MATH 317
Fall 2006
Elementary Combinatorics

MWF 10:00 – 10:50 am  Room: HUM 428

Instructor: Tim Berkopec.
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Office Hours: TBD


Calculator: TI-83 Graphing Calculator (or equivalent) (Optional)

Prerequisites: One year of calculus.

Withdrawals:
- Friday 9/1 is the last day to add courses or change sections.
- Friday 9/15 is the last day to change grading options.
- Friday 9/29 is the last day to drop a course without a grade.
- Friday 11/10 is the last day to withdraw from the course without Dean's approval. Grade of WP or WF is required.
- Friday 12/8 is the last day to withdraw WITH dean's approval.

Course Description
Basic enumeration including combinations, permutations, set and integer partitions, distributions, and rearrangements, binomial and multinomial theorems together with pigeon-hole and inclusion-exclusion principles and mathematical induction principles. Discrete probability, elementary ordinary generating functions, recurrence relations, and sorting algorithms.

**Homework**

Homework problems will be assigned almost every week and they will be collected on Wednesdays at the beginning of the class. Homework is a major part of the learning process in Mathematics. It is essential that students work on the problems on a regular basis. Students are encouraged to work and discuss the problems in groups, but they should turn in individual solutions. The two lowest homework grades will be dropped.

No late homework assignments will be accepted.

**Grading**

There will be two midterms and a cumulative final exam. Make-up exams can be arranged for exams missed with a VALID excuse (illness, family emergency, active participation in scholarly or athletic activities), and ONLY if prior notice is given.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homeworks</td>
<td>40%</td>
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<tr>
<td>2 MidTerms</td>
<td>20% each</td>
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<tr>
<td>Final Exam (Take Home)</td>
<td>20%</td>
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A 90% of the total points will guarantee at least a A-, 80% of the total points will guarantee at least a B-, 70% of the total points will guarantee at least a C-, and 60% of the total points a D. I will also curve the exams, final, and homework each separately, assign a letter grade to each, and average these letter grades to get an overall grade. I will then select the higher of the two grades that result from these two grading schemes.

**Course Content**

*Chapter 1 Introduction* Simple examples of problems encountered in combinatorics.


EXAM 1

*Chapter 5. The Binomial Coefficients*. Pascal's formula. The binomial theorem.


**EXAM 2**
Select topics as time allows

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**Students with disabilities**

We will accommodate students with documented disabilities. During the first two weeks of the semester, those students should inform the instructor of their particular needs and they should also contact Accessibility Services in Mesa Vista Hall, Room 2021, phone 277-3506. In addition, they should see CATS- Counseling and Therapy Services; Student Health Center (277-4537). (They can help if you suffer from exam anxiety). If you have a disability for which you may request accommodation in classes and have not contacted them, please do as soon as possible. Please also see me privately in regard to this course.

**Policy on religious observances**

Any student in this course who plans to observe a religious holiday which conflicts in any way with the course schedule or requirements should contact the instructor as soon as possible to discuss alternative accommodations.

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The instructor reserves the right to modify the information given here and/or any web page for the class.

Return to: [Department of Mathematics and Statistics, University of New Mexico](http://www.math.unm.edu/)

Last updated: 11 August 2006