CS108L Computer Science for All

Instructors: High School: Mrs. Buda

College Instructor of Record: Elaine W. Clark

Course Website: http://cs4all.cs.unm.edu/cs108

Class: 4ᵗʰ period

Course Description:

CS108L — Computer Science for All is an introduction to Computational Science and Modeling. The class is a dual-credit computational science course open to high school students as well as college students. At School of Dreams, this is an on-campus class where all instruction takes place during the assigned class time and students should be present for this instruction. If a student misses a day of class, they are responsible for catching up using the online resources.

Course Learning Outcomes — At the completion of this course, students will be able to:

- Learn the basics of a programming language (NetLogo).
- Improve on logical problem-solving skill.
- Use agent-based models to conduct scientific experiments.
- Use programming skills in an interdisciplinary environment.

The above Learning Outcomes will be met primarily through the assigned interdisciplinary module projects. Each project will require students to create a program in NetLogo that solves a realistic problem as described in the project prompts. Students will then use their created Netlogo modules to conduct scientific experiments regarding the effects of initial conditions inputted on the model.

The course is offered to both College and High School students. High school students who successfully complete the class receive 1 high school credit and 3 UNM college credits. A 3-credit course at the university is equivalent to 9 to 12 hours of work per week (in-class and out-of-class) and approximately 144 hours of work per semester. This course is listed as one of the Natural and Physical Science Core Courses (Area 3) for General Education degree requirements. All high school and college students who earn a C or better in CS108 will earn 3 college credits toward the Science Core.

With regards to research on this course, all data, including but not limited to your responses to surveys, assessments, and assignments in this course may be collected as part of a research study. The purpose of this research study is to improve how computer science is taught.

Recommended Supplies:
1. Internet access
2. USB Flash Drive
3. Notebook and pen or pencil for taking notes

There are no required textbooks for this course

Grading:
The CS108L takes place during the fall semester at SODA. There will be eight modules, each of which consists of a programming assignment, "Preview Questions, AKA Do Now" questions, and lecture videos. The final module is a longer programming assignment that is more self-directed. The total points a student earns during the semester determines a student's final course grade.

1. *Programming Assignments:* 10 weekly assignments worth 20 points each and a final programming project worth 80 points. There are opportunities to earn extra credit on most assignments. Total: 280 points
2. *Quizzes:* Completed in class throughout the semester, there will be roughly 5 quizzes. These will be worth 10 points each. If you are not in class, you will lose those points. Total: 50 points
3. *Participation:* All students begin with 100 points. Students will lose points if they are absent without prior permission, not engaged in the activities or assignments during class, do not complete surveys or if they have not prepared for class by doing assigned activities outside of class.
4. *Exams:* There will be a midterm and a final, each given during a class period and worth 100 points. Total: 200 points
5. *Extension problems:* Students are required to complete 2 extension problems. Extension problems are posted for 4 modules, and students must choose 2. Each is worth 20 points. Total: 40 points.
6. *Your SODA grade and your UNM-Valencia grade will be the same. There is no way to "boost" your grade- the grades are based on your performance on the above assignments.*

Letter Grade Score Ranges	
Numerical Score	**Letter Grade**
>= 100%	A+
93% – <100%	A
90% – <93%	A-
87% – <90%	B+
83% – <87%	B
80% – <83%	B-
77% – <80%	C+

Letter Grade Score Ranges	
Numerical Score	**Letter Grade**
73% – <77%	C
70% – <73%	C-
67% – <70%	D+
63% – <67%	D
60% - <63%	D-
<60%	F

Remember: *Though you may be assigned a grade of C-, you will not receive credit for the Science Gen Ed Core Course unless you have a C or better.*

Late Assignments:

You have 3 free late days in the semester. After the free days are used you will be penalized 10% for the first late day and 20% the second late day. No assignments will be accepted more than 2 days late. Excuses are unacceptable, so save your free days for real emergencies.

Course Assignments (Tentative Dates):

- Module 1 (08/01-08/23/2019): Introduction to NetLogo
- Module 2 (08/26-08/30/2019): Introduction to Abstraction
- Module 3 (09/02-09/13/2019): Introduction to Modeling
- Module 4 (09/16-09/27/2013): Boolean Logic
- Module 5 (09/30-10/04/2019): Variables, Scope and Running Experiments with Computer Models
- Midterm Week (10/7): Review (10/7), Midterm Exam (10/9)
- Module 6 (10/14-10/25/2019): Algorithms
- Module 7 (10/28-11/08/2019): Epidemic Modeling with Scientific Method
- Final Project (11/11-11/25/2019): Project
- Final: Review (12/6): Final Exam 12/8

Course Policy:

Below is a list of general course policies.

1. All assignments specify what format (file type) is to be submitted. Work in any other format will not be graded.
2. All programs require the name of **ALL** authors at the top of the code tab in comments. If an author's name is missing, they will not receive credit.
3. You must use comments to initialize each procedure you authored. When working in pairs it is expected both students have substantial contributions.
4. Instructors have the right to drop students from the UNM CS 108L course if they fail to turn in 2 assignments or do not show up to class at any time throughout the semester.

Attendance Policy: Regular and punctual attendance is required.

Accommodation Statement:

Accommodations will be provided based on IEPs and SAT plans.

Academic Integrity: The University of New Mexico believes that academic honesty is a foundation principle for personal and academic development. All University policies regarding academic honesty apply to this course. Academic dishonesty includes, but is not limited to, cheating or copying, plagiarism (claiming credit for the words or works of another from any type of source such as print, Internet or electronic database, or failing to cite the source), fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Dual Credit students are held to the letter of UNM's Academic Honesty policy. The University's full statement on academic honesty and the consequences for failure to comply is available in the college catalog and in the *Pathfinder*.

Specifically, in this course, you may discuss assignments with your classmates, but **you may not copy code and present it as your own**. We will scan assignments for plagiarized code. Assignments completed in collaboration should always identify who contributed to the assignment. If you are unsure about whether something violates the Academic Integrity policy, it is your responsibility to ask an instructor.

Cell Phones and Technology: School of Dreams Academy is a cell-phone free environment. If you have a cell phone with you during class, it should be "off" and in your backpack or purse. It should not be visible during the class.

Work Hard. Be Nice*: UNM has established policies to encourage a respectful and supportive learning environment for all students. There are specific policies in the *Pathfinder* regarding, for example, student grievances, code of conduct, sexual harassment, and discrimination. All UNM policies apply in this class. Additionally, I expect all students and instructors to be respectful of one another, an attitude captured by the *motto of the KIPP charter schools: Work Hard. Be Nice. Within that context I also encourage you to Be Creative. Have Fun. All students must abide by SODA student handbook policies.

Office Hours:
The UNM-Valencia Instructor of Record for this course can be available via Zoom for office hours on Mondays from 1:30 to 2:45 and on Fridays from 1:30 to 2:00. Here is the link to use to enter the Zoom room for office hours: https://unm.zoom.us/j/153186614