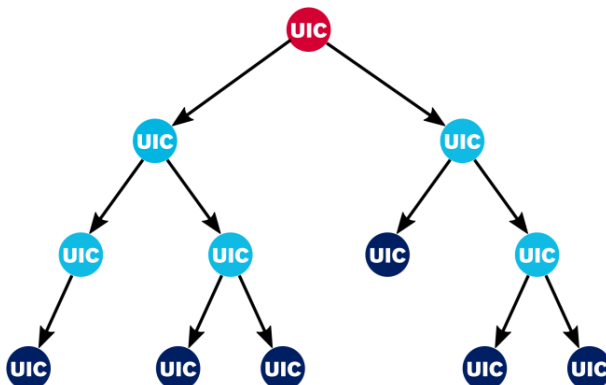


MCS 275 – Programming Tools and File Management – Spring 2021

Emily Dumas



1. BASIC COURSE INFORMATION

Course Web Page [In Blackboard Learn](#)
https://uic.blackboard.com/ultra/courses/_190696_1/c1/outline

Lectures MWF 12:00-12:50pm (CRN 44167)

Discussion section Tue 1:00-2:50pm (CRN 44168) or Thu 1:00-2:50pm (CRN 44169)
(register for *one* of these)

Instructor Emily Dumas <ddumas@uic.edu>
Office hours MWF 1:00-1:50pm
Office <https://uic.zoom.us/my/daviddumas>
Note: Office hours begin shortly after lecture, but use a separate zoom link!

TA Jennifer Vaccaro <jvacca4@uic.edu>
Office hours Tue & Thu 3:00-4:00pm
Office <https://uic.zoom.us/my/jvacca4>

2. COURSE CONTENT

This course is a second semester of study in introductory computer science, designed for students who have completed CS 107, CS 109, CS 111, or MCS 260.

In this course we will focus on learning the Python programming language more deeply, including the use of popular add-on modules for API development, databases, and data science. We will also cover some fundamental data structures and algorithms and their implementation in Python.

The course is broken into units, most of which are planned to take about a week of class time. A list of units can be found on the course web page. As the semester progresses, a more detailed schedule of the topics for upcoming lectures will be posted.

3. PREREQUISITES

- Grade of C or better in MATH 180 and grade of C or better in MCS 260; or grade of C or better in CS 107 or CS 109 or CS 111; or equivalent.

Note: If you lack the prerequisites for MCS 275, your registration in the course may be canceled at some point. I do not control this process.

4. SCOPE OF THIS SYLLABUS

There are two sections of MCS 275 in Spring 2021. While these sections are of course very similar, they are not identical in schedule, policies, etc. This syllabus only applies to the **MWF 12pm section with instructor Emily Dumas**.

5. TEXTS

There are no required textbooks. I do not recommend purchasing any textbooks. There are two optional texts published by O'Reilly that can be accessed online, for free, by anyone with a UIC email address. To access these books, there are two steps:

First, you need to log in to the O'Reilly technical library using your UIC netid. To do this, open the following link:

<https://www.safaribooksonline.com/library/view/temporary-access/?orpq>

Then, in the dropdown menu to select your institution, choose "Not listed? Click here", which is at the top of the list. You will then be prompted to enter your uic.edu email address. Then, click the "Let's Go" button and follow any subsequent instructions.

Second, now that you are logged in, you can find and open the textbooks using the search feature of the O'Reilly technical library page. The direct links below will also work if you have already logged in:

- [Learning Python, 5th Edition, by Mark Lutz](#)
- [Python Cookbook, 3rd Edition, by David Beazley and Brian K. Jones](#)

The first of these (Lutz) dates from 2013 and hence is written to support the language we use in MCS 275 (Python 3) as well as an older language that we won't discuss (Python 2). Support for Python 2 ended on January 1, 2020.

