CSc 110 - Introduction to Computer Programming I

University of Arizona, Fall 2022

Course Description

An introduction to programming with an emphasis on solving problems drawn from a variety of domains. Topics include basic control and data structures, problem solving strategies, and software development tools and techniques. Specifically, the Python programming language will be taught.

Location and Time

This course is scheduled to be an in-person course. There are multiple sections of the course with various meeting times. Your meeting time should be one of the following:

- Gittings Room 129b, 1:00-1:50pm, MWF
- Gittings Room 129b, 2:00-2:50pm, MWF

Take a look on UAccess for your designated section. Attendance is expected and required. If you need an exception due to a medical or visa issue, please reach out to the DRC or instructor.

Prerequisites

The prerequisite is a C or better in College Algebra or CSc 101 or appropriate math placement score.

Instructor & Teaching Staff

- **Instructors of Record:**
  - Benjamin Dicken
    - **Office:** Gould-Simpson 850 (note: some office hours may be online)
    - **Email:** bddicken@email.arizona.edu
    - **Instructor Site:** benjdd.com
  - Adriana Picoral
    - **Office:** Gould-Simpson 829
    - **Email:** adrianaps@arizona.edu
    - **Instructor Site:** adrianapicoral.com

There will also be many undergraduate TAs. See the class website for their contact info!

Course Format and Teaching Methods

The course will have three required meeting times per-week. The in-class experience will consist of a combination of lecture, programming demonstrations, and in-class activities. This course will use active learning, peer-teaching, and flipped-classroom teaching techniques.

By **active learning**, I mean that class time won't be just 50 minutes of me talking. Instead, class meetings will include a number of in-class activities (ICAs) for you to work on individually and/or in a group. Thus, you can spend some time "actively" learn, rather than "passively" listen to the instructor.

By **peer-teaching**, I mean that you will have opportunities to learn from your classmates, and vice-versa. In many of the in-class activities, you will be able to work on groups and help each-other when necessary.

By **flipped-classroom**, I mean that you will often be assigned reading or other material to complete *before* attending each class meeting time. By doing this, you will come to class with (at least some) preparation. This will hopefully result in more class time allocated towards active learning!

Course Objectives

By the end of the semester, you should be able to write complete, well-structured programs in python.

Learning Outcomes

This successful CSc 110 student will be able to:

- When provided a specification, students will be able to use variables, control structures, basic data types, lists, dictionaries, file I/O, and functions to write correct 100 - 200 line programs.
- Given a programming task, students will be able to decompose a problem into an appropriate set of functions, loops, conditionals, and/or other control flow.
- Provided with a list of assertions about code that contains loops and conditionals, students will be able to state whether these are true, false or sometimes true.
- Given a program that isn't working properly, students will be able to find bugs using print statements and computational thinking skills, and will be able to understand and resolve errors.
- Students will be able to follow a provided style guide to write clean, well-structured, and readable code.
- Students should be able to explain the conceptual memory model underlying the data types covered in class, and demonstrate the ability to convert integers and text to and from binary.

(These learning outcomes are derived from ones developed by Allison Obourn and other faculty at the UA).

Coursework and Grading Policies

The breakdown of grades in this course is as follows:

- 60% exams
- 25% programming assignments (PAs)
- 10% attendance
- 5% prep problems

For every day of live class (MWF), there will typically be three things to complete beforehand, or on the same day as the class:

- The required reading from the book (you can find what you are supposed to read on the course schedule)
- A prep problem (a short programming activity, can also find on course schedule)
- Attend class

You can find the readings/prep problems that are required for each class day. You should complete the readings either before the corresponding class day, or on that day. These readings can help reinforce the concepts you are learning in the class.

Generally, the prep problems will be based on recently covered or new topics in the class. In total these will contribute to 5% of the student grade. The general flow for any given class day (MWF) should be like so:

Attendance at class with be worth 10% or your grade. During class, there may be attendance questions at various times throughout class. Answering these attendance questions correctly contributes towards this 10%.

There will be a number of programming assignments throughout the class, which will contribute to 25% percent of the student's grade. These assignments should be treated as individual-work projects, unless otherwise specified by the instructor.

There will be four exams throughout the course (including the final), for a total of 60%. These exams may cover material from class, the programming assignments, the final project, and the readings.

