University at Albany

CSI 105 : Computing and Information Fall 2019

Monday, Wednesday & Friday 11:30–12:25 ES 232

Instructor	Cristyn Magnus, Ph.D.
Office Hours	M 12:45–2:45pm or by appointment
Office	HU B016
Textbook	Horowitz, Lenore Gervais. "Programming for Problem Solving" Available as pdf in your individual repository Available as paperback at the Bookstore
Readings	Additional required readings are included in your individual repository

1 Course Description

Ever thought about a problem and said, "There should be an app for that"? This course provides an introduction to computer programming using modern programming languages as a way to solve problems. It focuses on programming concepts and fundamentals within the context of solving real world problems.

Prerequisites: (Almost) none.

However, you should be at least a bit comfortable with computers. Here are some examples of things you should work on becoming comfortable with in order to succeed in this course:

- use your operating system
- use a mouse/trackpad
- install software
- search the web
- knowing that files need to be saved and how to do it
- explore menu options in software you encounter to figure out how to access its basic functions
- understanding that different file types use different encodings and that they usually can't be changed just by renaming the file

If you aren't comfortable with these kinds of things, you're still welcome in the course. Just make sure you find resources outside of class to catch yourself up. You can get help by searching the web, asking friends, contacting ITS, or seeking technical support from the company whose hardware/software you are struggling with.

2 Learning Objectives/Outcomes

At the end of this course, you will:

- Be able to analyze real-world problems then design and implement computational solutions for them
- Understand when to use common data types and data structures
- Be able to create, modify, and explain computer programs
- Be able to deploy the following concepts in algorithms/programs: sequences, loops, conditionals, abstraction
- Be able to use version control and project management tools
- Have read works about important technology theory concepts and discussed how they apply to you as a technologist

3 Online Resources

Piazza: Piazza is a wiki-based forum that allows students to ask and answer each others questions. Piazza will also be used for announcements. In addition to being available as a web site, it is also available as an app for both Android and iOS. See *participation* below.
`https://piazza.com/albany/fall2019/inf108/home`

Github: Github provides free cloud storage for the *version control* system Git. Git is the industry standard and it is important to be comfortable using it. We will be using git for all programming assignments to develop good programming habits. Unless otherwise specified, all course activities will be submitted using github.

Github also provides a free, cloud-based project management tool. It is designed for *agile* project management, which is one of the most common project management styles in computing. You will be practicing good project management habits as you develop your programming skills.

You will have access to both an individual and team repository. A reading folder is included in your individual repository so you can freely annotate the pdfs.
`https://github.com`

Github courseInfo repository: The syllabus, textbook, and other information about the course can be found in the courseInfo repository on github.
`https://github.com/inf108/_fall2019_courseInfo`

Blackboard: We will not be using blackboard for this course. Announcements will be posted on piazza.

3.1 Grading

In an intro computing class, we're all starting at different places. Some high schools have great computer programs; some don't have any computing courses. Some of us are computing majors; some of us are not. Some of us grew up in houses with computers; some of us had to use computers at the library or get by with phones or tablets. And so on.

We have the basic learning objectives for the course—the things that you've got to know to succeed in the next course in the sequence. But beyond that, I'm trying to build a lot of open-endedness into this course so people can tailor it to their learning needs. To that end, I'm experimenting (I do that a lot) with gamified grading.

Everyone will get a grade sheet that lists achievements they can achieve. Some of these achievements will be mandatory to achieve each grade level, but higher grade levels will also require a certain number of elective achievements. You can select from elective achievements to tailor the class to your background and interests.

A achievement might be the completion of something like using `print` in a program, taking notes on a reading, or successfully making a git commit. Many of these you'll achieve along the way by successfully completing assigned work. Others are less obvious—e.g. someone who takes longer getting a program finished because they discovered some weird bugs along the way can get achievements for finding and fixing different kinds of bugs.

In *addition* to the required achievements marked on the grade sheet, these are the thresholds for each grade level:

D-	70% of required C achievements
D	80% of required C achievements
D+	90% of required C achievements
	100% of required C achievements plus:
C-/U	0 elective achievements
C/S	80 elective achievements
C+	90 elective achievements
	100% of required B achievements plus:
B-	100 elective achievements
B	110 elective achievements
B+	120 elective achievements
	100% of required A achievements plus:
A-	130 elective achievements
A	145 elective achievements
A+	160 (we can't give these, but you'll know you're awesome)

Submitting Assignments & Claiming Achievementss Unless otherwise specified, all assignments will be submitted through github. Don't worry if you haven't used git before; we will spend the first few activities familiarizing everyone with git so you'll be able to submit later activities. You should use your commit message to give an overview about the changes you made to your repository and note that you believe that you have achieved a achievement.

