# CSC 120: Introduction to Computer Programming II

**MWF 3:00pm-3:50pm**
**Gittings 129B**
**SYLLABUS: Spring 2025**

## Course Description

This course provides a continuing introduction to programming with an emphasis on problem solving. It considers problems drawn from a variety of domains (including Computer Science) and emphasizes both the broader applicability of the relevant data structures and programming concepts, as well as the implementation of those structures and concepts in software. Topics include arrays, lists, stacks, queues, trees, searching and sorting, exceptions, classes and objects; asymptotic complexity; testing, and debugging.

## Instructor and Contact Information

**Name**: Janalee O'Bagy, Ph.D.
**Email**: jobagy@arizona.edu
**Office**: Gould-Simpson 823
**Office Hours**: Office hours are posted on the class website.

**Teaching Assistants**: The contact information and office hours for the class TAs can be found on the class website.
**Websites**:
D2L: https://d2l.arizona.edu/d2l/loginh
Class website: https://obagy.com/cs120/
Discord: TBD
Required out-of-class videos: Access through D2L, then use the Content tab

## Course Format and Teaching Methods

### In-class Activities (ICAs)

During the class period, we will have a mix of traditional lecture and in-class activities, typically done in groups, that reinforce the understanding of the material being presented. The in-class activities will help the students to understand the class material by solving related problems. The students will be able to collaborate with neighboring students. The TAs and the instructor will help the students complete the ICA problems, which clarify the concepts presented in lecture and provide foundational information for the upcoming programming assignments. Working on the ICA problems during lecture, with the guidance of the instructor and TAs, is crucial to building the understanding necessary to complete the programming assignments that are done outside of class. Students will submit their solutions for the ICAs after each class period in order to receive credit for participating in the lecture. We will use Gradescope for this.

### Out-of-Class activities (OCAs)

In addition, each week there will be a short video containing additional information

and short quizzes. Students will access the videos through D2L (use the “Content” tab).

**Lab Session (Labs)**
Each student must attend a weekly 60-minute lab session that gives students the opportunity to practice additional problems in a smaller group setting of approximately 20 to 30 students. Guidance will be provided by the TAs. Note that the lab sessions are required and are in-person in GS 930 and GS 228.

## Course Objectives

The course will provide a foundation in fundamental computer science concepts such as object-oriented programming, data structures and abstract data types, asymptotic worst-case complexity, program design, testing, and debugging.

## Expected Learning Outcomes

Students who successfully complete this course should be able to:

- effectively decompose simple programming problems into suitable functions;
- comfortably write moderate-sized (100–300 line) programs incorporating a variety of control and data structures;
- implement common data structures such as stacks, queues, linked-lists and trees and use recursive solutions when appropriate;
- implement classes given design guidance;
- use a provided style guide to produce clean, readable code;
- identify and create black box and white box tests and to use assertions in order to facilitate the testing and debugging of their programs;
- determine the time complexity of simple algorithms and state their complexity in terms of big-O notation.

## Absence and Class Participation Policy

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

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

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

Participating in the course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures. Absences may affect a student’s final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact me as soon as possible.

**We will not take attendance during lecture, however, all students are required to submit the in-class activity (ICA) solutions.** These solutions, which should include the Word of the Day, will demonstrate their engagement with the material. (While the ICAs will be available online, students who submit the ICA without the Word of the Day will only receive half credit.)

**Note**: ICAs are weighted at 4% of the student's overall grade (see the **Grading Scale and Policies** section below). However, since there will be at least 40 ICAs throughout the semester, missing two or three ICAs will have very little impact on a student's grade. This allows a student to miss a few classes due to life circumstances without having to be concerned about those absences negatively impacting their grade.

**Note**: attendance is required for exams, unless the student has a disability-related accommodation (see below).

**Administrative Drops**:
Every semester, students enroll in introductory CS classes but do not submit any work, resulting in a grade of 'E' at the end of the term. To prevent this, after the end of the second week, I will be administratively dropping all students who have not submitted the first programming assignment, consisting of *both* the short and long problems (both long problems), prior to the no-W drop date (1/28/2025).

In addition, to ensure your success in this course and that you are on top of the work that is due every week, administrative drops will be in place through the semester until April 1 (this is the last day an instructor may administratively drop a student). Students who miss coursework for two weeks or more often get an E at the end of the term in this course. After the second week of class, and at any point during the semester if you fail to attend class and submit assignments for two consecutive weeks (until April 1), you will be administratively dropped.

To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu. If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

**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 (DOSdeanofstudents@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.

### Makeup Policy for Students Who Register Late

Students who register for class late will be allowed to make up missed assignments; all missed assignments will be due at the same time as the second long assignment. Students will not be allowed to register for the class more than two weeks after it begins (1/29/25).

## Course Communications

The primary path for outside-lecture communications will be the class Discord server. The Discord link will be posted on D2L and the class website. Students are required to follow the announcements channel in the Discord server in order to be aware of any information announced that is relevant to all of the class. If a student has an issue that cannot reasonably be resolved through Discord (inappropriate to discuss publicly, private issue, etc.) then the student may email the instructor. Please in include CSC 120 in the subject line.

