MATH 4473 – Combinatorics
Section 01, Spring 2011
MWF 9:00 am – 9:50 am 302 Boyd Bldg

Prerequisites: Math 3003.

Instructor: Dr. Rui Xu
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Office hours: MW: 9:50 am – 12:30 pm; Friday 9:50 am –12:00 pm, 12:50 pm – 1:10 pm or by appointment.


Course Description: An introduction to combinatorics. Topics include the pigeonhole principle, combinations, permutations, binomial coefficients, generating functions, recurrence relations, and inclusion-exclusion principle.

Learning Outcomes:
(I) An understanding of permutations, combinations. (L7, L10)
(II) A thorough understanding of the Pigeonhole Principle. (L2)
(III) An understanding of the Binomial Coefficients. (L5, L10)
(IV) The ability to use Inclusion-Exclusion in applications (L9, L10)
(V) A thorough introduction to the theory of recurrence and generating functions. (L7, L9)
(VI) An introduction to graph theory. (L7, L10)

Grading Methods: Grades will be assessed based on a total of 570 points (as shown below), using the standard decade scale: (90–100%=A, 80–89%=B, 70–79%=C, 60–69%=D, below 60%=F).

<table>
<thead>
<tr>
<th>Test 1 (Monday, 01/31/2011)</th>
<th>100pts</th>
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</thead>
<tbody>
<tr>
<td>Test 2 (Friday, 02/25/2011)</td>
<td>100pts</td>
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<tr>
<td>Test 3 (Friday, 04/01/2011)</td>
<td>100pts</td>
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<tr>
<td>Test 4 (Wednesday, 04/27/2011)</td>
<td>100pts</td>
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<tr>
<td>Final (Comprehensive)</td>
<td>150pts</td>
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<tr>
<td>Homework</td>
<td>100pts</td>
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<tr>
<td>Attendance</td>
<td>20pts</td>
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<tr>
<td>Total (with the lowest test score dropped)</td>
<td>570pts</td>
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</tbody>
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Homework & Test policy: You are required to turn in your homework on time, late homework will not be accepted. Homework may be graded partially or totally. I may grade a specific problem or just look for completeness. I am interested in the solution of problems not just their answers. So you need to show your work in details to get credits. The lowest test score will be dropped, no make-up test. No makeup final exam.
Other Policies:

1. Class attendance will be taken every class day. Students are not allowed to come to class late or to leave early. If one has to come to class late or leave early, he/she needs to let the instructor know in advance, otherwise the instructor will give him/her two warnings before lowering his/her grade to the next level. If one misses class for any reason, it is his/her responsibility to get the lecture notes/worksheet from a classmate. Students are allowed to miss at most 3 classes to get the full 20 pts for attendance and will lose 5 pts for each additional absence.

2. Pagers or cell phones should be set to an inaudible setting.

3. If you are a person with any kind of disability and anticipate needing any type of accommodation to participate in this class, please let me know at the beginning of the semester and make appropriate arrangements with Disability Services.

Important Dates:

- January 5-January 11: Drop/Add and late registration
- January 17: Martin Luther King Holiday (offices closed, no classes)
- March 2: Last day to withdraw with a grade of W
- March 7-March 11: Spring Break (no classes)
- April 27: Last day of class
- April 28: Reading Day
- May 2 (Wednesday): Final Exam 8:00 am – 10:00 am