

CS 105L: Intro to Computer Programming

Fall 2018

Instructor:

Soraya Abad Mota, PhD (email: soraya@cs.unm.edu)
Office: Farris Engineering Center 2040 Phone: 277-3052
Office hours: Thursday 11:00 am - 12:30 pm and 3:30-5:00 pm;
Some Wednesdays 3-5 pm;
by email, and by appointment.

Lectures Tuesday and Thursday 9:30 - 10:45 am, CEC 1041

Lab Sections: (with schedule, Grader name, email, and office hours)

001 F 3:00-4:15pm	Steven Chavez	schavez572@unm.edu	F 1-2pm (FEC2000)
002 R 3:30-4:45pm	Charles Habermehl	chabermehl@unm.edu	
003 R 12:30-1:45pm	Tommy Manzanares	tmanzanares@unm.edu	
004 R 2:00-3:15pm	Tyler Fenske	duelz55@unm.edu	R 3:30-4:30 (FEC2000)
005 T 4:00-5:15pm	Sophia Secrest	ssecrest21@unm.edu	T 3-3:50 pm (FEC2000)
006 R 11:00-12:15	Brandon Harrington	bdharrington0@unm.edu	
007 M 4:00-5:15pm	Steven Chavez	schavez572@unm.edu	
008 W 10:00-11:15am	Tony Nguyen	tonguyen@unm.edu	
009 F 10:00-11:15am	Alan Shen	alshen@unm.edu	

Mandatory “Textbook” and resources

1. *zyBook specially prepared for this class.*

A zyBook is interactive online material that the students acquire directly at the site indicated below. This provides access to material on fundamental programming concepts and on Python. Each student must follow these steps to obtain the material.

- (a) Sign in or create an account at learn.zybooks.com
- (b) Enter zyBook code: UNMCS105LAbadMotaFall12018 you will register for the same section you are registered for this class in UNM.
- (c) Subscribe

The assigned work on this platform is worth 10% of the final grade.

2. The official Python site is:

<https://www.python.org>. There are a Python Reference Manual and a tutorial in this site, which are good references for the language.

3. A less formal Python Reference Manual which might be more readable can be found in: <http://marvin.cs.uidaho.edu/Teaching/CS515/pythonReference.pdf>

Don't be overwhelmed by the amount of material in Internet about Python, sources 1 to 3 above, are more than enough for this course. Concentrate on practising and ask questions during office hours, don't go searching for everything in your favorite search engine.

Course Description

The UNM catalog says about CS-105L: "Introduction to Computer Programming is a gentle and fun introduction. Students will use a modern Integrated Development Environment to author small programs in a high level language that do interesting things. "

Almost every person interacts with a computer program several times a day. All professionals are required to have some knowledge of computers as users. Some professions go even further to ask new employees to be able to write computer programs. If you are planning on being a CS major and have no previous exposure to computer programming or want a disciplined approach to it, this is the course for you. If you have prior experience, you might want to start with CS152L. If you are a non-CS major, your profession might require some computer programming skills, so this is also the course for you.

Our approach is student-centered and we work toward specific objectives. At the end of the term, the student should be able to:

1. design computer solutions to simple problems;
2. explain how are computer solutions designed;
3. define basic programming constructs and demonstrate fluency in working with conditional control flow, looping structures, and procedural programming techniques;
4. write programs to solve simple computer problems in a high-level programming language.

The following learning outcomes are also expected:

1. Acquire and be able to define and use precisely some terms of computer programming.
2. Establish the foundations of computer programming as the building block for becoming a "good programmer". There is a set of good practices, habits, skills, related to being a good programmer. Involves characteristics of the product (the program): clear (easy to understand), flexible (easy to modify to make it do something slightly different, or to extend it to add more functionality).

3. Abstract fundamental concepts behind the programming language constructs that will allow the student to learn a new programming language fast, reducing the learning curve of the language. As opposed to strictly learning the syntax and constructs available in a language without discovering what is the abstraction behind it.

The high-level language is *Python*, the student will learn the basic syntax and rules of Python and will practice it extensively during the term. If you have no previous programming experience, this is the course for you.

1 Weekly topics

The general distribution of material covered over the semester follows. A more detailed calendar will be provided.