### Required Texts or Readings

There are no required textbooks. Students are responsible for the material provided in the lecture slides, which are posted on the class website before the lectures.

### Assignments and Examinations: Schedule/Due Dates

#### I. Programming Assignments

This class will have regular programming assignments.

Assignments will generally be given on Mondays and will consist of two components: (1) a set of short problems due on Thursday, and (2), a set of one or more larger problems due the following Tuesday.

Assignments will be due by 7pm.

NOTE: The first two weeks of class have a different assignment due-date schedule.

Each assignment pair (short/long assignment) will be worth the same amount.

**Re-Do Opportunity**

No assignments are dropped, however, during the last week of the class, students will be given the opportunity to rewrite one of the long assignments and have it regraded.

**Late Day**

Each student will be allocated 1 Late Day which may be used throughout the semester. A late day allows the student to turn in an assignment's long problem set up to 24 hours late. The student must notify their TA via email that they are using a Late Day.

**NOTE**: A late day cannot be used on the short problems or on the last (re-do) assignment. If a student has used their late day, a late submission on a later assignment will not be accepted. The student will receive a 0 on that assignment.

**NOTE: All short and long programs must be done and submitted individually. You may not collaborate with other students on programming assignments or submit work from other sources such as ChatGPT (or any AI), stack overflow, GitHub, etc.**

## II. Activities

### In-class Activities (ICAs)

During lecture, we will have a mix of traditional lecture and in-class activities, typically done in groups, that reinforce the understanding of the material being presented. Students will submit their solutions for the activities to receive credit for participating in the lecture. We will use Gradescope for this. The ICAs must be submitted to Gradescope by 11pm on the day of the lecture. You may work and collaborate on ICAs with your table mates. You may discuss problems and work on solutions together.

### Out-of-Class Activities (OCAs)

In addition, each week there will be one or two short videos with embedded quizzes. Students will access the videos through D2L (Choose the “Content” tab). The OCAs for any given week are due the Saturday ending the week at 11:00pm.

### Lab Sessions (Labs)

Each student must attend a weekly 60-minute lab session that gives students the opportunity to practice additional problems in a smaller group setting of approximately 20 to 30 students. Guidance will be provided by the TAs. Note that the lab sessions are required and are in-person. There are no labs during the midterm exam weeks.

## III. Midterms

There will be two midterms given on the following dates:

Midterm 1: Friday, February 28 , 2025

Midterm 2: Friday, April 11, 2025

Midterms are given during the normal class period and will be 50 minutes.

**Note**: Make-up midterm exams will not be given. At the end of the semester, I will replace your lowest midterm exam score with a percentage-equivalent copy of your final exam score, but only if the final score is higher than at least one of your midterm scores. (Thus, this is a potential bonus but never a penalty.) I do this for two reasons: 1) to reward you for demonstrating an improved mastery of the material over the course of the semester, and 2) to allow for unforeseen circumstances that would cause you to miss a midterm exam.

Please note that should you miss both midterms under sub-extreme circumstances, you will definitely get a zero for the additional missed midterm.

### IV. Regrades

For the long portion of programming assignments, students should contact their TA to ask for a regrade. For tests, students should use Gradescope's "Regrade Request" feature to ask the grader responsible for the question. In both cases, students should attempt to resolve the issue with that contact person, but they can escalate to the instructor if an acceptable solution cannot be reached.

## Final Examination

The final exam date and time is given below:

Friday, May 9, 2025, from 6:00pm-8:00pm.

**NOTE:** The final exam will be a common exam with the other section of CSC 120, given at the same time and in the same room. We will not receive notice of the room assigned until a later date.

Final Exam Regulations and Final Exam Schedule:
https://registrar.arizona.edu/faculty-staff-resources/room-course-scheduling/schedule-classes/final-exams/final-exams-fall-2025
(**NOTE:** Since we are having a common final, be sure to look at the common final schedule.)

## Grading Scale and Policies

### Point Distribution

Grades will be computed using the following weighting for the graded components of the class:

| | |
|---|---|
| 30% | Weekly programming |
| 4% | In-class activities (ICAs) |
| 3% | Out-of-class activities (OCAs) |
| 3% | Labs |
| 40% | Midterms (20% each) |
| 20% | Final |

### Grading Scale

The weighted score computed using the above distribution will translate to letter grades as follows:

| | |
|---|---|
| 90% and above: | A |
| 80% and above, but below 90%: | B |
| 70% and above, but below 80%: | C |
| 60% and above, but below 70%: | D |
| Below 60%: | E |

I will use a simple grade cutoff scheme. This means if you earn the number of points listed for a given grade, you are guaranteed that grade. At the end of the semester, I reserve the

right to lower these cutoffs, but I will not raise these cutoffs. (This means I can make it easier to earn the letter grades in the categories above, but not harder.)

