

CS1210 Computer Science I: Fundamentals

LR1 Van Allen Hall

2:30pm - 3:20pm MWF

Alberto Maria Segre (alberto-segre@uiowa.edu)

14D MacLean Hall (the main CS Department office)

3:30pm - 5:00pm Th (or by appointment)

Course Description

Welcome to CS1210. This is the introduction to computer science course for CS majors and minors, as well as students from other disciplines (*e.g.*, mathematics, statistics) where a solid foundation in computer science as well as fluency in computer programming will be required. Computational concepts are presented in the context of working examples and exercises. The key programming topics include flow control, data types, functions, objects and classes. And while the course will be taught in Python, the emphasis is not on learning to program in any particular language, but rather on learning problem solving techniques that can then be expressed in any programming language.

There are no computing prerequisites for this class: students are not expected to have previous computer programming experience, but basic knowledge of how to use a computer (word processing, using a web browser) is assumed. Students should have competency with basic arithmetic and algebra; technically, any student ready to take Calculus I is ready to take CS1210.

Alternative introductory computing courses are CS1020 *Principles of Computing* (for all students) and CS1110 *Introduction to Computer Science* (for Informatics and other data-oriented majors). CS1020 has no programming content, while CS1110 includes a gentle introduction to Python, and may also be suitable for those exploring the CS major, but who may wish to have more information before committing.

Course Format

The course is presented in lecture/discussion form. The lecture section will meet from 2:30pm to 3:20pm on Monday, Wednesday and Friday in LR1 Van Allen Hall (the Physics building); each student will also attend a smaller discussion section taught by a teaching assistant (TA) every Tuesday or Wednesday.

A01	9:30am - 10:20am T	301 MLH	Akshay Yadav akshay-yadav@uiowa.edu
A02	11:00am - 11:50am T	301 MLH	Avinash Talreja avinash-talreja@uiowa.edu
A03	12:30pm - 1:20pm T	301 MLH	Shubham Dwivedi shubham-dwivedi@uiowa.edu
A04	2:00pm - 2:50pm T	301 MLH	Ruchika Salunke ruchika-salunke@uiowa.edu
A05	5:00pm - 5:50pm T	301 MLH	Ruchika Salunke ruchika-salunke@uiowa.edu
A06	9:30am - 10:20am W	301 MLH	Akshay Yadav akshay-yadav@uiowa.edu
A07	11:30am - 12:20pm W	301 MLH	Pat Rhomberg patrick-rhomberg@uiowa.edu

A08	12:30pm - 1:20pm W	301 MLH	Pat Rhomberg patrick-rhomberg@uiowa.edu
A09	10:30am - 11:20am W	301 MLH	Avinash Talreja avinash-talreja@uiowa.edu
A10	1:30pm - 2:20pm W	301 MLH	Shubham Dwivedi shubham-dwivedi@uiowa.edu

Please take note of your discussion section (e.g., A07) and your TA's name (e.g., Pat Rhomberg), as you will need to put these on every homework exam, quiz and test.

Course Materials

There are many reasonable textbooks to help beginning programmers with Python. Because books can be expensive, I've instead chosen a free, open source, textbook:

Think Python: How to Think like a Computer Scientist, Alan B. Downey; 2012:
<http://www.greenteapress.com/thinkpython/>.

This is a pretty good reference and you will find it an invaluable tool for mastering Python. Although we will not follow the textbook closely, I will often assign certain pages to read when I think they will be particularly helpful in understanding the material we are covering in class. I would urge you to read these prior to the lecture, but also to reread them once the concepts have been presented to you. I think you will find that each time you revisit the text you will achieve greater clarity and understanding of what is, frankly, complicated material.

You will also each receive access to the CS computer laboratory in 301 MacLean Hall. The lab provides access to machines with the appropriate version of Python installed. Some of you will elect instead to install Python on your own laptop; I expect this will be preferable for most of you. We will explain what to download and install during the first discussion section; note, however, that we cannot provide technical support for any installation on your personal equipment.

Additional materials may be occasionally posted on the ICON web site; please visit regularly.

Student Responsibilities

Students are responsible for all material presented in lecture and discussion section, as well as content presented on the ICON web site, where course announcements, corrections and clarifications to the assignments will be posted.

We may on occasion send e-mail announcement to all students in the class. You are responsible for all official correspondence sent to your UI address (@uiowa.edu). Make sure check your e-mail regularly.

Grading

Plus/minus grading will be used for the course. There are the four components that will determine your grade:

Examinations (50%): There will be two midterm exams, each worth 15%, held in the evenings, on Thursday, October 1 8:15-9:45 PM in ML Aud (week 6), and on Thursday, October 29 8:15-9:45 PM in ML Aud (week 10). The final exam is worth 20% (date and time TBA). Conflict exams will be scheduled for those with evening class conflicts.

Homeworks (25%): You will be assigned five or six homework assignments and you will have roughly one week to complete each assignment. Your solutions will be accepted via the ICON dropbox, and

only the most recent version submitted prior to the deadline will be graded.

Programming projects (20%): You will be assigned two programming projects, due roughly in weeks 13 and week 15. Each project should take about two to three weeks to complete.

Quizzes (5%): There will be a small number of in-class and/or in-discussion-section pop quizzes, each just a few minutes long. Your lowest quiz grade will be dropped, but no make up quizzes will be given, regardless of the reason for your absence. Please plan accordingly.

Final grades will be curved in accordance with the CLAS recommended grade distribution for introductory courses (<http://clas.uiowa.edu/faculty/teaching-policies-resources-grading-system-and-distribution>).

