Overview

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 SQL.

CS 341 is not run like a traditional lecture-based class, but is based instead on Peer Instruction. This approach works well with technical subjects, especially in larger classes. Peer instruction will start on the 2nd day of class, which means you need to bring your iClicker to class, and participate in at least 50% of the questions to receive class participation credit. Students may miss at most 4 “PI” classes without penalty; see Grading section for more details, and Class Schedule section for dates.

iClicker and Textbooks

You will need an iClicker device (version 1 or version 2 is fine). There are two required textbooks:


There is one recommended textbook if you are new to OOP (and don’t have a book available on the subject):

iClicker

Class participation is expected of all students, and requires an iClicker device. You can use an older v1 device (without the LED screen), or one of the newer v2 devices (with small LED screen). iClickers can be purchased in the bookstore, or borrowed from a friend; do *not* purchase a “webClicker” which runs on a smartphone / laptop — the delay makes this approach unusable in class. For participation to be properly recorded, you must register your device on the class Blackboard site:

1. Go to http://uic.blackboard.com/, login, and open the cs341 class site.
2. Select Tools from the site menu.
3. On the Tools page, Select i>clicker Student Registration from the list of items (very end?).
4. Enter the serial number from the back of your iClicker device in the iClicker Remote ID box.
5. Click Submit to confirm the registration.

Clicker usage will begin on the 2nd day of class.

iClicker Teams

Peer instruction is based on team (aka “peer”) discussion. During class, the goal is to sit, work and discuss with other students in the class. During the first 2 weeks, try to build your “iClicker team”, i.e. 2 or 3 students you like to work with during class.

Programming Environment

The course involves a significant amount of programming using a variety of different languages. This semester we’re going to break from the past and try a new, online programming environment: https://www.codio.com. The platform is free (to you) and completely cloud-based, so it works from any computing device (including chromebooks). The tradeoff is that you must be online to use the system. To join the CS 341 Codio class, use the following link and register with your UIC email address (do not use other email addresses, we need a unique way to identify you within the Codio system):

https://codio.com/p/join-class?token=maximum-almond

If you prefer, you’ll be able to program outside Codio in the environment of your choice, but the idea is to provide a standard platform that works for all, and serves as a common testing and submission framework.

If you do not own a personal computer, you are welcome to borrow a low-end Windows laptop from the CS department. Post privately to Piazza with your name and netid, and a machine will be provided in 24-48 hours; you may keep this machine for the duration of the semester (and longer if need be).

Piazza, not email

Due to the volume of email we receive, please do not use email for communication — all class-related emails will be ignored. The one exception are matters of a personal nature, in this case you can (and should) email your professor or one of the TAs. Appropriate personal matters include family emergencies, classroom issues, and grading disputes.

To provide assistance, answer questions, and post announcements, we will be using a forum-based web site called Piazza. You should think of Piazza as your primary mechanism for all class-related discussions and questions. Piazza allows students and staff to help one another, reducing the time-to-answer. Your professor and TAs will check Piazza
repeatedly each day — you should get in the habit of doing the same. Before posting, please search Piazza as the answer to your question may already be online. When posting, please follow these guidelines:

1. **Look before you post** — the main advantage of Piazza is that common questions are already answered, so search for an existing answer before you post a question. Posts are categorized to help you search, e.g. “HW”.

2. **Post publicly** — only post privately when asked by the staff, or when it’s absolutely necessary (e.g. the question is of a personal nature). Private posts defeat the purpose of piazza, which is answering questions to the benefit of everyone.

3. **Ask pointed questions** — do not post a big chunk of code and then ask “help, please fix this”. Staff and other students are willing to help, but we aren’t going to type in that chunk of code to find the error. You need to narrow down the problem, and ask a pointed question, e.g. “on the 3rd line I get this error, I don’t understand what that means…”.

4. **Post a screenshot** — sometimes a picture captures the essence of your question better than text. Piazza allows the posting of images, so don’t hesitate to take a screenshot and post; see [http://www.takescreenshot.org/](http://www.takescreenshot.org/).

5. **Don’t post your entire answer / code** — if you do, you just gave away the answer to the ENTIRE CLASS.
   Sometimes you will need to post code when asking a question --- in that case post only the fragment that denotes your question, and omit whatever details you can. If you must post the entire code, then do so privately --- there’s an option to create a private post (“visible to staff only”).

You should have received an invitation to join Piazza via email. If not, you can join by browsing to the Piazza site and enrolling:


### Announcements, Lecture Notes, Handouts, etc.

Announcements will be made in class whenever possible. However, all announcements will be posted on our class Piazza site, so if you miss class please check Piazza for announcements. Copies of all materials — lecture notes, handouts, practice exams, etc. — are available from the course web page: [http://www.cs.uic.edu/~i341/](http://www.cs.uic.edu/~i341/). Finally, videos of each class are recorded by UIC’s UICast system and posted to Blackboard.

### Grading

The course will consist of a variety of graded work: class participation, 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 frequent and due at the start of class, 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 2 exams and a cumulative final exam; see the Class Schedule for dates. Your final score will be determined based on the weighting of your individual scores, as follows:

- **Class participation:** 04%
- **Homework:** 12%
- **Programming Projects:** 42%
- **Exams (2 @ 12% each):** 24%
- **Final Exam:** 18%

Class participation is based on participation during Peer Instruction (“PI”). For each “PI” class listed in the Class Schedule you must attend class & participate in at least 50% of the questions using your iClicker. Students may miss at most 4
“PI” classes without penalty. Note that this policy includes both unexcused and excused absences (medical, sports travel, religious holidays, etc.); you cannot miss 4 classes without penalty and then expect to miss additional classes due to excused absences / religious holidays / job interviews / etc.

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 2-week re-grading period where mistakes can be corrected. After the 2-week period, the posted score becomes official.

### Academic Honesty

Unless stated otherwise, all work submitted for grading *must* be done individually. While we encourage you to talk to your peers and learn from them (e.g. your “iClicker teammates”), this interaction must be superficial with regards to all work submitted for grading. This means you *cannot* work in teams, you cannot work side-by-side, you cannot submit someone else’s work (partial or complete) as your own. The University’s policy is available here: https://dos.uic.edu/conductforstudents.shtml.

In particular, note that you are guilty of academic dishonesty if you extend or receive any kind of unauthorized assistance. 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. It is also considered academic dishonesty if you click someone else’s iClicker with the intent of answering for that student, whether for a quiz, exam, or class participation. 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.
There are two sections, both of which meet MWF (11-11:50am and 3-3:50pm). The two classes will take the final exam at the same time (see the schedule below). “PI” implies the class is based on peer instruction, which means class participation is required with your iClicker. In terms of topics, you can expect weeks 1-5 to cover object-oriented and generic programming with C++, weeks 6-10 to cover functional programming with F#, and the remainder of the class to cover event-driven programming (C# or JavaScript), declarative programming (SQL), and potentially dynamic and parallel programming.

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Thursday, May 9th: combined **FINAL EXAM** (10:30am – 12:30pm, SES 250)