Math 3012F: Applied Combinatorics Fall 2006

Course Syllabus

Professor: Dr. Christine Heitsch  Office: Skiles 244  Phone: (404) 894 - 4758
Email: heitsch@math.gatech.edu  Webpage: http://www.math.gatech.edu/~heitsch

Office Hours: Tues 11AM – 12PM and Thurs 1:30 – 2:30. If you need to see me at another time, please email me to set up an appointment.


Course Description: “Elementary combinatorial techniques used in discrete problem solving: counting methods, solving linear recurrences, graph and network models, related algorithms, and combinatorial designs.”

Course Topics: Principles of Counting (Chapt. 1); Properties of the Integers: Mathematical Induction (Chapt. 4); Relations and Functions (Chapt. 5); The Principle of Inclusion and Exclusion (Chapt. 8); Generating Functions (Chapt. 9); Recurrence Relations (Chapt. 10); An Introduction to Graph Theory (Chapt. 11); Trees (Chapt. 12).

Grading Scheme: Grades will be calculated according to the following distribution:

- **30%** Final Exam
- **60%** Three Midterm Exams (20% + 20% + 20%)
- **10%** Homework

Significant improvement over the semester will also be taken into account. Grades will be assigned on the traditional scale:

- **A** 90 or higher
- **B** 80 – 89
- **C** 70 – 79
- **D** 60 – 69
- **F** Below 60

Final Exam: The final exam is scheduled for Tuesday, Dec. 12th, in the morning from 8:00AM - 10:50 AM. The exam will be cumulative and count for 30% of the final grade.
Midterm Exams: There will be three in-class exams, each counting for 20% of the final grade, for a total of 60%. The exams will be closed book, closed notes, no calculator, individual tests. The tentative exam dates are:

Midterm 1 Tuesday, Sept. 12th
Midterm 2 Tuesday, Oct. 10th
Midterm 3 Tuesday, Nov. 7th

Exam dates will be confirmed at least a week in advance.

Homework: Homework will be assigned on a weekly basis, and typically due on Tuesdays at the beginning of class. Late homework will not be accepted. Selected problems will be graded; assignments should be neat and clear. Unfortunately, illegible solutions will receive no credit. Collaboration is allowed (and explicitly encouraged) when working on homework problems, but each student must write-up and submit an independent solution in his/her own words.

Attendance: Regular attendance is expected. Exceptions will be accommodated only for valid, documented reasons including (1) official representation of the Institute and (2) medical emergencies.

Note: If you will not be able to meet the requirements of the class as stated, you must contact me within the first two weeks of class.

Academic Integrity: Students are reminded of the obligations and expectations associated with the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at: http://www.deanofstudents.gatech.edu/integrity/policies/honor_code.php and http://www.deanofstudents.gatech.edu/integrity/policies/code_of_conduct.php. Any violations must be reported to directly to the Dean of Students.

Additional Resources:
- 3012F webpage — www.math.gatech.edu/~heitsch/3012f.html
- Math Lab — http://www.math.gatech.edu/academic/undergraduate/mathlab.html
- Tech Tutoring — http://www.undergradstudies.gatech.edu/supportTutoring.htm

Updates: This syllabus is subject to modification. Any changes will be announced in class and posted on the course website.