CS 3323 Principles of Programming Languages
Spring 2022 SYLLABUS

Instructor: Martin Kong (DEH-230, mkong@ou.edu)

Class Meetings: Dale Hall 103, 11:30AM – 12:20PM (M/W/F)

Office Hours: Mondays and Wednesdays 1pm – 2pm.

Course Website: Access through `https://canvas.ou.edu`

Delivery Method: The course will be delivered by standard in-person lectures and complemented with synchronous (live) delivery via Zoom. Lectures will also be recorded, and shared with students via Canvas. Class recordings must only be used as a complementary learning aid, and not as a replacement for live lectures (synchronous delivery). **Further, recordings should not be reposted or shared by any other means**, and only the instructor will have the authority to share media content beyond the scope of this course. Course materials such as slides, example files, sketches and assignment instructions will be available for download in Canvas.

All necessary Zoom links will be posted in the **Pages** space of the course site in Canvas.

Attendance Policy: In-person attendance is not mandatory. However, students who attend in-person at least 66.6% of the lectures will be awarded 5 additional points to their final grade, prior to letter-grade conversion. Failing to attend at least 66.6% of the lectures will result in forfeiting the additional 5% of the final grade. In-person attendance will be collected via the Zoom chat box during the class by signing-in at the beginning of the class (first 10 minutes), and signing-out at the end of the lecture (last 5 minutes).

If you contract COVID-19. Please avoid attending class in-person, and notify me of your absence.

Integrity: By taking this course, attending lectures, submitting quizzes and assignments, and taking the exams, you acknowledge that you haven't sought external help, beyond reasonable means, to any question or problem under evaluation. Furthermore, it is strictly prohibited to search for help by posting course evaluation questions to online sites and similar sources.

Textbook   No required book. However, different topics will be covered from the following books:

- *Programming Languages Pragmatics*, by Michael L. Scott, 4th edition, Morgan Kaufmann.

- *Compilers: Principles, Techniques, and Tools*, by Alfred Aho, Ravi Sethi, Jeffrey Ullman, Monica S. Lam. Pearson Publisher.

- *Engineering a Compiler*, by Keith D. Cooper and Linda Torczon, Morgan Kaufmann.

Required Work: The final grade consists of:

- Quizzes (30%): Six (6) online quizzes with Canvas. The quiz with the lowest score will not count towards your final grade. No make-up up quizzes can be provided. In-person attendance to take the quizzes is mandatory.

  In this course, all quizzes are open-book and open-notes, unless otherwise specified. In some cases you can also use compiler tools at hand.

- Programming Assignments (30%): You will develop parts of a language and compiler in four separate programming projects submitted via Canvas. You will have 2-4 weeks for each programming assignment. Can work in groups of up to 3 students. Working in groups is not mandatory. See Canvas for specific dates and details.

  Late policy: You can submit your assignments up to 2 days late, but each group member will lose 2.5 points per day. No assignments will be accepted past the second late day, that is, third day or later.

- Additional 5 points (5%) if 66.6% or greater of class attendance. No fraction of the 5 points will be awarded for less than 66.6% of class attendance.

- Midterm (20%).

- Final Examination (20%): All course topics included, not just post-midterm.

  NOTE: quizzes, midterm and final exams can include topics from the programming assignments.

Learning Goals and Plan: An introduction to theoretical foundations and paradigms of programming languages. Topics include basic concepts such as lexical analysis, syntax analysis, syntax-directed translation, type systems and semantics, intermediate code generation, some practical issues such as memory management.

ABET Specific Outcomes of Instruction: By the end of the semester, the students will be able to apply computer science theory and software development fundamentals to produce computing-based solutions. For more information, see `http://www.abet.org`.

<div align="center">University Policies</div>

COVID-19

- Wearing masks in class is not mandatory. However, it is strongly encouraged.

- Screening and reporting: `https://ou.edu/together/healthy-together`.

- OU together: `https://www.ou.edu/together`.

Academic Integrity Cheating is strictly prohibited at the University of Oklahoma, because it devalues the degree you are working hard to get. As a member of the OU community it is your responsibility to protect your educational investment by knowing and following the rules. For specific definitions on what constitutes cheating, review the Students Guide to Academic Integrity can be found at `http://integrity.ou.edu/students_guide.html`

Religious Observance It is the policy of the University to excuse the absences of students that result from religious observances and to reschedule examinations and additional required classwork that may fall on religious holidays, without penalty.

Reasonable Accommodation Policy Students requiring academic accommodation should contact the Disability Resource Center for assistance at (405) 325-3852 or TDD: (405) 325-4173. For more information please see the Accessibility and Disability Resource Center (ADRC) website `https://www.ou.edu/adrc`. Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

Title IX Resources and Reporting Requirement For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24.7, counseling services, mutual no contact orders, scheduling adjustments and disciplinary sanctions against the perpetrator. Please contact the Sexual Misconduct Office 405-325-2215 (8-5, M-F) or OU Advocates 405-615-0013 (24.7) to learn more or to report an incident.

Adjustments for Pregnancy/Childbirth Related Issues Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see `www.ou.edu/content/eoo/faqs/pregnancy-faqs.html` for commonly asked questions.

Final Exam Preparation Period Pre-finals week will be defined as the seven calendar days before the first day of finals. Faculty may cover new course material throughout this week. For specific provisions of the policy please refer to OUs Final Exam Preparation Period policy (`https://apps.hr.ou.edu/FacultyHandbook#4.10`).

Emergency Protocol During an emergency, there are official university procedures that will maximize your safety.

- Severe Weather: If you receive an OU Alert to seek refuge or hear a tornado siren that signals severe weather 1. LOOK for severe weather refuge location maps located inside most OU buildings near the entrances 2. SEEK refuge inside a building. Do not leave one building to seek shelter in another building that you deem safer. If outside, get into the nearest building. 3. GO to the buildings severe weather refuge location. If you do not know where that is, go to the lowest level possible and seek refuge in an innermost room. Avoid outside doors and windows. 4. GET IN, GET DOWN, COVER UP. 5. WAIT for official notice to resume normal activities.

- Armed Subject/Campus Intruder: If you receive an OU Alert to shelter-in-place due to an active shooter or armed intruder situation or you hear what you perceive to be gunshots: 1. GET OUT: If you believe you can get out of the area WITHOUT encountering the armed individual, move quickly towards the nearest building exit, move away from the building, and call 911. 2. HIDE OUT: If you cannot flee, move to an area that can be locked or barricaded,

turn off lights, silence devices, spread out, and formulate a plan of attack if the shooter enters the room. 3. TAKE OUT: As a last resort fight to defend yourself. For more information, visit http://www.ou.edu/emergencypreparedness.html

- Fire Alarm/General Emergency: If you receive an OU Alert that there is danger inside or near the building, or the fire alarm inside the building activates: 1. LEAVE the building. Do not use the elevators. 2. KNOW at least two building exits 3. ASSIST those that may need help 4. PROCEED to the emergency assembly area 5 ONCE safely outside, NOTIFY first responders of anyone that may still be inside building due to mobility issues. 6. WAIT for official notice before attempting to re-enter the building.