



Syllabus-Spring 2023

Title of Course-Section:	CS 105L-501 (Intro. to Computer Programming)
Name of Department:	Mathematics, Engineering, & Computer Science
Instructor:	Andisheh Dadashi, Assistant Prof. of Mathematics
E-Mail:	andisheh@unm.edu
Class Meeting Days/Times:	No scheduled lecture
Credit Hours :	3 credit hours
Class Location:	Online (info on UNM CANVAS)
Office Location:	Online via Zoom (info on UNM CANVAS)
Office Hours:	Mondays and Tuesdays: 8 am to 10 am or by appointment

Note: The instructor reserves the right to change the syllabus at any point of time during the semester.

Get to know your instructor:

Andisheh Dadashi is an Assistant Professor of Mathematics and CS in the Department of Mathematics, Engineering, & Computer Science Division at the University of New Mexico-Valencia Campus. She received her Bachelor's degree in Mathematics and CS in Iran and completed her first Master's degree in Mathematics in India. Andisheh received a second Master's degree in CS from the University of New Mexico (UNM) in 2016 and is currently a Ph.D. candidate in the UNM Computer Science Department. Previously, Andisheh was a visiting Lecturer II at UNM-Gallup where she implemented the Critical Technology Studies Program (CTSP) from the main campus. At UNM-Gallup, Andisheh helped prepare student scholars for careers in the Intelligence Community (IC) and related national security careers. Andisheh now continues this work at UNM-Valencia where she helps interested students develop the knowledge, skills, and relationships necessary to successfully compete for IC careers. Her research interests include computational biology and genetics, and metabolic networks. Currently, Andisheh's research focuses on developing theory, computational approaches, and statistical tools to uncover mechanisms of rapid polygenic adaptation in response to environmental change.

To know **Andisheh** watch this video <https://youtu.be/t4ryQfdrSEo>

**** Email ****

When emailing me, in the subject of your email, please write down your course name, course number, and section number. For example, the subject of your email to me should be: **CS 105L-501**

You must only contact me with your **UNM e-mail**. Check your **UNM email frequently**. You are responsible for missing any announcement I send via email or posted on Canvas. Failure to identify your message with the class number, and not using your UNM email will result in no response at all.

What is Intro. to Computer Programming?

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. 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.

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Evaluation/Grading Methods

Your final grade in this class is based on the following components:

Class Assignments in the PowerPoint Slides	10 %
Quizzes (5)	40 %
Projects (5)	50 %
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Overall	100 %

Overall Grade and Letter Grade

Passing grade is 70% or better.

Overall Grades: pluses and minuses may or may not be added to letter grades at the instructor's discretion. Grades of A+ are not rare and will only be awarded for exceptional work.

Grade	From	To	Grade	From	To	Grade	From	To
A+	98	100	B+	88	89.99	C+	78	79.99
A	93	97.99	B	83	87.99	C	70	77.99
A-	90	92.99	B-	80	82.99	D	60	69.99

Learning Objectives and Outcomes

Pre-requisites/Co-requisites: 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.

Course Description Why do you need this course? 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.

Goals: The objective of the course is an understanding of the relationship between computing and problem-solving. We will be using Python to solve engineering and math problems.

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.

By the end of the course the student will be , 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.
5. Acquire and be able to define and use precisely some terms of computer programming.
6. 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).
7. 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.

Access to a reliable and fast internet connection is required. For the course we use Canvas <https://canvas.unm.edu> to navigate through the teaching materials and assignments, but students must also be able to navigate and use other online resources.

Students are required to download and install Python on their computer:

Why Python?

Python started out as a simple scripting language, but now it's one of the most popular programming languages.

Python is a 'high' level language.

Python is easy to read.

Python is an interpreted language.

All languages have a syntax to learn.

These are the rules by which you write your programs.

We must first learn these rules in order to use Python to solve problems.

Is Free for anyone.

Is mostly cross platform (File management is usually the only issue)

All the tools for python are free.

Python can run on a phone.

More resources to learn and examples than almost any other languages.

If you publish your code using Python then anyone in the world can run it, and probably understand what you are doing.

We must teach you the language of Python. Why Python? Why not Java, or C++? Because you will use Python to solve Mathematics, Statistics, and engineering problems.

How to download Python:

To learn how to install Python, Jupyter Notebook and other IDE, please, watch the following video that I recorded for you <https://youtu.be/XctjwKgChsY>

Also, please read the following:

Step 1:

First install Anaconda. It provides a fresh version of Python 3 that does not interfere with any other versions of Python that you may have on your computer, and it gives you one-stop shopping for all packages that are used in the book.

Visit <http://www.anaconda.com/download>

Instruction: Choose your operating system (Mac, Win, Linux, or ...), Choose Python 3.7, Download the installer.

Follow the detailed "Installation Instructions" . We suggest that you decline the option of installing Microsoft Visual Code at the end of the installation process. You do not need it for the book.

Step 2:

We will use Jupyter Notebook in the class and you must submit your assignments in Jupyter Notebook. If you download anaconda then you will have access to the Jupyter Notebook.

