Syllabus
CS 341: Programming Language Design and Implementation

Jon A. Solworth

Fall 2023

E-mail	solworth@rites.uic.edu (please don't write to other email addresses)
Office Location	807 SEO
Office Hours	4 pm - 6 pm on Wed. in Office and by appointment
Zoom Link	https://uic.zoom.us/my/jon.solworth
Lect. Hours	2-2:50 pm MWF (LC D1) or
Lect. Hours	3-3:50 pm MWF (LC D1)
	Class web resources
discussion	(invite piazza.com/uic/fall2023/cs341)
handouts	(invite uofi.box.com/s/9r1qixtnq66yl1ud9mm2fl6o4lwd73c4)
iclicker.com	(search for solworth)
gradescope	autograding
TAs:	Syed Abbas, Krishna Garg, Sarthak Jain, Ke Xu
	Aryan Chauhan, Raj Patel, Samuel Skean
TA office hours:	`docs.google.com/spreadsheets/d/`
	`1POqShXnX6JqKPmtgocwUnDjYeKUbgbw0t8HJycgX2MM/edit#gid=0`

1 Timeline

topic	Date
midterm 1 (C++)	25 Sep.
midterm 2 (F#)	31 Oct.

2 This is a draft

We may make changes to the syllabus for course requirements.

3 Course Description

The goal of CS 341 is to open your mind to other ways of problem solving. Because problem solving is often influenced by the programming language you use, we study different languages and how they impact the way you think. At UIC (and most American universities and colleges), you are taught an imperative style of thinking using a language such as C, Java or Python. This has a tendency to bog down your thinking with low-level details concerning bits, bytes, pointers and

efficiency. While interesting at first, there are much more productive ways to problem solve. In CS 341 you will learn a variety of problem solving paradigms, including generic, object-oriented, functional, declarative, event-driven, and parallel. You'll practice these paradigms using a number of different languages, including C++, F#, and Go.

3.1 Prerequisites

- CS 251: Data Structures

3.2 Required Readings

There are two strongly recommended textbook:

- "A Tour of C++", by B. Stroustrup (ISBN 978-0134997834), 2nd edition

- "Get Programming with F#", by Isaac Abraham

You may find these additional texts useful, or you can seek your own sources for F# and Go Programming. More to come on this

- golang.org

- "OOP Demystified", by J. Keogh and M. Giannini (ISBN 978-0072253634).

3.3 Course Tools

3.3.1 Blackboard

The hub for all grading for this course.

3.3.2 Gradescope

There are a lot of students and a limited number of staff and time they have available to grade assessments. We will be using the Gradescope environment to offload some of this burden by automatically grading some assignments according to set rubrics. You will be asked to submit your programming assignments to Gradescope, which will provide prompt feedback as to whether the submission is satisfying the basic criteria of the assignment.

Note that Gradescope is not to be used in liu of testing. The Gradescope tests available to the class will be a subset of the test used for grading, so you must thoroughly test your code.

Your code should also be properly formatted and commented.

3.3.3 Piazza

Announcements will be made in class whenever possible. However, all announcements will be posted on our class Piazza site or on the Slides, so if you miss class please check these for announcements.

You should use Piazza for communication about the class and assignments. Please use a new thread for each subject, do not tack onto an existing thread. Do not use the same thread for the whole assignment.

You may not post any part of the solution to Piazza except *privately* to the instructors. You may post very short code fragments, not from the solution, to ask about issues with your code.

3.3.4 Box

Copies of all materials—lecture notes, handouts, practice exams, etc.—-are available from the course Box folder. You will need to log in with your UIC account to access these materials. Note that you need to enable `uofi.box.com` access from UIC's cloud dashboard.

3.4 Course Policy

3.4.1 Grading Policy

The course will consist of a variety of graded work: homework assignments, programming projects, and exams. The homework assignments are meant to be short, and intended to help you understand the class material; these will be approximately one per week and due at noon with the exploration of the solution in the following synchronous discussion, and your lowest HW score will automatically be dropped (so you can miss one without penalty). Programming projects will be larger and more involved, typically with 5-7 days to complete; no project scores are dropped.

There will be two midterm examinations, on dates to be determined. These exams will be in person. There will be a comprehensive final exam. Your final score will be determined based on the weighting of your individual scores, as follows:

- 25% of your grade will be determined by the homework assignments.

- 25% of your grade will be determined by the programming projects.

- 10% of your grade will be participation (iclicker)

- 20% of your grade will be determined by the two midterms.

- 20% of your grade will be determined by the final exam.

