

# CS 261:Mathematical Foundations of Computer Science Summer 2017

**Instructor:** Antonio Espinoza

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Feel free to email me directly, I'm happy to answer questions.

**Office and Office Hours:**My office is at the Center for Advanced Research Computing (CARC) in 1000C (its a cubicle on the first floor). I'll hold office hours after class(12:15 -1:15) on Monday in the STAMM room of this building (CENT), and from 2-3 on Thursdays in my office. If these times do not work for you email me to schedule a different meeting time.

**Course Description:**Introduction to the formal mathematical concepts of computer science. Topics include proofs, first-order logic, set theory, functional relations, graphs, cryptography, state machines, and combinatorics.

**Textbook:**Discrete Mathematics and Its Applications 7th ed, by Kenneth H. Rosen

**Grading:** For letter grade purposes: A+ is 100-98, A is 97-91, A- is 90-89, B+ is 88-87, B is 86-81, B- is 80-79, C+ is 78-77, C is 76-71, C- is 70-69, D is 68-60, below 60 is an F.

- 45% Homework
- 25% Midterm
- 30% Final

**Homework:**Homework will be due at the start of class .I will not accept late work. You can expect to be assigned one homework a week, due on the following Tuesday. It is a good idea to start homework early in order to utilize office hours.

## Schedule:

Week	Chapter(s)	Topics
1	1	The Foundations: Logic and Proofs
2	2	Basic Structures: Sets, Functions, Sequences, Sums, and Matrices
3	3,4	Algorithms, Number Theory and Cryptography
4	5	Induction and Recursion
5	6	Counting
6	10	Graphs
7	13	Modeling Computation
8		Review/Catch up

**Prerequisites:** A minimum grade of C- in Computer Programming Fundamentals (CS151 or CS155 or CS152) and Calculus I (MATH162).

**Absences:** This is a short 8 week course and we will be covering a lot of material. It

is important to show up every day to class in order to not get behind. Only excused absences are allowed.

**UNM statement of compliance with ADA:** Qualified students with disabilities needing appropriate academic adjustments should contact the professor as soon as possible to ensure your needs are met in a timely manner. Students must inform the professor of the disability early in the class so appropriate accommodations can be met. Handouts are available in alternative accessible formats upon request.

**Statement about Title IX borrowed from Patrick Bridges:** No form of discrimination, sexual harassment, or sexual misconduct will be tolerated in this class or at UNM in general. I strongly encourage you to report any problems you have in this regard to the appropriate person at UNM. As described below, I must report any such incidents of which I become aware to the university. UNM also has confidential counselors available through UNM Student Health and Counseling (SHAC), UNM Counseling and Referral Services (CARS), and UNM LoboRespect. UNM faculty, Teaching Assistants, and Graduate Assistants are considered responsible employees by the Department of Education (see pg 15 at <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](http://oeo.unm.edu)). More information on the UNM policy regarding sexual misconduct, including reporting, counseling, and legal options, is available online: <https://policy.unm.edu/university-policies/2000/2740.html>