CS 105L: Intro to Computer Programming
Fall 2020 - Remote Schedule Modality

Instructor:

Soraya Abad Mota, PhD   (email: soraya@cs.unm.edu)

Office: Farris Engineering Center, room 2040, phone: 277-3052

Virtual Office hours: Tuesday and Thursday 11:00 am - 12:30 pm

via zoom with the link in the left panel of the Learn site for this class

Lectures   Tuesday and Thursday 9:30 - 10:45 am via zoom, link in the left panel on Learn

Lab Sections: (Section number, schedule, Grader name, email)

001 F 3:00-4:15pm	Jeff Sharpe	jeffunm@unm.edu
002 R 3:30-4:45pm	Jeff Sharpe	jeffunm@unm.edu
003 R 12:30-1:45pm	Aislinn Handley	ahandley@unm.edu
004 R 2:00-3:15pm	Jeff Sharpe	jeffunm@unm.edu
005 T 4:00-5:15pm	Joseph Barela	jobarela@unm.edu
006 R 11:00-12:15	Alan Shen	alshen@unm.edu
007 M 4:00-5:15pm	Joseph Barela	jobarela@unm.edu

Class meets for **two lectures and a lab session weekly** for a total of 175 minutes (2 hours and 55 minutes) for fifteen weeks during the Fall 2020 semester. **Attendance is mandatory for both lectures and labs**. This is a three (3) credit-hour course. Students are expected to complete **a minimum of six (6) hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week during 15 weeks**.

The two lectures are the same for everyone, these are synchronous Tuesday and Thursday at 9:30 am via zoom with the instructor, Dr. Soraya Abad-Mota.

Students have their lab sessions in different days and times, see the schedule above with the section number, the schedule, and the name of the grader assigned to that section. Each lab section is smaller (usually not more than 20 students) and has a grader (who is an advanced CS student). The grader guides on exercises and helps with assignments. Each student is expected to work on the topics of the CS105L course during their lab sessions. Lab sessions will also be remote synchronous.

Mandatory "Textbook" and resources

1. ***zyBook specially prepared for this class.***
   A *zyBook* is interactive online material that the students acquire from the UNM bookstore or directly at the site indicated below. This provides access to material on fundamental programming concepts and on Python. To register for the zybook and to obtain the material directly from them, follow these instructions:

   (a) Sign in or create an account at `learn.zybooks.com`

   (b) Enter zyBook code: `UNMCS105LAbadMotaFall2020` you must register for the same section you are registered for this class in UNM.

   (c) Subscribe

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 2 to 4 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.

1 Course Description

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.

What to expect from this course?
In this course you will be able to use precise terms associated with computer programming. You will become familiar with the building blocks for computer programming and what it means to be a "good programmer". You will also learn fundamental concepts behind the programming language constructs that will allow you 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.

1.1 Goals and Learning Objectives

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."

These are the general *goals* for this class that will help students acquire the skills for what is stated in the catalog description.

G1: Understand what is a computer system and what are computer solutions.

G2: Learn how to analyze problems that are subject to be "solved" by a computer program.

G3: Learn how to write computer programs in a high-level programming language.

The high-level language is *Python*, you 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.

Our approach is student-centered and we work toward specific *learning objectives*. We will use active learning techniques in the classroom to help you attain the goals. At the end of the term, you should be able to:

LO1: list and define the components of a *computer system* (the context);

LO2: design computer solutions to simple problems;

LO3: explain how are computer solutions designed;

LO4: define basic programming constructs and demonstrate fluency in working with conditional control flow, looping structures, functions, and procedural programming techniques;

LO5: write programs to solve simple computer problems in a high-level programming language.

2 Assessments

In this course you will be evaluated based on the following:

- **Readings and Participation Activities from the zyBook** configured for this class, these will be done in preparation for the lectures and are due Tuesdays at 9:00 am, with the exception of the first week in which they are due on Thursday Aug. 22 at 9 am (10%)

- **Class participation** (individually and in group) (5%)

- **Programming Assignments with zyLabs (40%)**: about six (6), 1-2 weeks each of varying degrees of difficulty, their weight on the 40% is not equal.

- **Homework assignments with zyBook** (challenge activities and simpler zyLabs) (10%): about seven (7) of non-equal weight.