Important: Note that late homework submissions or projects will not be accepted, nor will extensions be granted under any circumstances. Also, please realize that while we will do our best to grade and correct submitted work within a week of submission, grading 250 or so programming assignments is a difficult and time-consuming task. We would rather do the job right the first time than rush to return your homework.

Getting Help

First, there is no substitute for asking questions in class. There is no such thing as a stupid question; I can guarantee that any question you might have will also be on the mind of at least one other classmate. Asking questions in class is the quickest, most reliable, most efficient, means of getting an answer: don't be afraid to raise your hand.

Because the class is so large, TAs will be holding regularly scheduled help sessions. If you need help with homework or a programming assignment, come to any help session — it needn't be the one led by your assigned TA. All of the TAs are equally able to help you and you should feel comfortable asking any TA for assistance. Help session schedules will be posted weekly on the class ICON page.

The class ICON page also has a discussion board where you can post your questions as well as read questions asked by other students in the class. This is the most efficient and possibly quickest means of getting questions answered quickly outside of class; both the TAs and I monitor the discussion board throughout the day, and questions are answered as promptly as humanly possible. Your classmates are also encouraged to participate in this discussion and often provide extremely useful advice and feedback. Also note that the discussion board allows you to post your questions anonymously (although the instructors will still know who you are) so you needn't feel shy about asking any question related to the course material.

As a last resort, you may also send your questions to the TAs or me by email. Email is most appropriate if you are sending part of your solution, as such questions shouldn't be posted on the ICON discussion board. Be sure to include *CSI* in the subject line of your message, so that we can identify high priority class-related items in our inboxes.

Finally, if you have a question about course administration or how a homework assignment or exam was graded, then you should visit first with your own TA, and then, if you still have questions, directly with me.

Academic Integrity

Violations of academic integrity will not be tolerated. Under no circumstances should you pass off the work of someone else (including any code or material you may find on the Internet) as your own, nor should you share your own work with others. Note that we routinely employ software to detect plagiarism

and to test any suspicions we might have. If you are unclear about what constitutes academic dishonesty contact the instructor or consult the Academic Honesty policy on the CLAS website.

We do want students to talk to each other about concepts and ideas that relate to the class. However, it is important to ensure that these discussions do not lead to the actual exchange of code fragments or written solutions. *You should never, under any circumstances, share written, printed or electronic copies of your programs or pieces thereof with anyone but the instructor or the TA.* Note that discussions about assignments on the ICON discussion board are almost always OK as long as no code is exchanged. It is, for example, legitimate to ask why a print statement works a certain way, but you should phrase the question to make it clear it is about Python usage, and not about a particular homework problem.

Advice

My hope is that every student will succeed in this class, and will come to enjoy the material as much as I do. Pragmatically speaking, however, I realize that many students find this course to be quite challenging.

There are a number of things you can do to improve your performance. First, come to class. Some students inevitably feel that class is optional, and that they can simply read the book and learn the material on their own. Generally speaking, these students fail at a much higher rate than those who attend, and their grades average at least one letter grade lower than other students (*n.b.*, if missing a class is unavoidable, I do upload each lecture's video capture to the ICON web site; do watch it prior to the next class session). Second, don't procrastinate. Homework assignments and projects are challenging even for those who start working on them right away. If you wait until the last minute, you are very likely not to complete it. Instead, read each assignment carefully as soon as it is available so that you are clear what the assignment is asking you to do; come to lecture prepared to ask questions about the assignment if something is unclear.

As a general rule, each student should expect to devote 2 hours of additional work per week outside of the classroom for each course credit; since this is a 4 credit course, you should expect to spend, on average, about 8 additional hours per week reading lecture notes, solving homeworks, completing programming projects, following class discussions on ICON, preparing for exams, etc. Realize that this estimate is an *average* — some weeks will require more work than others — and excludes any hours you might spend trying to assimilate material from lectures you did not attend or working problems covered in discussion sections that you missed. The estimate also presupposes that you are in general thoughtful and efficient about how you approach the material.

General College of Liberal Arts and Sciences Course Policies

The following course policies pertain to all courses offered in the College of Liberal Arts and Sciences.

Administrative Home (<http://www.clas.uiowa.edu/students/handbook/index.shtml>): The College of Liberal Arts and Sciences is the administrative home of this course and governs such academic matters as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall or see the CLAS Academic Handbook.

Electronic Communication (<http://www.uiowa.edu/~our/opmanual/iii/15.htm>): University policy (Operations Manual, III.II.15.2.k.11) specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check their account frequently.

Academic Honesty (<http://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>): All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College's Code of Academic Honesty: *I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty.* Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled.

CLAS Final Examination Policies The final examination schedule for each class is announced by the Registrar generally by the fifth week of classes. Final exams are offered only during the official final examination period. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. Once the Registrar has announced the date, time, and location of each final exam, the complete schedule will be published on the Registrar's web site and will be shared with instructors and students. It is the student's responsibility to know the date, time, and place of a final exam.

Suggestions/Complaints (http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml): Students with a suggestion or complaint should first visit the instructor, then the course supervisor and the departmental DEO. (*n.b.*, because the instructor is also the departmental DEO, Professor James Cremer has been delegated to field complaints if you are not satisfied with the response of the course supervisor). Complaints must be made within six months of the incident. See the CLAS Academic Handbook.

Accommodations for Disabilities (<http://www.uiowa.edu/~sds/>): A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make appropriate arrangements.

Understanding Sexual Harassment (<http://www.uiowa.edu/~eod/policies/sexual-harassment-guide/index.html>): Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather (<http://police.uiowa.edu/stay-informed/emergency-communication/>): In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.