CSE 340 Programming Languages

Fall 2021

1 Staff and Logistics

1.1 Teaching and Support Staff

Instructor: Rida A. Bazzi

E-mail:	bazzi@asu.edu
Phone:	480 965-2796
Office:	BY 430
Office Hours:	see google sheet table with full schedule. TBD first day of class.

I encourage you to come to my office hours to ask any questions you have about the class material or other general questions. **To make the best use of my time and your time, I expect you to come prepared**. If your question is about course material, I expect that you have read carefully the relevant parts from the book/notes. If your question is about problems, I expect that you have made a serious effort to solve the problem. I also encourage you to take advantage of the many graduate TAs office hours and the undergraduate TAs lab hours.

Graduate Assistants

1. Arda Sarp Yenicesu (GSA): ayenices@asu.edu
2. Karan Barhanpur (TA): kbarhanp@asu.edu
3. Zhangsihao Yang (TA): zyang195@asu.edu

Undergraduate Assistants

1. Jacob Abraham: jrabraha@asu.edu
2. Andrew Bauer: abauer7@asu.edu
3. Christopher Feger: cfeger@asu.edu
4. Emilia Ferreyra: eferreyr@asu.edu

5. Alex Lee: galee6@asu.edu
6. Jason Manuel: jamanue1@asu.edu
7. Natalie Moes: nkmoes@asu.edu

1.2 Communication

All email communication with me or the TAs must have a subject field in the following format:

```
CSE340F21  actual subject of the message
```

For example, if you have a question about attendance, your email subject can be

```
CSE340F21  Question about attendance
```

You should **always write your name** on all material you submit including email (some of you have non-ASU email accounts that do not include your name). Also, writing proper emails with greetings and signature is something you should practice.

2 Course Information

2.1 Catalogue Description

Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms. **Prerequisites**: Computer Systems Engineer BSE or Computer Science BS major; CSE 310 with C or better; CSE 230 or EEE 230 with C or better OR CSE graduate student

2.2 Textbook

Author: Kenneth C. Louden and Kenneth A. Lambert
Title: Programming Languages: Principles and Practice, 3rd edition. Second edition can also be used and is much cheaper. **Textbook is not required.**
ISBN: 9781111529413

2.3 List of Topics

1. Syntax Analysis
2. Lambda Calculus
3. Basic Semantics
4. Type Systems
5. Abstract Data Types and Modules
6. Expressions and Statements
7. Procedures and the Runtime Environment

2.4 Objectives and Learning Outcomes (ABET Syllabus)

To provide students with an understanding of the principles underlying the design and implementation of programming languages

- Students can understand the basics of recursive descent parsing.
- Students can describe program execution using box and circle diagrams.
- Students can understand static scoping
- Students can understand parameter-passing mechanisms and their implementation.
- Students can understand the advantage of object-oriented design and behavior.
- Students can think functionally when creating functional programs.
- Students can think declaratively when creating declarative programs

3 Assignments, Workload and Grading

3.1 Homework

There will be 5 graded homework assignments during the semester worth 12.5% of the total course grade. Each homework assignment is worth 2.5% of the total grade.

No late submissions are accepted for homework.

3.2 Problem Sets

In addition to the homework, I will be distributing old homework and problems with solutions (problem sets) as well as old exams, some solved and some without solutions. I expect that you will be working on these problems to solve them and that you will ask for help if you have any difficulty, but these old homework assignments, exams and problem sets are not graded. Working on the problems is important as a preparation for the exams. Even though I will be providing solutions for old homework and problem sets, you should look at the solution only after you have solved the problems or made a serious effort to solve the problems. Your performance on the exams will be negatively affected if you do not have sufficient practice with the material. The homework assignments by themselves will only give you minimum practice. Remember that one cannot learn the material by simply reading solutions; one should actively work on solving problems.

I and the TAs will be more than happy to answer questions about problem sets.