- **Midterm exam (15%)**: Thursday, October 1, 2020

- **Final Exam (20%)**: Tuesday, Dec. 8, 2020

Grading:

- Readings and participation activities in zyBook: automatically graded in binary (completed or not), no wrong answers possible. Invest the time, submit by deadline, and you'll get it.

- Class participation: class attendance and participation in the active learning activities.
  (A small percentage of absences is allowed up to 20% of the lectures/labs all together, approximately 9.)

- Programming assignments: automatic grade by zybook + **explanation and Q/A with grader in a lab session or a virtual meeting at a different time**.

- Homework assignments: automatically graded by zybook + explanation of how it was done (randomly picked)

See sections 2.3 and 2.4 for more details on the submissions of the assignments.

About the Final Letter Grade: 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.

I do not use a fixed scale; this is too rigid. An approximation to scales that I have used in the past is the following: below 40 is an F, less than 50 is the D range, 50 and up is the C range, 70 and

up is the B range, 85 and up is the A range. I use the average and standard deviation to determine the borders around C to find the C- and C+ ranges, around B to find the B- and B+ ranges, and around A to find the ranges for A- and A+.

2.1 From goals to assessments

The following table presents the learning objectives in relation to the goals they help attain and the assessments in which they are evaluated. This table is your *map to success.* The zyBook chapters is this table are not final and will be updated.

Goal	Learning Objective	Assessments
G1: Computer System	List and define the components of a *computer system*	Zybook: chapter 1, Homework 1, Midterm exam
G2: Analyze problems	Define what is a *computer solution* Give examples of problems subject to a computer solution Decompose problems into input, output, and procedure (algorithm)	Zybook: chapter 1, Homework 1, Midterm exam Zybook: chapter 2, Homework 2 Zybook: chapter 2, homework 3, PA 1, PA2
G3: Write programs	Define basic programming constructs	Zybook: chapter 4, Homework 4, Midterm and Final
	Demonstrate fluency using *conditional control flow*	Zybook: chaps. 5 and 6, Homework 5
	Demonstrate fluency using loops, arrays, and strings	Zybook: chaps. 7, 8, 12, and 9, homework 6 , PA 3, PA 4, Midterm and Final
	Demonstrate fluency in using procedural programming techniques;	Zybook: most chapters, homework 5, PA 5, PA 6
	Demonstrate fluency using functions;	Zybook: chaps. 10 and 11, homework 6, PA 5, PA 6, Final exam

2.2 Use of the UNM Learn and zyBooks platforms

For all announcements 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 Students should be up to date with the announcements and material published in this platform.

The assignments will be submitted or done in the zyBooks platform where they are automatically graded but students must explain their programs to their grader in order to obtain credit for each assignment. The grade produced by the platform is not enough to get credit. Each grader will mark the students who explained their programs competently and appropriately.

When students need to communicate with the instructor and the teaching assistant individually, they can attend their virtual office hours or use email. 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. Appropriate forums and threads will be created for each week's discussions.

2.3 Submitting Assignments

All zyBook activities must be performed in the zybooks.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.

2.4 Late Submissions

Ideally, all programming 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 dealines, 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 programming 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.

Late programming assignments will not be accepted without prior permission or agreement on the extension days to be used.

3 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. This section is long but very important, read it carefully. Ask questions as needed, don't wait until the end to read them, please read them now.

3.1 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. 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.

3. If you must miss the midterm, your final exam grade will count for that midterm grade as well.

4. 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.

5. 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).

6. 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.

7. 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. This policy might be modified depending on what UNM decides for this semester.

8. 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.

3.2 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 consequendes, 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.

3.3 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.

3.4 Respect the UNM Community by Preserving Health

You have the ability to prevent the spread of COVID-19 and to preserve the health of fellow students, your instructor, staff and the community by following UNM health protocols. The UNM Provost Administrative Directive on Mandatory Student Face Covering and Symptom Reporting of July 9, 2020 requires that all students on UNM-Main and UNM branch campuses wear face masks in the face-to-face classroom and on campus unless they have a specific mask accommodation (confidentially documented with the Accessibility Resource Center). UNM Provost Administrative Directive is consistent with Governor Lujan Grisham?s Public Health Emergency Order, as amended, and the Public Health Order of the New Mexico Health Secretary. It also requires daily participation in symptom screening through covidscreen, which will be sent via UNM e-mail. Please check Learn regularly for updates about our class and please check `https://bringbackthepack.unm.edu` regularly for general UNM updates.

3.5 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.

3.6 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.