

# CS362: Undergrad Algorithms II

**Class Meeting Times and Location:**

T R 12:30-1:45pm @ WOOD 149

**Professor:**

Dr. Shuang (Sean) Luan

Email: sluan@cs.unm.edu

Office: FEC 151 (Building 119 on UNM Campus Map)

Office Hours: T R 2-3:30pm

**TA:**

Mr. Adnan Ibne Khair

Email: adnanibnekhair@unm.edu

Office: FEC 126

Office Hours: M W 12:00-1:00pm

**Textbook:**

Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein: Introduction to Algorithms, 3rd Edition.

Note: Since most of the material covered will be classic algorithmic theory, if you have a previous edition of the textbook it should also work. Just be sure to check the new edition for the correct homework problems.

**Topics:**

The study of data structures and algorithms and the mathematics needed to analyze their time and space complexity. Topics will include: asymptotic analysis, mathematical induction, probability, combinatorial mathematics, divide and conquer, amortized analysis, data structures, network flow algorithms, dynamic programming, randomization, computational geometry, computational complexity, linear programming (time permitting), etc.

**Exam Schedule:**

Exam 1: Feb 25th (Thursday) during class period.

Exam 2: Apr 7th (Thursday) during class period.

Exam 3: May 5th (Thursday) during class period.

Mark your calendars with the exam dates. You will be dropped from the class if you miss any exam.

**Grading:**

Homework (25%) + Exam 1 (25%) + Exam 2 (25%) + Exam 3 (25%)

Note that a final cumulative grade of  $\geq 90\%$  is guaranteed an A,  $\geq 60\%$  is guaranteed a pass (C), and the highest of the entire class is guaranteed an A+.

**UNM Learn:**

All announcements, lecture notes, homework, homework solutions, and various course information will be available through UNM Learn.

**Homework Assignment:**

All homework must be typewritten with a cover page, except figures which can be hand drawn.

All algorithmic problem solution must contain (1) a paragraph explaining the insight of your proposed algorithm, (2) a working example illustrating your idea, (3) pseudo code, and (4) a paragraph discussing the time and space complexity. **DO NOT SUBMIT PSEUDO CODE OR SOURCE CODE ONLY.** Neither the TA nor the professor is a compiler. Homework solutions containing only the pseudo-code without proper explanations will be graded zero!

Homework must be turned in at the beginning of the class period. Submission turned in up to 24 hours later will incur a 25% grade penalty. Submission turned in past 24 hours will be graded 0.

All grade change of the homework must be done within 7 days after students get them back.

**Academic Honesty:**

You should be familiar with the UNM Academic Honesty Policy contained in the Pathfinder. Courses in the Internet age can present some difficult situations for the student as to what is allowable. The guiding principle is that the work you turn in must be your own, not merely in terms of the specific writing or code, but also in terms of the overall design. You are encouraged to collaborate on homework problems. If you choose to work in a study group, you are required to spend at least half an hour trying to solve each problem beforehand. If your group is unable to solve a problem, it is OK to talk to other groups or ask your instructor or TA for hints. You must write up each problem solution on your own. If you collaborate with others to solve the problem, please identify your collaborators. If you did not work with anyone, you should write "Collaborators: none." The following are some examples of behavior that is not acceptable: Copying another person's solutions with or without their knowledge, mailing all or portions of your solution to another person, having another person write any portion of your solutions for you, Copying a solution from the Internet with or without acknowledgement of source. Cheating will result in an automatic F for the entire course and turning the case over to the appropriate authorities for further disciplinary action. In cases of copying, where it is sometimes difficult to tell who was copying from whom, all students with knowledge of the cheating will be penalized except in rare circumstances. If in doubt as to whether a collaboration is cheating it is your responsibility to ask your instructor in advance.