3.3 Programming Assignments

There are 4 programming assignments. All of the assignments are demanding and require a lot of time. Unlike previous classes, in this class, reading and understanding the requirements requires significant effort. In the past, students spent anywhere from 25 to 40 hours or more per programming assignment. You cannot afford starting late on any programming assignment.

Late Submission for Programming Assignments There is a 10% penalty per day for late submission for programming assignments, up to a maximum of three days. The number of days is rounded up to the nearest integer. No submissions are accepted after 3 days from the due date.

If you have a documented medical or family emergency *of a duration that can affect your ability to finish an assignment*, I will consider giving an extension or a makeup assignment. If you are not able to finish a project on time because of unexpected emergency a day or two before the due date, you should not expect an extension.

3.4 Workload

This is a demanding class and requires consistent effort on your part:

1. You will be reading and interpreting long specification documents for the projects and you will be designing solutions to satisfy the specifications. This is different from what most of you have been exposed to so far.

2. You will be writing thousands of lines of code in this class and you will have to read a lot of code that I or the TAs wrote. This is different from what most of you have been exposed to so far.

3. You will have to handle non-trivial abstract concepts, new programming paradigms and complex implementation issues. This requires consistent effort on your part.

If you put the effort, you will learn a lot and succeed in this class. It is really worth it. If you do not put the effort, you cannot succeed in this class.

3.5 Grading

- 2 Exams: 30% (15% each)
- 5 homework assignments: 12.5% (2.5% each)
- 4 Programming assignments: 40% total (10% each)
- 1 **Comprehensive** final exam: 17.5%

The thresholds for assigning letter grades are the following: A: 93, A-: 89, B+: 86, B: 82, B-: 78, C+: 74, C: 70. For A+ , I will not use a simple threshold. I will look at the totality of your work not including bonus points for attendance. If circumstances warrant it, I will adjust these thresholds slightly, but you should not rely on that.

Regrade Requests: All regrade requests should be done no later than one week from the date the grade is released. If you have any homework grading issue, you should submit a regrade request on GradeScope. You can follow up by email if the issue is not addressed within one week of the request. If you have exam grading issue, you should come to office hours to discuss it.

4 Important Dates

The following are the fixed dates for exams and tentative dates for homework assignments and projects. The exam dates are fixed and will not change and you should plan your schedule accordingly. If an exam date conflicts with a religious holiday (in accordance with ACD - 304-04) or other university sanctioned activities (in accordance with ACD - 304-02) you should let me know at least one week before the exam in order to schedule a makeup exam. Absence for an exam due to medical reasons should be properly documented by a physician.

5 Attendance and Classroom Behavior

5.1 Lecture Attendance

Attendance and class participation is optional but those who do not attend regularly typically do not do well in the course. **You are responsible for everything covered in class.** I will be making recording of lectures available on canvas to help in reviewing the course material, but that is not really a substitute for attending the class.

Monday	Wednesday	Friday
August 23	August 25 HW 0 Due	August 27
August 30	Sept 1	Sept 3
Sept 6	Sept 8	Sept 10
Sept 13	Sept 15 HW 1	Sept 17
Sept 20	Sept 22	Sept 24 Project 1 Due
Sept 27	Sept 29	Oct 1 HW 2
Oct 4 Exam 1	Oct 6	Oct 8
Oct 11 Fall Break	Oct 13	Oct 15 Project 2 Due
Oct 18	Oct 20	Oct 22 HW3
Oct 25	Oct 27	Oct 29
Nov 1	Nov 3	Nov 5 Project 3 Due
Nov 8	Nov 10	Nov 12 HW4
Nov 15 Exam 2	Nov 17	Nov 19
Nov 22	Nov 24	Nov 26 Project 4 Due
Nov 29 HW5	Dec 1 LAST DAY!	Dec 3
Dec 6 Final Exam 2:30-4:20 PM (1:30 pm section)	Dec 8 Final Exam 12:10-2:00 PM (12:00 noon section)	

5.2 Recitation Sessions Attendance

Recitation session attendance is optional but there is a 0.25% bonus for every recitation session you attend up to a total of 2.25%. To get the maximum bonus points, you need to attend 9 out of the 15 weeks in the semester. This can make the difference between two letter grades. Regardless of the bonus points, recitations are very useful for learning the course material.