In addition, there is an optional text on algorithms and data structures that is open source (available online to everyone, for free):

- [Problem Solving with Algorithms and Data Structures using Python Python, by Brad Miller and David Ranum](#)

6. HOW THE COURSE IS DELIVERED

This is a 100% online, synchronous course. This means that you must attend the course meetings at their scheduled times. When possible, we have taken steps to make it easier on students who need to miss a meeting on occasion, and we understand the unusual circumstances this year make this especially likely. Still, the class is designed around synchronous participation. If you know that you will need to miss a significant fraction of the course meetings, you should not take this section of MCS 275.

All course meetings will use the video meeting application [Zoom](#). Links to the course meetings are posted on the course web page.

When attending course Zoom meetings, we ask (but do not require) that you **please keep your video turned on**. Video is helpful because both verbal and nonverbal feedback from students can guide course staff and make the meetings more useful. Less use of video also tends to result in less attention and engagement. However, keeping video on is not a strict requirement, in part because we understand it may involve incidentally sharing images of living and working spaces, and that this may be uncomfortable for some students. Students are free to use virtual backgrounds, and encouraged to do so if it makes the use of video more comfortable.

Lectures (MWF, 50 minutes) will be recorded and posted to the course web site for students to review. These videos will only be available to students registered for the course and course staff; they will not be shared publicly. Lecture slide presentations will also be available for students to view and download.

Discussion meetings (Tue or Thu, 110 minutes) will be held in Zoom as well. It is important to **come to discussion ready to work**, joining the zoom call from a device where you can develop and run Python code, as well as share your screen to show your work to others.

Discussions will *not* be recorded. Recording meetings that are primarily focused on student work tends to make students less willing to ask questions and participate, and these are essential discussion components.

To join course meetings, students must use the Zoom account that the University has already created for them, linked to their @uic.edu email address; see the course web page for help with Zoom.

7. IMPORTANT DATES AND DEADLINES

Fixed dates:

Jan 11	Mon	First day of class
Jan 18	Mon	No meetings (Martin Luther King Jr. day)
Jan 22	Fri	Add/drop deadline
Feb 5	Fri	Project 1 due at 6pm Central
Feb 26	Fri	Project 2 due at 6pm Central
Mar 19	Fri	Project 3 due at 6pm Central
		Late drop deadline
Mar 22-26	Mon-Fri	No meetings (spring vacation)
Apr 23	Fri	Project 4 due at 6pm Central
Apr 30	Fri	Last day of class
May 11	Tue	Deadline for instructor to submit course grades
May 17	Mon	Course grades become available on my.uic.edu

Recurring:

- After the first week, **quizzes are due every Tuesday at Noon central time**, unless a schedule change is announced. Quizzes 1, 2, 3, 4, and 5 were made available 24 hours before their deadlines. Starting with quiz 6, quizzes will be posted 48 hours before the deadline. Thus it will be important to set aside some work time outside of class each week between Noon on Sunday and Noon on Tuesday.

8. TYPES OF COURSE WORK

The course work consists of weekly worksheets (which students work on in discussion meeting), weekly quizzes, and four coding projects. These factor into the final course grade as follows:

- 45% of course grade: Weekly quizzes
- 45% of course grade: Programming projects
- 10% of course grade: Discussion participation

The exact formula for computation of your final grade is given in [Section 8.6](#).

Each of these types of course work is discussed in more detail in a subsequent section.

8.1. Worksheets. A central component of Tue/Thu discussion meetings will be students working in small groups on a worksheet of problems and coding exercises that review and expand on the lecture material. The worksheets will be posted to the course site before the discussion meeting.

Worksheets are not collected or graded, but they are probably the single most important type of work students complete in the course. They are also an important part of the way your discussion participation

grade is determined (see [Section 8.5](#)). It is not expected that students will do well on projects or quizzes without the regular practice provided by the worksheets.

Collaboration on worksheets is allowed, and in fact is strongly encouraged.

It is not expected that students will complete the worksheet in the discussion meeting, though we expect they will make substantial progress on it. Finishing the worksheet on your own time (optionally in collaboration with classmates) provides important additional practice.

A student who misses a discussion meeting for any reason should still complete the worksheet.