Each exam will be worth 15% of your grade. The first three exams will have two components each: a group component and an individual component. The group component with be worth 4% of the exam and the individual component will be worth 11% of the exam. Your lowest individual exam grade will be dropped. Thus, each of the two non-dropped individual exams will end up being worth 33% of the grade. If you arrive at class more than 10 minutes late for a group exam, the instructor reserves the right to not let you participate, deduct your grade, or give you a zero. If you would like an exam regraded, we reserve the right to regrade the entire exam, not only the parts you might question.

The final exam is worth 15%, and does not have a group component.

The instructor and teaching staff will do their best to have grades back to students within 1 week. This includes, but is not limited to, grades for exams, projects, programming assignments, attendance, and quizzes. Once a grade has been entered for a particular item on the digital grade-book, students have at most 5 days to dispute the grade. This includes disputes related to excuses such as sickness, personal matters, dean's excuses, etc. If 5 days pass and there has not been such a request, the grade is final.

The correspondence between percentage grade and numeric grade is as follows:

- Greater than 90% at least an A
- Greater than 80% at least a B
- Greater than 70% at least a C
- Greater than 60% at least a D
- Anything less, at least an E / F

Groups

There will be approximately 3-4 weeks of class between each of the exams. During each of these time spans, I will break the class up into groups of 3-4 students. Thus, in total, you will be in 4 different student groups throughout the course. I highly encourage that you get-to-know all of your fellow students in each of your groups. Not only is it a good way to meet new people, but there are several additional motivations:

- Each group will sit at a table together, and will be able to collaborate on in-class activities.
- The first three exams will have a group component. This group component will be taken in the same group that you were in leading up-to the exam.

Late Days

In this class, you are given 3 late days for programming assignments. What this means is that you are allowed to submit up to three programming assignments within 24 hours after the due date throughout the semester, without penalty. you may not use these for short PAs, these are for Regular PAs. You should not burn through all of these free late days on the first three assignments though! Consider saving some for later in the course, when you might be in dire need :).

Final Exam

The final exam will be on:

- For the 1pm course: Monday, December 12th 1-3pm
- For the 2pm course: Friday, December 9th 1-3pm

You keep this time available. Do not schedule any flights, travel plans, or other conflicts with these exams. See also Final Exam Regulations, https://www.registrar.arizona.edu/courses/final-examination-regulations-and-information, and Final Exam Schedule, http://www.registrar.arizona.edu/schedules/finals.htm

Textbook

There is one required textbook for this course: **Starting out with Python (4th).** The ISBN-13 number is **978-0134444321**.

This book is rather pricey on Amazon (around $100). See for yourself: https://www.amazon.com/dp/0134444329/

However, there is good news. Via the inclusive access program at the UofA, you can get a digital copy of this textbook for less-than $30. This should automatically be charged to your bursars account, and you should have access to the text through D2L from day-1 of the course. If you would rather have a hard-copy, there is an option to upgrade (for a fee) so that you can have the digital book and a loose-leaf copy. You can also just purchase on Amazon.

Please access the material through D2L the first day of classes to make sure there are no issues in the delivery, and if you are having a problem or question, it can be addressed quickly. You must take action (even if you have not accessed the materials) to opt-out if you do not wish to pay for the materials, and choose to source the content independently. If you would like to opt-out, contact the uofa bookstore as soon as you can so that you do not miss the deadline. Preferably, within the first week of class. If you do not opt-out and choose to retain your access, the cost of the digital course materials will appear on your October Bursars account. Please refer to the Inclusive Access FAQs at https://shop.arizona.edu/textbooks/Inclusive.asp for additional information.

Equipment and Software

For this class you will need daily access to a computer running Windows, MacOS, or Linux. You will also need regular access to reliable internet signal.

This class is an introduction to programming, specifically programming in **Python**. Specifically, we will be using Python 3.5 or greater. You can download it here: https://www.python.org/downloads/. We will be using the PyCharm to write Python code in.

If you have a personal computer, you should download and install Python and PyCharm on your machine.

Video Recordings

In this course, I may provide some video content. Students may not modify content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UA policies are subject to suspension or civil action.

Office Hours and Online Help

Likely, some (or many) of you will find this course challenging. The instructor and teaching staff provide a number of opportunities to receive help when you are stuck.

