



CS108L Computer Science for All

Instructor:

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Course Description:

CS108L — Computer Science for All is an introduction to Computational Science and Modeling. As a hybrid course, a significant part of the course content is on-line. This hybrid course uses a style of pedagogy called a “flipped classroom”. That is, most content (i.e. the lectures) is delivered during out-of-class times via videos and reading materials which are expected to be reviewed by the deadlines given on the class website. While in-class time is used for hands-on activities, project work, questions and other interactive learning. Students are also encouraged to visit instructors during their office hours.

Goals: Students will gain experience not only in computer science and programming but also in designing, building, testing, debugging, and running experiments with computer models. Students will develop computational thinking skills and learn about complex adaptive systems.

Recommended Supplies:

1. Internet access
2. USB Flash Drive
3. Home or campus computer access

Students will create original computer programs using an agent-based modeling environment and programming language called NetLogo. NetLogo runs on Windows, Mac, and Linux operating systems. NetLogo is open source and free to use. Information on obtaining and installing NetLogo will be provided during the first week of class.

There is no required textbook for this course, but students will be assigned on-line material, including readings and media presentations, to be discussed in class.

Grading:

The course includes 9 modules, each of which includes a programming assignment and a set of materials to read or watch online. Points are awarded for each programming assignment, for quizzes and exams, and for class participation, according to the chart below. If it becomes necessary to make changes to the assignments or to the point distribution, those will be communicated clearly in class and on-line.

| Item | Description | Pts (ea.) | No. | Total |
|----------------------------|---|-----------|-----|-------|
| <i>1-Week Assignments</i> | Programming assignment due in 1 week | 20 | 5 | 100 |
| <i>2-Week Assignments</i> | Programming assignment due in 2 weeks | 40 | 3 | 120 |
| <i>Final Project</i> | Programming assignment | 80 | 1 | 80 |
| <i>Quizzes</i> | Multiple choice in class quiz, closed book | 10 | 5 | 50 |
| <i>Review Quizzes</i> | Multiple choice, retake able quiz, UNM Learn | 5 | 5 | 25 |
| <i>Midterm Exam</i> | Given in class, multiple choice / programming | 100 | 1 | 100 |
| <i>Final Exam</i> | During finals week, multiple choice and programming | 100 | 1 | 100 |
| <i>Participation</i> | Engagement during activities in class | 100 | V | 100 |
| Total points earnable----- | | | | 675 |
| - | | | | |

| Letter Grade Score Ranges | |
|---------------------------|--------------|
| Numerical Score | Letter Grade |
| $\geq 90\%$ | A |
| 80% – 89% | B |
| 70% – 79% | C |
| 60% – 69% | D |
| $<60\%$ | F |

Course Schedule:

Weeks 1&2: Module 1
Introduction to NetLogo

Week 3: Module 2
Introduction to Abstraction

Week 4: Module 3
Introduction to Modeling

Week 5: Module 4
Boolean Logic

Weeks 6&7: Module 5
Variables, Scope and Running Experiments with Computer Models

Week 8: Midterm Review and Midterm Exam

Weeks 9&10: Module 6
Algorithms

Weeks 11&12: Module 7
Epidemic Modeling

Weeks 13-16: Module 8
Final Project

Final Exam: Per the UNM final exam schedule in our regular classroom

Course Policies:

Assignments:

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 that both students will make substantial contributions.

Late Assignments:

There are times when unexpected circumstances occur, to account for this you have 3 free late days in the semester that you may use without penalty on any assignments but the final project. We recommend you only use these for the unexpected emergencies. After they are used, you will be penalized 10% for each subsequent late day up to 2 days late. After 2 days late, assignments will only be accepted with instructor permission for genuine emergencies. If you are struggling with an assignment, use the available office hours and email questions early. Do not wait until the last minute to resolve issues.

UNM Policies:

Attendance Policy: Regular and punctual attendance is required. UNM *Pathfinder* (the UNM Student Handbook <http://pathfinder.unm.edu/>) policies apply, which indicates that an instructor may drop students based on non-attendance. This policy applies regardless of the grading option you have chosen.

Accommodation Statement: The Accessibility Resources Center (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting the Accessibility Resources Center, see the see the Bachelor and Graduate Programs office.

Academic Integrity: The University of New Mexico believes that academic honesty is a foundational 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. Note that plagiarism may be either deliberate or unwitting, it is the student's responsibility to know what constitutes plagiarism (link to UNM plagiarism rules: <https://grad.unm.edu/aire/aire-docs/plagiarism-guidelines.pdf>). 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 we will scan assignments for plagiarized code. Assignments completed in collaboration should always identify who contributed to the assignment. You may never type in another student's program without being cited as a collaborator. If you are unsure about whether something violates the Academic Integrity policy, it is your responsibility to ask an instructor. We will pursue the strongest penalties available for students violating the principles of academic integrity.

Cell Phones and Technology: As a matter of courtesy, please turn off cell phones, pagers, and other communication and entertainment devices prior to the beginning of class. Notify the instructor in advance if you are monitoring an emergency. Computers should be used during class to work on class material, and nothing else.

A Note About Sexual Violence and Sexual Misconduct: As UNM faculty members and instructors, we are required to inform the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu) of any report we receive of gender discrimination which includes sexual harassment, sexual misconduct, and/or sexual violence. To talk with someone anonymously, contact LoboRESPECT (link below). You can read the full campus policy regarding sexual misconduct at <https://policy.unm.edu/university-policies/2000/2740.html>. If you have experienced sexual violence or sexual misconduct, please ask a faculty or staff member for help or contact the LoboRESPECT Advocacy Center online: loborespect.unm.edu, by phone: (505) 277-2911, or by email: loborespect@unm.edu.