The lowest homework assignment will be dropped when determining final grades. Your final letter grade will be determined using the traditional 90-80-70-60 scale; however, the scale may shift downward, e.g. 88-78-68-58. Grading mistakes do happen, and so it is in your best interest to review all returned materials and published scores for correctness. Once a score is posted, there is a one week re-grading period where mistakes can be corrected by contacting the TA or professor during office hours. After the one week period, the posted score becomes official.

3.4.2 Attendance Policy

Class attendance is not mandatory; however, research indicates that students who attend class are more likely to be successful. You are strongly encouraged to attend every class. You should watch all of the videos to not overlook any of the material.

Also 10% of your grade depends on participation, as measured by iclicker. You must attend class to use iclicker.

3.4.3 Late Policy

Late assignments will not be accepted except where specifically indicated on assignments, there are too many students to handle late submissions on a case by case basis. If you have truly exceptional circumstances, contact the instructors via a private post on Piazza. The instructor will

post on Piazza when assignments become available and if any deadlines become extended. Most deadlines and late deadlines are assigned such that we can discuss the solutions immediately after, so extensions will be uncommon.

3.4.4 ChatGPT and other AI tools

Use of any AI tool to generate code is prohibited for projects or homeworks. You may use these tools if it helps you to learn, but *not* for handed in work.

3.4.5 Tests

Tests are closed book. They will require coding of programs fragments (although we do not expect perfect syntax).

3.4.6 Academic Dishonesty Policy

As an academic community, the University of Illinois at Chicago is committed to providing an environment in which research, learning, and scholarship can flourish and in which all endeavors are guided by academic and professional integrity. All members of the campus community—students, staff, faculty, administrators—share the responsibility of ensuring that these standards are upheld so that such an environment exists. Instances of academic misconduct by students, and as defined herein, shall be handled pursuant to the Student Disciplinary Policy. Academic dishonesty includes, but is not limited to:

- Cheating Either intentionally using or attempting to use unauthorized materials, information, people, or study aids in any academic exercise, or extending to or receiving any kind of unauthorized assistance on any examination or assignment to, or, from another person.

- Examination by Proxy Taking or attempting to take an exam or quiz for someone else other than the student is a violation by both the student enrolled in the course and the proxy or substitute.

  Submission or attempt to submit any written work authored, in whole or part, by someone other than the student.

Absolutely no transfer of program code between students is permitted (paper or electronic), and you may not solicit code from family, friends, or online forums. Other examples of academic dishonesty include emailing your program to another student, copying-pasting code from the internet, working in a group on a homework assignment, and allowing a tutor, TA, or another individual to write an answer for you. Academic dishonesty is unacceptable, and penalties range from a letter grade drop to expulsion from the university; cases are handled via the official student conduct process described at https://dos.uic.edu/conductforstudents.shtml

3.4.7 Electronic Communication Policy

All electronic communication with course staff should take place on Piazza unless emails are specifically requested by the staff. Grades may be checked on Blackboard, and communication with the instructor should take place in a private post on Piazza. Lectures will be recorded and made available through box.

Please protect the integrity of all course materials and content. By enrolling in this course, you agree to honor this request. Be mindful of the hard work and time that instructors and TAs put into creating course materials such as exam and quiz questions, worksheets, lecture videos, and reading materials. Please do not upload course materials not created by you onto third-party websites or share content with anyone who is not enrolled in our course. I am grateful for your cooperation in honoring this important request. Towards the goal of making learning as impactful as possible this semester, we will strive to abide by two overarching principles in this class:

- Engage in clear and frequent two-way communication regarding my expectations of you, the class workflow, and unexpected challenges arising that may impede your participation in required class sessions, including exams, or timely completion of assignments.

- Build an inclusive learning community in which we all abide by the same ground rules and ethical code of conduct. I look forward to connecting with you this fall. I will do my best to support your learning experience by listening to your needs and by conducting this course with compassion, empathy, and patience.

Due to the volume of email we receive, please do not use email for communication. All class-related emails will be ignored. A private post to Instructors via Piazza will ensure your message gets read.

3.4.8 Religious Holidays

The UIC Senate Policy on religious holidays is the following.

The faculty of the University of Illinois at Chicago shall make every effort to avoid scheduling examinations or requiring that student projects be turned in or completed on religious holidays. Students who wish to observe their religious holidays shall notify the faculty member by the tenth day of the semester of the date when they will be absent unless the religious holiday is observed on or before the tenth day of the semester. In such cases, the students shall notify the faculty member at least five days in advance of the date when he/she will be absent. The faculty member shall make every reasonable effort to honor the request, not penalize the student for missing the class, and if an examination or project is due during the absence, give the student an exam or assignment equivalent to the one completed by those students in attendance. If the student feels aggrieved, he/she may request remedy through the campus grievance procedure.