Week	Topics
1	Introduction to problem solving with computers. Programming Basics: Variables. Assignment. Intro to Python.
2	Operators and Expressions. Types in Python. Branches. Branching in Python.
3	The if statement. Loops in general and loops offered by Python.
4-5	More Loops.
6-8	Arrays. Functions. Strings.
9	Review and Midterm.
10-11	Lists and dictionaries. Classes.
12-13	Troubleshooting and Exceptions.
14-15	Modules Files. Software Topics. Searching and sorting algorithms.
16	Review and Final

2 Evaluations

Student performance will be measured through the following:

- Activities from the zyBook configured for this class (10%)
- Programming Assignments (55%): about seven (7) programming projects of varying degrees of difficulty.
- Midterm (15%): Thursday, October 18, 2018
- Final (20%): Tuesday, Dec. 11, 2018 as scheduled by UNM

Late projects/assignments will not be accepted without prior permission.

Grading: The final grade of a student in the course will be calculated by weighing each exam and assignment score obtained by the student, according to the percentages described above. This numeric final grade (in a scale of 100) is converted into a letter final grade (A+,A,A-,B+,B, etc.). Since the conversion process (from number to letter) is left to the instructor to decide, the student should not compute their letter grade according to their own or other faculty's conversion table. In particular, in this class we use the average and standard deviation to determine the range for each of the 4 letter grades. For example, scores greater than average score + standard deviation are in the A range. Scores between the average score and average score + standard deviation are in the B range. Scores between the average score - standard deviation and average score are in the C range.

3 UNM learn platform

For all announcements and submissions of assignments we will use UNM learn available with your Net ID at learn.unm.edu. When you register for this class your UNM id is automatically included in the course platform list and this will allow you access to all the course materials. There will be no other formal website for this class. Therefore, students should be up to date with the announcements and material published in this platform. The programming assignments will be submitted through Learn with the exception of the zyBook activities which are to be done in the platform and will be automatically graded.

Communication with the instructor and the teaching assistant will be done via email, if the issue is individual. If the question or comment pertains to the whole group of students in the class, it should be done through the discussion board in Learn.

4 Course and UNM Policies

This section contains the most important policies students are expected to comply with. They are classified into general course policies and specific policies about: assignments, academic honesty, copyright issues, ADA, and Title IX.

4.1 General Course Policies

1. When sending email to the instructor or graders, please include the word CS105 in the subject line with a meaningful subject matter. Failure to identify your message with the class number, will result in a delayed response or no response at all.
2. For all direct written communication with the instructor, please use only the `soraya@cs.unm.edu` address with CS105 in the subject.

3. No make-up or extra credit assignments or tests will be given. In general, the dates of the exams and the due dates for assignments will be announced well in advance.
4. If you must miss the midterm, your final exam grade will count for that midterm grade as well.
5. Requests for regrades of assignments must be made within two weeks from when the assignment is returned/graded. Assignments will not be regraded after that point.
6. Assignments and tests for which a regrade is sought will be regraded in their entirety. Therefore the new grade could be lower or higher than the original grade (before regrading).
7. This course falls under all UNM policies for last day to drop courses, as described at <http://www.unm.edu/studentinfo.html> and in the UNM Course Catalog. Please see the UNM academic calendar for course dates, the last day to drop courses without penalty, and for financial disenrollment dates.
8. Any requests to drop the class or change grade mode (e.g. audit, CR/NC) with instructor permission must be made on or before the last regular class/lab meeting. Such request made after this date will not be approved except in the case of documented, extraordinary circumstances.
9. Working together and helping one another on all projects (but not on exams) is highly encouraged. This includes discussion of *project specification*, *algorithms*, *data structures*, and *test cases*. **It does not include code, i.e. you may not share code.** Each person must author his or her own code.

4.2 Submitting Assignments

All zyBook activities must be performed in the zybook.com platform, grades obtained there will be transcribed to learn by the instructor and graders. All assignments excluding the zyBook activities must be submitted to UNM Learn in order to receive credit for them. If Learn is down, you may e-mail the assignment to the grader of your section in order to prove it was done on time. However, it must be inside Learn before you can receive credit for it.

It is your responsibility to make sure the correct file is submitted to Learn before the deadline. Always double-check your submissions. If you realize you accidentally attached the wrong file, immediately resubmit the correct file with a note explaining the error.

Assignments are due at midnight. (Technically, the deadline in Learn is 11:59PM. The graders will accept submissions up to 12:15 or so to account for variations in clocks, network hiccups, etc.) You are permitted to submit multiple times and the most recent on time submission will be the one graded, so feel free to submit partial solutions as you complete milestones.

Pay attention to deadlines! Assignments are not always due on the same day of the week. You will generally have at least a week for each one, but some larger assignments may give you more time.

4.3 Late Assignments

Ideally, all assignments will be completed and submitted well before the deadline. However, sometimes this will not be possible due to illness, technical problems, other classes, etc. To help you learn how to manage your programming deadlines, each student is given a pool of five (5) extension days they may use during the semester, limited to at most two days for any given lab/project assignment.

