

MCS 401 – Computer Algorithms I

Syllabus

Lev Reyzin

Fall 2018

Time and location: M-W-F, 2:00-2:50pm, Thomas Beckham Hall (TBH) 180F

Instructor: Lev Reyzin, SEO 418, (312)-413-3745, lreyzin@math.uic.edu

Prerequisites: MCS 360 or CS 202. See instructor with any concerns.

Office hours: to be announced

Website: http://homepages.math.uic.edu/~lreyzin/f18_mcs401/

Textbook: J. Kleinberg and É. Tardos. *Algorithm Design*, 1st ed.

Topics: This course will cover the important principles behind the design and analysis of computer algorithms. We will study techniques such as divide-and-conquer, dynamic programming, and greedy methods, as well as algorithms for sorting, searching, graph computations, and pattern matching. We will also discuss the theory of NP-completeness.

Grading: problem sets: 20%, two in-class midterms: 20%+20% (dates TBD), final exam: 40%. All material covered in lecture, assigned in the readings, or included in the problem sets is “fair game” for the exams. Graduate students may be assigned different problems from undergraduates on some assignments and may be graded on a different scale.

Attendance and participation: In addition to the grading policies outlined above, a student's grade might be adjusted *slightly*, i.e. a few points, upward for positive contributions through class participation or downward for repeated absences. Moreover, students are responsible for all material covered and problem sets and readings assigned in lecture.

Problem set collaboration policy: You may discuss the homework problems with other students, but *you must write up your solutions by yourself*. If you work on the problem sets with other students, you must put the names of your group at the top of your problem set. However, consulting any outside or online sources, including websites, blogs, forums, mailing lists, online tutoring services, etc. to seek answers to the problems is strictly forbidden. If you have questions or need help, please come to office hours.

Late work policy: Problem sets are to be turned in by 2pm the day they are due, either in class or via my mailbox (on the 3rd floor of SEO). In general, late work will not be accepted. Exceptions must be asked for in advance of the due date and will be made on a case-by-case basis.

Course drop policy: According to the UIC administration, "Only a student can initiate the dropping of a course. The student can drop a course through Banner up through the 10th day of the semester; there is no academic penalty nor does a 'W' appear on the transcript. After the 10th day and through Friday of the 10th week, the student may drop courses by seeing a college academic advisor. These late drops are indicated by 'W' on the transcript and are limited to a total of four for the student's entire UIC career. In emergency situations, the college will entertain petitions for drops beyond the official deadlines. The student must see an academic advisor for guidance and a petition form."

Disability policy: Students with disabilities who require accommodations for access and participation in this course must be registered with the Office of Disability Services (ODS). Please contact ODS a 312/413/-2183 (voice) or 312/413-0123 (TTY).