<https://jupyter.org>

You can use any IDE such as Spyder 3 and PyCharm CE IDEs (Integrated Development Environment) for coding in Python.

Spyder IDE is included in Anaconda therefore as long as you download Anaconda you have access to Spyder IDE. For PyCharm CE IDEs from JetBrains you can download it from the following website (use your unmc email to create an account for free access):

<https://www.jetbrains.com/pycharm/download/section=mac>

Student Instruction in the book (Page 7):

<http://horstmann.com/python4everyone/install.html>

Book: You do not need to purchase a textbook, but there is an online book available via IA that we will be following: **Book:** Python For Everyone (3rd Edition), Cay S. Horstmann, Rance D. Necaise ISBN: 978-1-119-49853-7.

The online book will be on Canvas via IA. Please, read the information regarding Inclusive Access. A student's grade is determined by points earned out of 100. The following sections give a breakdown of points; any changes in % or assignments will be based on class needs and communicated early.

- 5 Projects (**50%**)
 - 10% each
 - Projects are posted on Canvas
 - Approximately every two to three week
 - Projects must be written in Jupyter Notebook
 - Projects must be submitted online on Canvas before the due date
 - Project will be posted approximately 10 days before the due date

- 5 Quizzes (**40%**)
 - 8% each
 - One quiz per chapter
 - each quiz is timed (30 minutes)
 - You have only one attempt
 - There are 10 questions per quiz
 - Backtracking is NOT allowed
 - Quizzes are posted on Canvas
 - Quizzes must be submitted on Canvas before the due date
 - Quizzes will appear on Canvas 24 hours before it is due

- Class Assignments in the PowerPoint Slides (**10%**)
 - There are 10 Assignments in each PowerPoint Slides
 - 2% each
 - Answer the questions in the order that they are presented
 - Your answers must be submitted as a pdf file
 - Your submission file must be uploaded on Canvas before the due date

- Total = **100%**

Inclusive Access (IA):

Your course comes with Inclusive Access (IA) which means you will have a **discounted price** of the book using IA on Canvas. On the main page of this course on Canvas, you should find a section named Course material. After clicking on it you should see a link named RedShelf. After Clicking on RedShelf you must follow the instruction to access the Online Book.

Also, you should receive an email that contains instructions for inclusive access to the book via the RedShelf on Canvas. Please, read the email to gain more information regarding the IA.

Late Assignments

The due date for the assignments, quizzes and exams are very firm. All the assignments are open at the beginning of the semester therefore please manage your time wisely in order to prevent any delay. No late assignment is accepted unless in the event of a genuine emergency per instructor's discretion.

If you must miss an exam, you must contact your instructor a couple of days before the day of the exam in order to discuss a make-up test. Make-up tests will be given solely at your instructor's discretion and only in cases of well documented excused absences. If you miss an exam and do not contact your instructor immediately, you may be dropped from the course. No early exams will be permitted except in documented emergencies: flight reservations, weddings, vacations, birthdays, non-NCAA sporting events etc. are not considered emergencies.

Teaching Materials

Q. Where can you find the materials for this class? **Canvas** <https://canvas.unm.edu>

Q. Where do you find the projects? **Canvas**

Q. Where do you submit the projects? **Canvas**

Q. Where do you find your grade? **Canvas** (Gradebook)

Course information including this syllabus, and all the necessary materials and links, etc. will be available via Canvas.

Your Responsibility

EXPECTATIONS: Students are expected to conduct themselves in a polite, courteous, professional and collegial manner. Cell phones must be set on silent and be out of sight during class. No food or drink is allowed in the computer labs.

Time required for This Course: Plan to spend a minimum of 9 to 12 hours per week for this class. There is no guarantee you will pass if you dedicate this amount of time, you still need to learn the material and use your time wisely, but those who pass generally are the ones who spend the time needed to do the work to learn the material.

You are responsible for all material covered in this Syllabus and in class, in assigned readings, and on homework assignments. Not all material on tests will necessarily be covered in class but will be in the assignments. The use of cell phones, headphones, etc. is not permitted in class or exams.

According to the Code of Conduct as stated in the Policies and Regulations for UNM, student activities that interfere with the rights of others to pursue their education or to conduct their University duties and responsibilities will lead to disciplinary action.

This includes any activities that are disruptive to the class and any acts of academic dishonesty. Students are expected to behave in a courteous and respectful manner toward the instructor and their fellow students. Students may be dropped from a class for inappropriate behavior. For more information: <https://pathfinder.unm.edu/code-of-conduct.html>

Since we assume you are all adults, we will expect from you, respectful adult behavior. Engaging in disruptive or unruly behavior could result in your being asked to leave, at which time you will be counted absent and a referral will be sent to the Dean of Instruction. Continuing to behave in this way could result in your being dropped from the course. Disruptive or unruly behavior includes but is not limited to:

- texting or talking on your cell phone or Laptop at any time during class,
- continually talking with your neighbor when we are not working on a group activity,
- working on homework from another class,
- reading material or watching media on a mobile device not related to this course or at a time that is inappropriate,
- refusing to participate in the class activities.