- Extension days may *not* be used for online quizzes or surveys, since they generally will be discussed in the next lecture.
- Extension days may *not* apply to the first lab assignment, which is usually trivial.
- You may use a maximum of two extension days for a given assignment. I want to be able to discuss the solution to an assignment within a reasonable amount of time after the deadline.
- You have a total of five extension days over the course of the semester. It is up to you if you want to turn in two assignments two days late, five assignments one day late, or some other allowable variation. You do not have to use them at all.
- Weekends count as days, too, so if an assignment is due on Friday and you do not turn it in until Monday, that would use 3 extension days.
- The minimum unit of “lateness” is one day, in other words we do not count 12 hours as half a day or 6 as one fourth. Regardless of how many hours late, on one day, you submit the assignment, that counts as one full day.
- Use your extension days wisely. If you use all of them on 20 point assignments early in the term, you won’t have any left to spend on a difficult 100 point assignment later on.

4.4 Academic Honesty

The university policy on academic honesty is contained in the Pathfinder; you should review this policy if you are unfamiliar with it. Any academic dishonesty will result in an automatic zero (0) on the offending assignment and could entail other consequences, for example, be referred to the UNM Dean of Students for further disciplinary action as they deem appropriate. More than one offense on the same semester will lead to an F as the final grade in the class.

As a general rule, any work you hand in for this class must be your own original work. Do not, under any circumstances, share source code, writings, or assignments with your classmates without my explicit prior approval. Students can, however, verbally discuss assigned readings, written assignments, and programming assignments outside of class, or using online mechanisms (email, Piazza, etc) that are the general equivalent of verbal communication. For example, feel free to describe verbally over email generally how you attacked a particular problem in a programming assignment.

Any conversation or sharing of information that moves beyond simple verbal discussion and begins discussing or sharing specifics of source code or mathematical operations, however, is potentially a violation of academic honesty requirements. If you are unsure about whether or not you can share a particular piece of information, please consult with Prof. Abad-Mota prior to sharing it.

As examples, the following, are clearly not acceptable and will be considered cheating: copying another person's code; co-developing code with someone else; mailing your code to another person; using the Internet (e.g. StackOverflow) to find a solution to the problem; making your files readable so another person can copy them; reading another person's files; using another person's listing (taken from the trash, for example); having another person write a portion of your code for you.

4.5 Copyright issues

All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course.

4.6 Title IX

Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus, especially the LoboRESPECT Advocacy Center and the support services listed on its website (<http://loborespect.unm.edu/>). Please note that, because UNM faculty, TAs, and GAs are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator. For more information on the campus policy regarding sexual misconduct, please see: <https://policy.unm.edu/university-policies/2000/2740.html>.

4.7 ADA

In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 for additional information.

CS105L: Detailed tentative Calendar for Fall 2018 semester

Week	Tuesday	Thursday	LAB
1 August	21 Motivation & Introduction (L1)	23 Computer Programming Basics (L2)	(Lab 0) Meet your grader Quiz 0 due 8/24
2 Aug	28 Introduction to Python. Operators and Expressions (L3)	30 Types. Variables and assignment. (L4)	(Lab 1) zyActivity/Quiz #1 due
3 September	4 Labor Day Holiday	6 Branches. Branching in Python (L5)	(Lab 2) PA#1 due
4	11 Loops. Loops in Python. (L6)	13 Loops(2) (L7)	(Lab 3) zyActivity/Quiz #2 due
5	18 More loops (3) (L8)	20 More loops(4) (L9)	(Lab 4) PA# 2 due
6	25 Arrays (L10)	27 Arrays (2) (L11)	(Lab 5) zyActivity/Quiz #3 due
7 October	2 Functions (L12)	4 Functions(2)	(Lab 6) PA #3 due
8	9 Strings	11 Fall break	Fall break
9	16 Review for Midterm	18 MIDTERM	Review for Midterm
10	23 Lists	25	(Lab 7) zyActivity/Quiz #4
11 Oct/Nov	30 Classes	Nov. 1	(Lab 8) PA #4 due
12 November	6 Troubleshooting	8	(Lab 9) zyActivity/Quiz #5
13	13 Exceptions	15	(Lab 10) PA #5 due
14	20 Software Topics	22 Thanksgiving	Thanksgiving Holiday
15 Nov	27 Searching & Sorting Algorithms	29	(Lab 11) PA #6 due
16 December	4 Review for Final	6 Review for Final	(Lab 12) PA #7 due
17 Finals Week	11 FINAL EXAM 7:30-9:30 am (CEC 1041)	13	14 Friday