8.2. Quizzes. There will be a weekly online quiz, to be taken outside of class. The quiz questions will be posted on Blackboard. Answers are submitted by uploading python files to Gradescope, which is accessed through a link on the course web page.

Quizzes will be posted at Noon on Sundays and will be due 48 hours later (Noon on Tuesdays).

(This reflects a policy change that applies starting with Quiz 6. Earlier quizzes gave only 24 hours to work.)

Once in each calendar month (January, February, March, April) a student can ask to be excused from a quiz with no explanation. In this policy, a quiz is considered to belong to the month in which its deadline falls, and so different months will contain different numbers of quizzes. A request to be excused from a quiz under this monthly excuse policy must:

- Go to the course TA, by email
- Be sent before the quiz deadline

If you are excused from a quiz, you should not submit any work on that quiz on Gradescope. If you do, then the grade for your partial work will appear in the Blackboard gradebook, despite the fact that your excusal is recorded and is applied to your grades. This is a limitation of the integration between Blackboard and Gradescope. If you are unsure about whether you've been excused from a specific quiz, ask your TA.

The two lowest quiz grades for each student will be dropped. This happens after dropping all quizzes a student has been excused from. See [Section 8.6](#) for more details on the formula for the course grade.

Collaboration is not permitted on quizzes, and the quizzes are “closed book”. Texts and other resources (including online references) are not to be consulted, unless a quiz gives specific instructions otherwise.

Each quiz is graded in two ways: First, an automated grading system will perform some basic checks and assign a score. Later, course staff will manually check the submission for correctness and compliance with the course's coding standards (see [Section 8.4](#)), assigning a second score. The sum of the two scores will be the final quiz score. The score from manual review will account for most of the points on the quiz.

8.3. Projects. Four coding projects will be assigned during the semester. These will be substantial projects that students work on over a longer period, writing a program or set of programs to meet given specifications. These specifications, the *project descriptions*, will be posted to the course web site, and will be quite detailed. Writing a program that meets detailed specifications is an important skill that this course seeks to develop.

Projects will be submitted using Gradescope. The due dates for the projects are listed in [Section 7](#) above. Once a project description is published, the deadline can also be seen in Gradescope.

Students are strongly encouraged to start working on projects as soon as possible once the description is posted. The projects are not designed to be possible to complete with a few days of concentrated work just before the deadline.

All four projects will count toward a student's final grade; that is, no low scores will be dropped.

Each project is graded in two ways: First, an autograder runs a series of automated tests to see whether the submission meets the requirements set out in the project description (in several test cases). The results of these automated tests will account for most of the project score. (Exception: in the more open-ended Project 4, the autograder will account for a smaller portion of the score.) Students can view the autograder report shortly after submission, and can use the results to revise and resubmit their project (before the deadline).

There is no limit to the number of submissions, but only the last submission received before the deadline will count toward the project grade. As a result it is highly advantageous to make the first submission well before the deadline, to allow time to debugging.

Second, a manual code review will look for good coding practices, sufficient comments, etc., including checking for compliance with the course's coding standards (see [Section 8.4](#)) and any additional rules given in the project description. A score will be assigned during this manual review which will account for a small part of the overall project score. Course staff will provide feedback at this stage, to give students suggestions for improvement in future projects. Keep in mind that manual code review will *not* involve changing any autograder scores. This means that you will already know a significant part of your project grade as soon as you submit your project for the last time and get the autograder report.

Collaboration is not permitted on projects 1–3. Students may consult the course texts and the lecture slides or videos when working on projects 1–3, but may not consult any other resources except when explicitly allowed by the project description. Each student must be the sole author of the code they submit for projects 1–3; copying code from online resources or from other students constitutes academic misconduct.

Project 4 permits use of online and offline resources and consultation with other students, but requires carefully citing your sources. See the project 4 description for details.

