Mathematics 2200-2 Discrete Math Spring 2009

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Office Hour: Mondays 5-6 pm; additional office hour Wednesdays 5-6 pm on exam weeks. I will also be available in the tutoring center one hour per week TBD.


Course Description: Math 2200 is a course on the fundamentals of discrete mathematics. Its purpose is two-fold. On the one hand, it is intended as an introduction to proofs and rigorous analytic thinking. You will learn how to understand and write short proofs, and you will improve your problem solving techniques. On the other hand, you will become acquainted with many basic and wonderful elements of mathematics such as: sets and relations, elementary number theory, combinatorics, discrete probability, graphs, algorithms. Therefore this course should also provide you with a good foundation for higher mathematics or computer science courses. Prerequisites: MATH 2210 or Calculus III equivalent.

Grades and Exams:
(40%) Exams: There will be 3 one-hour midterms over the course of the semester. Tentative exam dates can be found online. If the exam dates are changed for any reason, announcements will be made in class as well as posted online. The lowest midterm grade will be dropped in the final grade calculations.

There will be exams/exam portions where calculators are not allowed.

(30%) Homework: Approximately, one assignment will be due every week. The tentative schedule of assignments can be found online, along with due dates. The problems will also be posted online as they are given in class. If assignment contents/due dates change during the semester, announcements will be given in class and posted online. Problems will be assigned directly from the book and a random subset of those assigned will be graded. Partial credit may be given for homework assignments. Absolutely no late assignments will be accepted.

(30%) Final Exam: The final exam is scheduled for Monday, May 4 from 6:00-8:00 pm. The exam will be cumulative.

Grades: Grades in this course will be curved, but I anticipate final grades will fall approximately in the following ranges, with ± at the fringes of these intervals and determined by the curve:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>at least 85%</td>
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<tr>
<td>B</td>
<td>at least 75%</td>
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<tr>
<td>C</td>
<td>at least 60%</td>
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<tr>
<td>D</td>
<td>at least 50%</td>
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<tr>
<td>E</td>
<td>under 50%</td>
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Even with a curve, if you do not successfully complete at least 50% of the course material, you should not expect a passing grade in this course.
Makeup Policy: Alternate exam dates can be arranged for participants in University sponsored activities which prevent the student from being in class, or students with disabilities falling under the ADA. Such students should contact me early in the semester about their position and note that all exams must be completed by the scheduled exam date. Make-up exams in general will not be given, except in extreme circumstances, and requests for such must be made no later than 2 weeks before the scheduled exam. I understand extreme circumstances may arise unexpectedly and such necessary absences will be handled on a case-by-case basis. Note that documentation will be requested in these situations and I appreciate as much advance notice as possible.

Tentative Course Outline:

January
12-14 1.1 Fundamentals of logic
19-21 1.2-1.3 Equivalences; Quantifiers
21 LAST DAY to drop classes
26-28 1.4, 1.6-1.7 Nested Quantifiers; Intro to proofs and proof methods
26 LAST DAY to register for classes

February
2-4 2.1-2.2 Sets and set operations
9-11 2.3-2.4 Functions, Sequences
12 ** Online midterm course evaluation open
16 Presidents’ Day
18 3.4-3.5 Primes, integers
19 ** Online midterm course evaluation closed
23 Review for Exam I
25 EXAM I, Chapters 1-2

March
2-4 3.6-3.7, 4.1 Algorithms, Applications; Induction
6 LAST DAY to withdraw
9-11 4.1-4.3 Induction, Ordering, Recursion
16-21 SPRING BREAK
23 Review for Exam II
25 EXAM II, Chapters 3-4
30 5.1-5.2, 7.5 Basics of counting, pigeon-hole principle; Inclusion-exclusion

April
1 5.3-5.4 Permutations and Combinations
6-8 6.1-6.2 Discrete probability
13-15 6.3-6.4 Bayes’ Theorem, Expected value
20 Review for Exam III
22 EXAM III, Chapters 5-6
27 TBD
29 Cumulative review for final exam
29 University last day of classes

May
4 FINAL EXAM, 6:00-8:00 pm
19 GRADES AVAILABLE

Nondiscrimination and Disability Access Statement: The University of Utah is fully committed to policies of nondiscrimination and equal opportunity, and vigorously pursues affirmative action in all programs, activities, and employment with regard to race, color, national origin, sex, age, and status as a person with a disability. Religion, sexual orientation, and status as a disabled veteran or veteran of the Vietnam era also are protected under nondiscrimination and equal opportunity employment policies. The University seeks to provide equal access to its programs, services and activities for people with disabilities. Reasonable prior notice is needed to arrange accommodations. Students should call 801-581-5020 or 801-585-1813 (both are TDD). Evidence of practices not consistent with these policies should be reported to
the Employee Relations/Dispute Resolution Office, 801-581-8365 (voice or TDD). If you require special accommodations under the ADA please inform me through official channels early in the semester.