appointment.

- Time: Tuesday/Wednesday/Thursday 12:30 pm - 1:30 pm
- Location: Collier-Scripps#323

**Course overview:** This is an introductory course to the field of computer science. I will broadly overview logical thinking and problem-solving with a high-level programming language (Python). A crucial component in problem-solving is called "algorithm," which is step-by-step instructions to be executed by the machine. Besides algorithms, this course will also focus on other important concepts such as data structures, control structures, debugging, etc. As we will be using a high-level language (Python) to implement the learned concepts, here are some specific programming topics (tentatively and not necessarily in this order):

- Variables and expression
- Recursion
- Files
- Tuples
- Exceptions
- Functions
- Loops
- Lists
- Class
- Conditionals
- Strings
- Dictionaries
- Inheritance

**Learning outcome:** After successfully taking this course, you will be able to:

- Understand fundamentals of computer science.
- Think and devise a step-by-step process for problem-solving.
- Understand and implement algorithms with useful data structures using Python programming language.
- Refine programs by debugging and testing to ensure their desired outcome.

**Prerequisites:** This is an introductory course. Four years of high school mathematics or MATH 20. Logical thinking and basic familiarity with computers and their applications are helpful.

**Textbooks and materials:** There is no required textbook for this course. Optional readings will come from the followings:

- *Think Python 2nd Edition* by Allen B. Downey
  - free copy available online at <https://greenteapress.com/wp/think-python-2e>.
- *A Practical Introduction to Python Programming* by Brian Heinold
- *A Byte of Python* by Swaroop
- *Python for Everybody* by Charles Severance

## Grading and requirements:

- *Programming Assignments (25%)*. Homework programming activities.
- *Labs (20%)*. Implementations of specific concepts (relatively easier than homework assignments).
- *Content Quizzes (40%)*. 6 quizzes based on the lecture contents.
- *Final project (10%)*. Your proposed group project (2-3 members).
- *Attendance (5%)*. Counted based on your signature.

**Grading scale:** The tentative grading scale for this course would be as follows (subject to change upon Instructor's discretion):

- A (93%-100%)      • A- (90%-92.9%)      • B+ (87%-89.9%)
- B (84%-86.9%)      • B- (80%-83.9%)      • C+ (77%-79.9%)
- C (74%-76.9%)      • C- (70%-73.9%)      • D (60%-69.9%)
- F (0%-59.9%)

**Attendance policy:** Attendance is mandatory. Students are required to attend all weekly meetings *i.e.*, For section#1004 Tues & Thurs: 9:30 am-10:45 pm and *i.e.*, For section#1791 Tues & Thurs 11:00 am-12:15 pm at Collier-Scripps Hall 301. If you are unable to attend the class in person, please email the instructor.

**Deadline policy:** I believe it is important for students to keep up with all course material since the class moves quickly, and it is easy to get behind. Our policy on deadlines tries to balance these two competing considerations. If you can't meet the deadline for some valid reason, please get in touch with the Instructor.

**Technology requirements:** You will likely also want a Python and/or C++ development environment on your local computer. I recommend **Thonny Python IDE for beginners**<https://thonny.org>. There are many other free and commercial options; you can choose whichever you like. For example, see <https://wiki.python.org/moin/IntegratedDevelopmentEnvironments> for a list; popular choices include PyCharm (which is free for academic use), IDLE (a simple IDE that comes built-in to most Python distributions), and XCode (which is free but available only for Macs).

**Tutoring help:** This semester, the Math and Computer Science department is offering most tutoring services in-person at our lab located in the basement of **Cowles Library**. The department will also provide some online appointments for those who cannot make it to the campus and simply would benefit from online appointments. Tutors cover most introductory mathematics and computer science courses every day. You can find the full list of the available course schedules for in-person tutoring [on this spreadsheet](#).

**Academic Integrity Policy:** *We take academic integrity very seriously.* You are required to abide by the Drake University policy on academic integrity, as described in the Statement on Academic Dishonesty: Cheating and Plagiarism (<https://www.drake.edu/studentlife/handbook-resources/handbook/academic/>). It is your responsibility to understand these policies. Students agree that by taking this course, papers and source code submitted to us may be subject to textual similarity review, for example, by Turnitin.com. These submissions may be included as source documents in reference databases solely for the purpose of detecting plagiarism of such papers or codes.

**Accommodation for students with disabilities:** Drake University is committed to providing equitable access to learning opportunities for all students. The Disability Services office (107 Old Main) collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, autism spectrum disorders, chronic health, traumatic brain injury and concussions, vision, hearing, mobility, or speech impairments), please contact:

- Michelle Laughlin, Student Disability Services Coordinator (x1835)
- michelle.laughlin@drake.edu

to arrange a confidential discussion regarding equitable access and reasonable accommodations.

**Holiday Observance:** If you miss class because of a holiday or observance, you can fill out the form to automatically notify me (faculty). You can find the form on the <https://www.drake.edu/diversity/initiatives> for Initiatives and Programs, or click here to directly access the [https://drake.qualtrics.com/jfe/form/SV\\_d5qfVUKtuTQdg7b](https://drake.qualtrics.com/jfe/form/SV_d5qfVUKtuTQdg7b).