The instructor and the TAs will try to provide office hour opportunities for you to get help. Check the class website for the details about when and how to go to an office hour and get help!

If you are unable to use office hours, you can also get help online via Discord. However, you may *not* publicly post any of your code or solutions to problems. If you are making a public post (visible to the entire class) make sure you do not include this. If you would like to include this, post to the instructors only.

If you are ever stuck, ask for help!

Cheating

Unless otherwise specified, you may not work in groups on any coursework. This includes quizzes, exams, programming drills, programming assignments, etc. You may not share code, copy/paste code, re-use code from solutions found online, look at each-others code, etc.

If cheating is detected on your work, penalties may include (but are not limited to):

- Receiving a grade of 0 on the programming assignment
- Being reported to the University
- Additional grade penalties
- Being dropped from the course (in extreme cheating situations)

Course Schedule

See the schedule page on the class website for the topic and reading schedule.

Department of Computer Science Code of Conduct

The Department of Computer Science is committed to providing and maintaining a supportive educational environment for all. Disruptive behaviors (such as physical or emotional harassment, dismissive attitudes, and abuse of department resources) will not be tolerated. The complete Code of Conduct is available on our department web site. We expect that you will adhere to this code, as well as the UA Student Code of Conduct, while you are a member of this class.

Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a welcoming environment where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.). Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students.

Accessibility and Accommodations

At the University of Arizona we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520-621-3268) to explore reasonable accommodation. Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

Code of Academic Integrity

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity.

The University Libraries have some excellent tips for avoiding plagiarism, available at http://www.library.arizona.edu/help/tutorials/plagiarism/index.html.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent.

Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

UA Nondiscrimination and Anti-harassment Policy

The University of Arizona is committed to creating and maintaining an environment free of discrimination. In support of this commitment, the University prohibits discrimination, including harassment and retaliation, based on a protected classification, including race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information. For more information, including how to report a concern, please see http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

Additional Resources for Students

UA Academic policies and procedures are available at http://catalog.arizona.edu/policies. Student Assistance and Advocacy information is available at http://deanofstudents.arizona.edu/student-assistance/students/student-assistance.

Illnesses and Emergencies

- If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing up to one week of course meetings and/or assignment deadlines.
- If you must miss the equivalent of more than one week of class and have an emergency, the Dean of Students is the proper office to contact (DOS-deanofstudents@email.arizona.edu). The Dean of Students considers the following as qualified emergencies: the birth of a child, mental health hospitalization, domestic

violence matter, house fire, hospitalization for physical health (concussion/emergency surgery/coma/COVID-19 complications/ICU), death of immediate family, Title IX matters, etc.

- Please understand that there is no guarantee of an extension when you are absent from class and/or miss a deadline.

Course Communications

The means of communication for this course will be either in-class, office hours, or via Discord.

Obtaining Help

- Academic advising: If you have questions about your academic progress this semester, or your chosen degree program, consider contacting your department's academic advisor(s). Your academic advisor and the Advising Resource Center can guide you toward university resources to help you succeed. Computer Science major students are encouraged to email advising@cs.arizona.edu for academic advising related questions.
- CS Tutor Center: The Department of Computer Science offers FREE tutoring for students enrolled in CSC courses. You can view tutor schedules and sign up for tutoring sessions by visit our CS Tutoring Page.
- Life challenges: If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.
- Physical and mental-health challenges: If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.
- CS Help Desk: The Computer Science IT team can help students with department technology issues including logging into/resetting your Lectura account, printing in the 930 lab, etc. You can submit a ticket for help by visiting the Computer Science Lab Helpdesk (note, requires UA login).

Incomplete (I) or Withdrawal (W):

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete and http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal respectively.

Absence and Class Participation Policy

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable: http://policy.arizona.edu/human-resources/religious-accommodation-policy.

Absences pre-approved by the UA Dean of Students (or dean's designee) will be honored. See https://deanofstudents.arizona.edu/absences

COVID-19

As we enter the semester, our health and safety remain the university's highest priority. To protect the health of everyone in this class, students are required to follow the university guidelines on COVID-19 mitigation. Please visit www.covid19.arizona.edu.

Makeup Policy for Students Who Register Late

Students who register after school has already begun are not guaranteed to be given the opportunity to make up late work.

Subject to Change Statement

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.