5.3 Cell phone and recording devices usage

I expect you to set your cell phone to silent/vibrate mode while in class. No recording of the lecture is allowed.

5.4 Classroom Behavior

You should be familiar with ASU's Student Service manual, especially (SSM 104-02).

Faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services. Interfering with the peaceful conduct of university-related business or activities or remaining on campus grounds after a request to leave may be considered a crime. All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

6 Special Accommodations

Suitable accommodations are made for students having disabilities. Students needing accommodations must register with the *ASU Disabilities Resource Center* (SAILS) and provide documentation of that registration to the instructor (SAILS typically directly contact the instructor about students who have accommodations. You should check with the instructor to make sure that he has been properly notified). Students should communicate the need for an accommodation in enough time for it to be properly arranged. See ACD 304-08. Classroom and Testing Accommodations for Students with Disabilities.

7 Sexual Discrimination

Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests.

ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at https://sexualviolenceprevention.asu.edu/faqs.

As an employee of the University I am considered a mandated reporter and therefore obligated to report any information regarding alleged acts of sexual discrimination that I am informed of or have a reasonable basis to believe occurred.

ASU Counseling Services, https://eoss.asu.edu/counseling, is available if you wish discuss any concerns confidentially and privately.

8 Academic Integrity

Students in this class must adhere to ASU's academic integrity policy, which can be found at https://provost.asu.edu/academic-integrity/policy) and Fulton's policies which can be found at https://engineering.asu.edu/integrity/. Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. In addition, all engineering students are expected to adhere to both the ASU Academic IntegrityHonor Code and the Fulton Schools of EngineeringHonor Code. All academic integrity violations will be reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). The AIO maintains record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

- The highest standards of academic integrity are expected of all students.
- **ZERO TOLERANCE: ANY VIOLATION of academic integrity policy on an assessment (homework, exam, programming assignment) WILL RESULT IN A GRADE of zero on the assessment and a full letter grade reduction in the class and reporting the violation to the Dean's office**
- Violations of academic integrity include, but are no limited to, copying, cheating, fabrication, tampering, plagiarism, or facilitating such activities.
- Under no circumstances you should share solutions or partial solutions to the programming assignments, whether you do so directly or indirectly. Providing code and receiving code are violations of the academic integrity policy. You are responsible for protecting your code and making sure that no one gets a copy of your code. You should protect accounts and computers that contain your code and make sure no one access them whether with your knowledge or not.
- If you have difficulty with your code, you should not show your code to anyone other than the instructor or TAs for help with your code.
- **Under no circumstances you should post any code you develop for this class in a publicly available online repository (including but no limited to GitHub for example). Posting solutions on public repositories will result in a grade of E in the course, not just a zero on the assignment and a letter grade reduction in the course.**
- Tools for detecting plagiarism will be used in the enforcement of the academic integrity policy.
- **If you are not sure if something is allowed or not allowed, you should ask me**.

You should sign the following and submit the signed form on GradeScope. No assignment or exam will be graded if you do not submit the form.

I acknowledge that I have read the academic integrity policy and I will abide by it.

Name _____ **Date** _____

Signature _____

9 Copyright

Course content, including lectures, are copyrighted materials and students may not share outside the class, upload to online websites not approved by the instructor, sell, or distribute course content or notes taken during the conduct of the course (see ACD 304-06, "Commercial Note Taking Services"and ABOR Policy 5-308 F.14 for more information).

You must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

10 Subject to Change Notice

Reasonable effort will be made to follow the syllabus, but the syllabus can be modified if circumstances warrant it. If there are changes, you will be notified of the changes ahead of time. Changes will not be made to the grading scheme in a way that can reduce anyone's grade.