The project deadlines are absolute unless an extension is granted. Thus, for example, if a student submits a project one minute late and does not have an extension, they will receive no credit. On the other hand, a request for a short extension will be granted if a reasonable explanation is given, and if such requests are not frequent. See [Section 11](#) for more detail on the policy regarding extensions and missed or late work.

8.4. Coding standards. Code submitted for a grade in MCS 275 must follow some basic formatting rules in order to be eligible for full credit. These rules are collected in a **coding standards** document that is available on the course web page. The rules encourage good coding practices and make programs more readable.

8.5. Discussion participation. *Note: This section describes the attendance policy for MCS 275.*

Each student in MCS 275 is registered for a weekly discussion meeting (110 min, on either Tuesday or Thursday). It is essential to attend these sessions in their entirety, and to arrive ready to work on Python code. This means joining from a device that you can use to write and run code, and to sharing your screen in the Zoom call in order to show your work to others or collaborate.

The work completed in discussion is not graded directly, but **each student will receive a grade for their participation in each discussion meeting**. Specifically, the TA will assign each student a participation score of 0 or 1 for each meeting based on whether or not they attend and participate meaningfully in the activities. These scores are the sole discretion of the TA.

Students who know they will miss an upcoming discussion must ask their TA to be excused from the participation grade for that meeting, and should give a brief description of the reason for the request. When received in advance, such requests will be granted as long as they are not frequent. If a request of this type is received after the discussion meeting, it will be considered under the course policy on missed or late work [Section 11](#).

8.6. Course grade computation. At the end of the semester, the course grade percentage is computed as follows:

- Each quiz score and project score is converted to a percentage; unsubmitted projects or quizzes are considered as 0%
- The list of quiz percentages is modified as follows:
 - Any quiz from which the student was excused is removed
 - Then, the two lowest remaining quiz percentages are removed
- The remaining quiz percentages are averaged to obtain a *quiz average*
- All project percentages are averaged to obtain a *project average*.

- The list of discussion participation grades is modified by removing any discussions from which the student was excused, and each of the remaining participation scores is converted to a percentage (either 0% or 100%).
- All of the remaining discussion attendance percentages are averaged to obtain the *attendance average*.
- The final course grade is computed by the formula

$$0.45 \times (\text{quiz average}) + 0.45 \times (\text{project average}) + 0.10 \times (\text{attendance average})$$

Starting a few weeks into the semester, a running indicator of the current quiz, project, and overall averages will be shown in the Blackboard gradebook. However, this running average will only be updated at certain times, approximately once per week.

When final course grade percentages are available, they will be converted to letter grades according to the following scale:

- A = 85% – 100%
- B = 75% – 84.9999%
- C = 65% – 74.9999%
- D = 55% – 64.9999%
- F = less than 55%

Under very unusual, unexpected circumstances, I reserve the right to make minor changes to this scale that make it more generous. The overwhelming likelihood, however, is that the scale above will be applied with no change, and students should not pin their hopes for a certain final grade on the possibility of such modification.

Since it is a common student question, I will point out that the scale above does not involve any rounding, so for example a final percentage of 84.95% corresponds to a grade of B.

9. COMMUNICATION WITH COURSE STAFF

Email is the only way to communicate with course staff outside of course meetings, office hours, or scheduled appointments. Please only write to course staff from your @uic.edu email address.

The instructor will usually respond to email within 24 hours, and often much sooner. Response over a weekend may be slower.

Keep in mind that questions received in the last couple of hours before a course deadline (for a quiz or project) often cannot be answered in time to help you with your work.

10. COMMUNICATION WITH OTHER STUDENTS

A discussion forum will be provided for use by everyone associated with the course. Watch the course web site for announcements about this.

11. POLICY ON MISSED OR LATE WORK

The sections above concerning Quizzes, Projects, and Discussion Participation describe some standard policies that are in place to handle missed or late projects, an occasional request to not take a quiz, or a discussion meeting that you cannot attend. These policies require notification before the deadline and have certain limits (e.g. one quiz per calendar month). This section describes the policy that applies when those conditions are not met, e.g. when you ask for an extension or excuse after the deadline has passed.