An example commit message is something like this:

```
Print hello world
Achievement: use built-in python function print
```

Do NOT hand in assignments through email Emailed assignments will not be considered submitted. If you choose to hand in an assignment by email for any reason, even with written or verbal permission from an instructor, you must also follow up with a submission via github as soon as possible. Email can get lost; your github repository will collect everything in one place and clearly document what you have accomplished in the course.

3.2 Graded Activities

Participation We will maintain our own forum on `http://piazza.com` where students from the course can post questions and answers. Piazza allows wiki-like collaborative construction of questions and answers. You can achieve milestones for any of these activities:

- posting a new question
- posting a new answer
- editing someone else's question or answer to clarify it, organize it, or add helpful information

To receive credit, you must register for piazza with the name you are registered with as a student or a preferred name that you regularly use and have shared with the instructor.

Reading There are pdfs of the textbook and several enrichment readings in your individual repository. You can read them however you like. If you choose to read them using a pdf viewer that allows you to make annotation, take notes using that tool, and commit those changes to your github repository, you can achieve milestones for reading. You will receive additional milestones for notes taken *before* a reading comes up in class.

Individual Programming Several programs of increasing complexity will be assigned over the course of the semester. You will do these programs in your individual git repository. You should try to program consistently each week to make progress on these programs. You can achieve milestones through these programming activities.

In-class (Team) Activities You will be assigned to teams early in the term. You will participate with your team on *in-class* discussions and activities. You will work with the same team the entire semester but you are *not* expected to work with your team outside of class.

We are going to experiment with a different kind of team work. Part of the point of version control systems like git is that they facilitate collaboration. They let teams work on different parts of big projects and merge them together into a final product. Also, git

lets everyone on the team see who did what when. You can achieve milestones for your individual contributions to the team's repository.

Additionally, you should help each other out. If you get stuck, you should add a note to your commit message if a team member helped you get un-stuck. This way they can achieve milestones for helping you out.

Enrichment Programming isn't all about sitting at a computer and coming up with algorithms. We miss out if we don't understand our medium (the computer) and its place in society. *Miss out* is a bit of an understatement. We risk making bad programs. Bad programs fall somewhere on the continuum between not living up to their potential and actually getting people killed.

We will have several enrichment activities in which we will read articles (see *Reading* above) that lead into an in-class team activity. You and your team will achieve milestones for participating in these activities.

Final Project *There is no final exam.* Instead of a final exam, you will do a final project. You should treat this with the same gravity that you would treat a final exam.

You should spend time throughout the beginning of the term thinking about your final project. You may submit a final project proposal at any time (in your individual repository on github) and can begin working on the project as soon as it is approved. You should plan on working on it in pieces over the course of the last part of the semester. You probably want to wait until you've learned enough to work on it, but not so long that you are rushed and don't have time to seek help if you need it.

4 Policies

Attendance: Attendance, itself, is not graded. Instead, in-class activities allow many opportunities to achieve milestones. Some of these are required to reach grade levels. Because of the nature of in-class assignments, no make-up opportunities will be available.

Computing Resources: Although the projects can be done on your own computers, problems with your system (hardware, software, network access, etc.) will not be accepted as excuses for late or missing work. Information Commons computers are provided in the UAlbany libraries for students with computer or network issues. Students are required to read the University at Albany Policy for the Responsible Use of Information

Technology (https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy).

Email Policy: Instructors and TAs get a large volume of email and will set aside time at least once a week to deal with it. In your subject line, you should include the course number and a brief note of what you are emailing me about (e.g. "INF 108: appointment"). When I set aside time to address student emails, I will use a subject filter. Emails that do not contain "INF 108" in the subject line may end up in junkmail.

You should use the http://piazza.com forum for all non-personal course-related communication. If you have questions about assignments, technical problems that need troubleshooting, or other questions that might be of interest to other students, they must be posted to piazza.com and not sent via email. I have my piazza notifications turned on so I will receive questions posted on piazza far more frequently than I check my email, so it is your best chance at a prompt response.

You may email me in the following circumstances:

- If you cannot come to office hours and need to set up an appointment to meet at another time—in this case you *must* include your availability for the upcoming week. Otherwise it could take us weeks of back-and-forth to schedule an appointment. Keep in mind that I'm busy, so if you don't list all your free times, we might not find a time where we are both free.
- If you have need to contact me about a private matter. Examples include:
  - Making arrangements for disability accommodations.
  - To discuss private, personal matters that are impacting your coursework such as physical or mental illness, death in the family, etc.
  - If the I asks you to email me something relating to a previous conversation.
  - To let the me know that your preferred name/gender is not the name you are registered with so you can use your preferred name in course activities without losing credit because your preferred name does not match the name in the roster.