**Grading Schedule**
Programming assignments will typically be graded within 6 days of the due date. If exceptions have to be made occasionally, staff will inform the students about the delay and the reason for it. Tests will be graded within 10 days.

**Late Work**
Students have 1 Late Day that can be used on any long programming problem except the last long programming assignment.

**Regrades**
Regrades must be requested within 7 dates of the grade being returned to the student. For everything except tests, students should contact their TA to ask for a regrade. For tests, they should use the Regrade Request tool inside GradeScope. In either case, the student should start by contacting the appropriate person. Afterwards, they are free to contact the instructor if a resolution cannot be found.

**Extra Credit**
Extra credit will not be available.

**Incomplete (I) or Withdrawal (W):**
Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at
https://catalog.arizona.edu/policy/courses-credit/grading/grading-system

**Dispute of Grade Policy:** Please see the regrade policies outlined above.

## Honors Credit

This course will not be available for Honors Credit this semester.

## Scheduled Topics/Activities

Below is a tentative schedule for the semester**. NOTE: The dates may change based on instructor discretion.**

| Week no. | Week of | Topic/Lecture Slides | Assigned | Assignment Due Dates & Midterm Dates |
|---|---|---|---|---|
| 1 | 01/13/2025 | Class intro, Python review | PA 1 – 01/17 | |
| 2 | 01/20/2025 | Python review<br>**1/20 MLK (no classes)** | | PA 1 short – 01/23 |
| 3 | 01/27/2025 | Python review, References, | PA 2 – 01/27 | PA 1 long – 01/27<br>PA 2 short – 01/30 |
| 4 | 02/03/2025 | Classes and Objects | PA 3 – 02/03 | PA 2 long – 02/04<br>PA 3 short – 02/06 |
| 5 | 02/10/2025 | Linked lists | PA 4 – 02/10 | PA 3 long – 02/11<br>PA 4 short – 02/13 |
| 6 | 02/17/2025 | Linked lists | PA 5 – 02/17 | PA 4 long – 02/18<br>PA 5 short – 02/20 |
| 7 | 02/24/2025 | Stacks & Queues | | **Midterm 1 – 02/28** |
| 8 | 03/03/2025 | Recursion | PA 6 – 03/03 | PA 5 long – 03/04<br>PA 6 short – 03/06 |
| | 03/10/25 | Spring Break | | |
| 9 | 03/17/2025 | Recursion and Trees | PA 7 – 03/17 | PA 6 long – 03/18<br>PA 7 short – 03/20 |
| 10 | 03/24/2025 | Trees, Binary Search Trees | PA 8 – 03/24 | PA 7 long – 03/25<br>PA 8 short – 03/27 |
| 11 | 03/31/2025 | Trees, Testing | PA 9 – 03/31 | PA 8 long – 04/01<br>PA 9 short – 04/03 |
| 12 | 04/07/2025 | Complexity | | **Midterm 2 – 04/11** |
| 13 | 04/25/2025 | Complexity | PA 10 – 04/14 | PA 9 long – 04/15<br>PA 10 short – 04/17 |
| 14 | 04/21/2025 | Hash tables | PA 11 – 04/21 | PA 10 long – 04/22<br>PA 11 short -04/24 |
| 15 | 04/28/2025 | Hash tables, Debugging | PA 12 – 04/28 (redo opp) | PA 11 long – 04/29 |
| 16 | 05/05/2025 | Advanced topics; review | | PA 12 long – 05/05 (redo opp) |

## Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and 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.

### Code of Academic Integrity

All short and long programs must be done and submitted individually. You may not collaborate with other students on programming assignments or submit work from other sources such as ChatGPT (or any AI), stack overflow, GitHub, etc. Failure to abide by this policy may result in no credit for any assignment or exam that was not completed individually. Review the materials at this link for the university-wide academic integrity policy: https://deanofstudents.arizona.edu/policies/code-academic-integrity

### Safety on Campus and in the Classroom

For a list of emergency procedures for all types of incidents, please visit the website of the Critical Incident Response Team (CIRT): https://cirt.arizona.edu/case-emergency/overview

Also watch the video available at https://arizona.sabacloud.com/Saba/Web_spf/NA7P1PRD161/app/me/ledetail;spf-url=common%2Flearningeventdetail%2Fcrtfy000000000003841

### University-wide Policies link

Links to the following UA policies are provided here: https://catalog.arizona.edu/syllabus-policies

- Absence and Class Participation Policies
- Threatening Behavior Policy
- Accessibility and Accommodations Policy
- Code of Academic Integrity
- Nondiscrimination and Anti-Harassment Policy

### Department-wide Syllabus Policies and Resources link

Links to the following departmental syllabus policies and resources are provided here https://www.cs.arizona.edu/cs-course-syllabus-policies-and-resources:

- Department Code of Conduct
- Class Recordings
- Illnesses and Emergencies
- Obtaining Help
- Preferred Names and Pronouns
- Confidentiality of Student Records
- Additional Resources
- Land Acknowledgement Statement

### 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.