

# AMS301.1: Finite Mathematical Structures A, Fall 2011

**Instructor:** Estie Arkin, Math Tower 1-106, 632-8363, [estie@ams.stonybrook.edu](mailto:estie@ams.stonybrook.edu),  
<http://www.ams.sunysb.edu/~estie/estie.html>;

**Office hours:** Tentative: Monday 1-3, Wednesday 11-1, Thursday 10-11, and by appointment. You may also stop by whenever you have a question, I am usually in 10-4 every day. I also welcome questions by email or by phone.

**TA:** (tentative) Rachel Zhao, [hacler.z@gmail.com](mailto:hacler.z@gmail.com), office hour Wednesday 1:30-2:30, Adnan Haque, [ahaque12@gmail.com](mailto:ahaque12@gmail.com)  
office hours Tuesday 2:30-3:30 in Harriman 010.

**Lectures:** Tuesday, Thursday 11:20-12:40, Physics P118.

**Text:** *Applied Combinatorics, 5th Ed.*, by Alan Tucker.

**Homeworks:** Homework will be assigned weekly (approximately), and will be due at the *beginning of class* on the due date. There will be approximately 10 homework sets, equally weighted, and I will drop the *lowest two* scores before computing your average.

**No late homework will be accepted.** (Since I drop the 2 lowest scores, missing a homework due to illness should not be a problem.) You may discuss homework problems with other students taking the course, with the TA, and with the instructor. But the work that you turn in should always be *your own* write-up, and you should show that you personally understand everything that you write. **Please make certain that your writing is neat and clear, and that you have expressed your reasoning, not just the final answer.** Please staple!

**Exams:** There will be three exams. The first two midterms will be in class, tentatively, Thursday October 6, and Thursday November 10. The third exam (final) is Tuesday December 20, 2:15-3:45, and is non cumulative. All exams are closed notes and book, however, you will be allowed a “cheat sheet”. This is a 4 by 6 index card that must be hand written by you (not typed, not xeroxed), and it will be turned in with your exam. All cell phones must be turned off during exams, and placed inside your bag! No calculators are allowed.

**Grades:** Your total average score will be computed based on 10% homework, 30% per midterm. Please note that there will be **no extra credit** option. I will use your total average score to assign a letter grade; about 30% A's, 35% B's, 25% C's, and 10% D's and F's.

## Course Outline:

**Graph Theory** Basic definitions, models, isomorphism, Planar graphs, Euler, Hamilton circuits, coloring, Trees, Shortest paths, minimum spanning trees, traveling salesperson.

**Enumeration and Counting:** Basic counting principles; Arrangements and selections, Binomial coefficients, permutations, combinations, Generating functions, Recurrence relations/Divide and conquer, Inclusion-Exclusion formulas.

**Academic Integrity:** Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at [http://www.stonybrook.edu/uaa/academic\\_judiciary/](http://www.stonybrook.edu/uaa/academic_judiciary/)

**Disability Policy:** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site. <http://www.ehs.sunysb.edu/fire/disabilities.asp>

The University at Stony Brook expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty is required to report disruptive behavior that interrupts faculty's ability to teach, the safety of the learning environment, and/or students' ability to learn to Judicial Affairs.