3.4.9 Privacy Policy

We will be recording the class sessions. Recording by other means is not permitted.

The recorded class sessions will be posted on our box class folder unless otherwise notified. Pursuant to the terms of the agreement between the vendor and UIC, the data is used solely for this purpose and the vendor is prohibited from re-disclosing this information. UIC also does not use the data for any other purpose. Recordings will be deleted when no longer necessary. However, the recording may become part of an administrative disciplinary record if academic misconduct occurs during a video conference session. If you have privacy concerns notify me in writing (via email) prior to the next class session. If you prefer to use Programming Language Design and Implementation—Fall 2023 a pseudonym instead of your name, please let me know what name you will be using so that I can identify you during the class session. If you would like to ask a question, you may do so privately through the chat feature by addressing your question to me or your TA

only (and not to "everyone"), or you may contact me or your TA by another private method, which we will agree upon in advance of class. If you have questions or concerns about this video recording policy, please contact me before the end of the second week of class.

3.4.10 Inclusive Learning Environment

UIC values diversity and inclusion. Regardless of age, disability, ethnicity, race, gender, gender identity, sexual orientation, socioeconomic status, geographic background, religion, political ideology, language, or culture, we expect all members of this class to contribute to a respectful, welcoming, and inclusive environment for every other member of our class. If there are aspects of the instruction or design of this course that result in barriers to your inclusion, engagement, accurate assessment or achievement, please notify me as soon as possible.

3.4.11 Student Parents

I know well how exhausting balancing school, childcare, and work can be. I would like to help support you and accommodate your family's needs, so please don't keep me in the dark. I hope you will feel safe disclosing your student-parent status to me so that I can help you anticipate and solve problems in a way that makes you feel supported. Unforeseen disruptions in childcare often put parents in the position of having to choose between missing classes to stay home with a child or leaving them with a less desirable backup arrangement. While this is not meant to be a long-term childcare solution, occasionally bringing a child to class in order to cover gaps in care is perfectly acceptable If your baby or young child comes to class with you, please plan to sit close to the door so that you can step outside without disrupting learning for other students if your child needs special attention. Non-parents in the class, please reserve seats near the door for your parenting classmates or others who may need to step out briefly.

3.4.12 Disability Accommodations

UIC is committed to full inclusion and participation of people with disabilities in all aspects of university life. If you face or anticipate disability-related barriers while at UIC, please connect with the Disability Resource Center (DRC) at drc.uic.edu, via email at drc@uic.edu, or call (312) 413-2183 to create a plan for reasonable accommodations. In order to receive accommodations, you will need to disclose the disability to the DRC, complete an interactive registration process with the DRC, and provide me with a Letter of Accommodation (LOA). Upon receipt of a LOA, I will gladly work with you and the DRC to implement approved accommodations.

3.4.13 Mental and Emotional Wellness

Counseling Services are available for all UIC students. You may seek free and confidential services from the Counseling Center at https://counseling.uic.edu/. The Counseling Center is located in the Student Services Building; you may contact them at (312) 996-3490 during normal business hours (M-F, 9 am -5 pm). If calling after hours, press 2 to be connected to a crisis counselor. In addition to offering counseling services, the Counseling Center also operates the InTouch Crisis Hotline from 6:00 p.m.-10:30 p.m. They offer support and referrals to callers, as well as telephone crisis interventions; please call (312) 996-5535. Campus Advocacy Network The Campus Advocacy Network provides information and offers resources to all UIC students, faculty, and staff. Under

the Title IX law you have the right to an education that is free from any form of gender- based violence and discrimination. Crimes of sexual assault, domestic violence, sexual harassment, and stalking are against the law and can be prevented. For more information or for confidential victim-services and advocacy, contact UIC's Campus Advocacy Network at 312-413-1025 or visit `http://can.uic.edu/`. To make a report to UIC's Title IX office, email TitleIX@uic.edu or call (312) 996–5657.

3.4.14   Safe Zone Statement

I am part of the Safe Zone community network of trained faculty who are available to listen and support you. As a Safe Zone Ally, I can help you connect with resources on campus to address problems you face that interfere with your academic success, particularly issues of sexual violence, hateful acts, or concerns faced by individuals due to sexual orientation/gender identity and/or expression. My goal is to help you be successful and to maintain a safe and equitable campus. And of course, I will do everything I can to make my classroom a safe zone. There will be zero tolerance for comments or behavior that make any individual feel not safe and/or not welcome. UIC has released the bias reporting tool, as of Spring 2021. Some of this language was borrowed from CATE: https://teaching.uic.edu/resources/toolkits/syllabus