CS65: Introduction to Computer Science (Fall 2023)

Instructor: Md Alimoor Reza

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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 3:30 pm - 5:00 pm (tentative)
- 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., Tues & Thurs 2:00 pm-3:15 pm* at Harvey Ingham # 19. 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.

Policy on ChatGPT usage: You are tentatively permitted to use ChatGPT and other AI-based tools to assist with your learning, including in the development of code you submit for labs, assignments, and in solutions to exam questions, under the following conditions:

- You must not present AI-generated work as if it were your own.
- You must fill out and submit the AI-Assisted Learning Reflection before the assignment's due date.

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 on Sundays, Mondays, and Wednesdays from **6-9 pm**, **Cowles Library # 45** will become the CS and Math Tutoring Lab. The CS and Math Tutoring Lab provides students in CS 65 and other introductory courses an environment to work on HW, study, and get support from trained Drake CS and Math tutors. All you need to do is show up with your work and a student ID. No appointment is necessary!

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`.