Support!

If you have a documented disability, the Equal Access Services office will provide me with a letter outlining your accommodations. I will then discuss the accommodations with you to determine the best learning environment. If you feel that you need accommodations, but have not documented your disability, please contact Cheryl Dilger, the coordinator for Equal Access Services at 925-8910 or cdilger@unm.edu.

If you are struggling in this course, do not be afraid to ask for help!

- Office Hours: See my office hours listed at the beginning of this syllabus. “Office Hours“ Feel free to come by or log in for online office hours, or make an appointment to get help.
- Form study groups: You may work together with other members of our class on Canvas discussion board.
- Free Tutoring: The Math Center at Valencia campus has free tutoring and open labs. Call 505-925-8907 for more information. CAPS on main campus also provides tutoring for which I can get documentation. “LRC“
- Student Services: There are various services provided in our Student Services Department. Read about [Office of Equal Access](#). Also, we have a testing center, advising, and career placement available: Valencia Student Services

Academic Dishonesty

Having academic integrity is paramount to your success in any class. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment. Here is the link to the UNM Academic Dishonesty Policy: <https://policy.unm.edu/regents-policies/section-4/4-8.html>. **The policy states:** Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or who otherwise fails to meet the expected standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic Dishonesty is defined as:

“Academic dishonesty“ includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Cheating students will be prosecuted according to University guidelines. Students should get acquainted with their rights and responsibilities as explained in the Student Code of Conduct <https://grad.unm.edu/aire/academic-integrity.html>

UNM Valencia Title IX Representative

Title IX (9) Statement: In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg. 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>

Disabilities Policy: Office of Equal Access

Contact Office of Equal Access at 925-8560 to schedule an appointment. <https://valencia.unm.edu/students/advisement/equal-access-faqs.html>

The Center for Academic Learning

The Learning Center is open Monday – Friday with evening hours Monday – Thursday To schedule an appointment or for additional information call (505)-925-8907 <https://valencia.unm.edu/campus-resources/learning-commons/index.html>

UNM Valencia Registrar’s Office

Contact Registration Office by calling 925-8580 <http://valencia.unm.edu>

UNM Deadlines:<http://registrar.unm.edu/semester-deadline-dates/index.html>*And....* **Academic Calendar:**<https://hr.unm.edu/calendars>

Library

We have a library at UNM-Valencia. You should already know where the library is!

Topics

Topics	In detail
Programming Basics: Numbers and strings Strings	Introduction to problem-solving with computers. Intro to Python. Variables, Arithmetic, Number Types, Inputs, Input String Type, Concatenation and Repetition, Converting Strings to Numbers, Characters, Methods
Input and Output Arithmetic	User Input, Numerical Input, Formatted output Basic Arithmetic operations, Powers, Division and Remainder, Mathematical Functions
Decisions	If Statement, Relational Operators, Nested Branches, Booleans
Loops	While loop, For loop, Nested Loops
Functions	What is a function and why use them, Implementing functions, Parameter Passing, Return values
Lists	Creating, Accessing, Traversing, Operations
Sets	Creating, adding, removing, union, intersection, and difference.

CS 105L Schedule Spring 2023

Day of	CS 105L Schedule (subject to change if necessary)
	First day of semester: January 16 th & Last day of semester: May 13 th Final Exams: May 8 th to 12 th Holidays: Martin Luther King Jan 16 th & Spring break March 12 th to 19 th
Jan 17	Installing Python, and Introduction (Videos 00 & 01)
Jan 24	Basics of coding in Jupyter, Variables, reserved words, Boolean & ... (Videos 02 & 03)
Jan 31	Strings, indexing, modules, packages, methods & ... (Videos 04 & 05)
Feb 07	Dataset, reading & writing CSV & Txt files (Videos 06 & 07)
Feb 14	Data processing (Videos 08 & 09)
	Project 01/Quiz 1/In Class Assignment 1 are due on Feb 17 th at or before 11:59 pm
Feb 21	Visualization, Math and Numpy packages, Strings methods (Videos 10 & 11)
Feb 28	String & syntax formatting, Input & output, Dictionaries & lists (CS105-V-11 & V-12)
Mar 07	lists & tuples, (CS105-V-13 & V-14)
	Project 02/Quiz 2/In Class Assignment 2 are due on March 10 th at or before 11:59 pm
Mar 21	If conditional statement (CS105-V-15 & CS105-V-16)
Mar 28	While loop (CS105-V-17 & CS105-V-18)
	Project 03/Quiz 3/In Class Assignment 3 are due on April 03 rd at or before 11:59 pm
Apr 04	while loop with if condition & complex while loop (CS105-V-19 & V-20)
Apr 11	for loop & nested for loop (CS105-V-21 & V-22)
Apr 18	Review for and while loops
	Project 04/Quiz 4/In Class Assignment 4 are due on April 24 th at or before 11:59 pm
April 25	Basics of functions (CS105-V-23 & V-24)
May 02	Complex functions (CS105-V-25)
	Project 05/Quiz 5/In Class Assignment 5 are due on May 9 th at or before 11:59 pm