We understand that emergencies happen, and that circumstances outside the course can sometimes interfere with a student's ability to complete the work on time. Medical emergencies are one example of this, but changes in work or family circumstances are also equally valid reasons to request an extension or excuse.

Students in MCS 275 may contact me (the instructor) to request an extension or to ask to be excused from some course work; such a request should indicate the scope (which assignment, how long, etc.) and provide a

brief description of the reason for the request. **When requesting an extension, do NOT include documentation or other personal information unless it is requested.** Requests of this nature remain confidential.

In my experience (over a decade of teaching at UIC), *students whose circumstances would easily justify an extension of this type are often very hesitant to request it.* It is unfortunate when an extension policy only benefits those who need it least, and therefore, my advice to students who are missing deadlines due to difficult circumstances is simple: Please contact me.

12. ACADEMIC HONESTY

With the exception of project 4, everything you submit for a grade in this course must be entirely your own work. You are also not allowed to give or receive assistance on graded work in MCS 275, except from course staff, unless that is explicitly allowed by the assignment instructions.

Here are some examples of activities that violate the rules in MCS 275 and hence constitute academic misconduct. Keep in mind this list is not exhaustive.

- Sending your code for a quiz or project 1, 2, or 3 to another student to submit as their own, or to use as a reference or guide as they work on the assignment
- Searching the internet for answers to a quiz problem, or a solution to project 1, 2, or 3
- Asking for someone else to solve quiz problems or part of project 1, 2, or 3 in an online forum or commercial service
- Asking an instructor or TA in another course a question and using their answer as a solution to a problem in MCS 275
- Submitting work for Project 4 that is not entirely your own without giving proper credit to your sources

Most forms of academic misconduct are easy to detect. **In MCS 275, we use automated tools as well as manual review to detect cheating.** For example, we can easily tell if two pieces of code differ by changing variable names, adding and removing comments and indentation, and other common superficial evasion techniques. If you are ever tempted to cheat, please do not take the risk! Instead, contact the course staff and discuss what you are struggling with.

Any incidents of academic misconduct will be reported to the Dean of Students office and handled under UIC's **Student Disciplinary Policy** (<https://go.uic.edu/DisciplinaryPolicy>) for investigation, hearings, and possible sanctions. No warning will be given in advance. The penalties for academic misconduct are typically quite severe.

Many students find it helpful to do course work in a team or study group. Please do this, but only for the elements of the course where collaboration is allowed. For example, if you don't complete the worksheet in the weekly discussion meeting, finishing them in a group study setting is an excellent idea.

13. UNIVERSITY POLICIES

UIC requires every syllabus to mention some university policies; there is nothing specific to MCS 275 here.

13.1. **Academic deadlines.** The UIC academic calendar can be found at:

<http://catalog.uic.edu/ucat/academic-calendar/>

In particular this calendar includes the deadlines for adding and dropping courses.

13.2. **Disability accommodation.** The University of Illinois at Chicago is committed to maintaining a barrier-free environment so that students with disabilities can fully access university programs, courses, services, and activities. Students with disabilities who require accommodations for access or participation in this course are welcome, but must be registered with the Disability Resource Center (DRC). Students may contact the DRC at 312-413-2183 (voice) or 312-413-0123 (TTY). Further information is available from the DRC web page (<http://drc.uic.edu/>).

13.3. **Religious holidays.** The UIC Senate Policy on religious holidays (approved May 25, 1988) is as follows:

“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.”

The University Holidays and Religious Observances calendar can be found at:

<http://oae.uic.edu/religious-calendar/>

14. REVISION HISTORY OF THIS DOCUMENT

- 2021-04-13 Edits to reflect more permissive rules and open-ended structure of project 4
- 2021-02-24 Add optional text (Miller and Ranum)
- 2021-02-17 Policy change: Quizzes will appear 48 hours before deadline, starting with Quiz 6
- 2021-01-11 Add Vaccaro office hours and subsection about coding standards
- 2021-01-08 Initial publication