

CSci 124/CSci 224 Discrete Structures II - 3 credits - Vora

Fall 2007 schedule: Tues., Thurs., 4:45-6:00 pm, Tompkins 203

Instructor: Poorvi Vora, Philips 706.

Office Hours: Tues/Thurs: 1:30-4:30 pm, unless cancelled in class.

TA: Ben Hosp. Email: bhosp@gwu.edu Office Hours: TBD

Course Website: <http://www.seas.gwu.edu/~poorvi/Classes/CS124/>

Purpose of course: To provide an introduction to some discrete structures and mathematics used in computer science, such as: linear algebra and algorithmic number theory. To illustrate these ideas using examples from cryptography and audio-video signal processing. CSci 124 satisfies a mathematics requirement in the undergraduate CS curriculum at GW.

Course content: Linear algebra, discrete convolution and polynomial multiplication, algorithmic number theory, complex numbers.

Prerequisites: Introductory discrete math and single-variable calculus.

Text: None. Class notes will be provided on the website.

Grading: HWs (30%), best 10 of 11 quizzes (15%), two tests (15% each), final (25%) (graduate students do a project instead of a final). HWs are due by 6 pm on the due date. Late HWs are not allowed. **You will not be allowed the use of laptops, PDAs or calculators and similar devices during quizzes, tests and finals.**

Undergraduate and graduate students will be graded separately. Graduate students will have extra assignments. *If you are an undergraduate and wish graduate credit for this class, contact your adviser. Graduate credit is NOT automatically obtained by undergraduates through registration for the graduate course.*

Policy on collaboration: All examinations, papers, and other graded work products and assignments are to be completed in conformance with The George Washington University Code of Academic Integrity. You may discuss HWs among yourselves, and work on them in groups. However, each student is expected to write his or her own HW out independently; you may not copy one another's assignments, even in part. You may not collaborate with others on the final, the tests or the quizzes. You are expected to cite all your sources in any written work that is not closed book: papers, books, web sites, discussions with others - faculty, friends, students. For example, if, in a group, one student has a major idea that leads to a solution to a HW problem, all other students in the group should cite this student.

Any violations will be treated as violations of the Code of Academic Integrity.

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss specific needs. Please contact the Disability Support Services office at 202.994.8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <http://gwired.gwu.edu/dss/>.

Syllabus: This is a tentative syllabus. **There will be a quiz every Thursday** except on 4 October and 8 November, when you will have the two in-semester tests. The final exam will be scheduled by the university.

Lectures 1-5: Modular Arithmetic

Lectures 6-9: GCD, euclidean algorithm, fast modular exponentiation

Lecture 10 (4 October): Test 1

Lectures 11-12: Chinese Remainder Theorem

Lectures 13-17: Polynomial Multiplication and FFT

Lectures 18-19: Vector Spaces

Lecture 20 (8 November): Test 2

Lectures 21-25: Vector Spaces

Lectures 26-27: Catch up.