Make-up Policy: There are generally no make-up opportunities for missed in-class activities except in extenuating circumstances (please see http://www.albany.edu/health_center/medicalexcuse.shtml.). Depending on the grade you are aiming for, you may miss a class or several without losing out on necessary achievements.

Plan carefully for classes that you know you will need to miss. Work, religious practice, sports team travel, military duty, club activities, fraternity/sorority obligations, family responsibilities, assignments for other courses, and even brief illnesses, etc.—these are your

responsibility to manage using elective achievements.

If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, meet with your instructor in order to make arrangements. Most likely we will arrange to substitute specific elective achievements to make up for missed required achievements. Since these will be harder to achieve the longer you put them off, don't wait until it's too late to see me if you get in trouble.

Students with Disabilities: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning, and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center (`http://www.albany.edu/disability/`). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations.

In general, it is the student's responsibility to contact the professors at least one week before the relevant assignment to make arrangements. If you have a disability that affects you sporadically, it is a good idea to preemptively register with the disability office so that if you have a flare up, you will have already set up your safety net.

Incompletes and Requests for Re-evaluation: Students must complete all requirements in order to pass the course. A grade of incomplete will be given only when circumstances beyond the student's control cause a substantial amount of course work to be unfinished by the end of the semester. Whenever possible, the student is expected to make extra efforts to prevent this situation from occurring. The instructor will be the sole judge of whether an incomplete is warranted. Final grades are computed based on the above formulas and are NOT negotiable. Per department policy, "students may not submit additional work or be re-examined for the purpose of improving their grades once the course has been completed and final grades assigned."

A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Withdrawal from the course: The drop date for the Fall 2019semester is Mon, Sep 9 for undergraduate students. That is the last date you can drop the course without receiving a 'W.' The last day you can drop the course and receive a 'W' is Mon, Nov 4. It is your

responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Announcements: Course announcements will be posted on Piazza (`http://piazza.com`. You are expected to be aware of course announcements. You can set the app to give you push notifications when new questions, answers, or announcements are posted. You may also use settings to configure it to send you email (or not), either in real-time or as a digest.

Weather Cancellations: Students are responsible for awareness of campus closure. You can get this information from various sources. See `http://www.albany.edu/emergency/` for more information.

Unless an announcement is posted saying otherwise, weather cancellations will not affect the planned schedule.

Phones, Laptops, and Other Distractions: Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS web site: `https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy`

Computers, phones, and laptops may be used during class for note taking as long as the use is not disruptive or distracting. If you have attentional issues that prevent you from focusing on class if you are not also fidgeting with something else, you should make a point of sitting towards the back or edge of the room so you don't hurt the focus of students whose attention requires minimal distraction. While the instructor may be lenient in students taking the occasional emergency text, you may be asked to put your tech away or sit in the back if your tech use becomes a significant distraction to other students or is hindering your ability to focus on the class.

Conduct: Students are expected to abide by UAlbany community standards: `http://www.albany.edu/communitystandards/`. In particular, students are expected to be civil in class and in the piazza forum associated with this class. Trolling, hate speech, harassment, etc. will bear the same penalties as academic dishonesty (see below).

5 Academic Integrity

Students are expected to be familiar with and abide by UAlbany's Standards of Academic Integrity published in the Undergraduate Bulletin. (`http://www.albany.edu/undergraduate_bulletin/regulations.html`)

Some of the work that you do in this class will be done with teams and some will be individual. Academic honesty principles apply in both cases: teamwork must be the work of the team and no one else; Individual work must be the work of the individual and no one else. In particular, in-class activities that you do alone with your team as a study group must be your own work. Your team is there if you need conceptual help or feedback, but input beyond that constitutes cheating.

You may form study groups, discuss assignments and techniques in general terms, etc., but the assignments themselves must be your own work. In particular, two or more people may not create any portion of an assignment together and submit it for credit. Please ask if you have any questions about academic integrity.

A (non-exhaustive) list of unacceptable activities is:

- Allowing other students to see or copy your assignments.
- Examining or copying another student's assignments.
- Allowing other students to see or copy your work during an exam.
- Examining or copying another student's work during an exam.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Directly using ideas from other sources without engaging with those ideas and producing something of your own. Rewording someone else's ideas is still plagiarism unless you are restating their ideas as a first step to engaging with those ideas.
- Lying to the professor about issues of academic integrity.

Any incident of academic dishonesty in this course, no matter how "minor" will result in:

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities (e.g. the Dean of Undergraduate Studies).
- One of
  - A final mark reduction by at least one-half letter grade
  - A Failing mark (E) in the course
  - referral of the matter to the University Judicial System for disposition.