

# Math 314-01 Discrete Mathematics

## Spring 2015

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- **Meeting time & location:** MWF 8:00-9:30 at UU-215
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**Please include [Math314] in the subject line of your email, or your email may not be read promptly.**

## Prerequisite

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Math 221 (grade C or above).

## Learning Objectives

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The purpose of this course is twofold. On one hand, we explore counting properties and methods related to the natural numbers  $\mathbb{N}$ , as well as properties and algorithms on graphs and trees. On the other hand, it presents all those properties in a logical fashion, so that we can understand and justify why they are correct. Among the proof techniques that we will use for the purpose, the most important one is “Mathematical Induction”

By the end of the semester students are expected to be familiar with the counting properties and methods related to the natural numbers, as well as properties and algorithms on graphs and trees. Students are also expected to understand and be able to justify why these properties, methods and algorithms are correct.

This course is a 4-credit course, which means that in addition to the scheduled lectures/discussions, students are expected to do at least 9.5 hours of course-related work each week during the semester. This includes things like: completing assigned readings and homework, studying for tests and examinations, preparing written assignments, and other tasks that must be completed to earn credit in the course.

## Textbook

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**Discrete Mathematics** by L. Lovász, J. Pelikán and K. Vesztergombi, Springer, 2003

- This is the course text. All homework assignments will come from this book.
- The first part of the book, chapters 1-6, deals with counting properties and methods related to the natural numbers  $\mathbb{N}$ . The second part, chapters 7-15, deal with properties and algorithms on graphs and trees, and some related topics.
- We plan to cover most of the material in parts I and II, following closely the order and logic framework of the textbook.

## Grading

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- **Quizzes (10 %), two tests (40 %, with 20% each), a midterm exam (20%) and a final exam (30 %).**
- There are 12 regular quizzes scheduled, one per week of class. No quiz is scheduled for a class session that is immediate after a test. Each quiz will be graded on the scale from 0 to 10.
- If you miss an exam, test or quiz, your score for that exam, test or quiz will be a zero.
- The lowest two quiz grades will be dropped when the final total grade is calculated. Hence only 10 out of the 12 quizzes are counted.

Components	Dates	Percentage	Time allowed
Quiz	Weekly	10%	10 minutes * (12-2)
Test 1	Friday, Feb. 20	20%	90 minutes
Midterm	Wednesday, Mar. 18	20%	90 minutes
Test 3	Monday, Apr. 20	20%	90 minutes
Final	TBA	30%	120 minutes
<b>TOTAL</b>		<b>100%</b>	

## Homework Assignment

- Homework will be sent to you via email as well as posted at [Homework Page](#).
- Homework assignments will **not** be graded. Students are welcome to discuss the homework with the instructor during office hours.

## Quiz

- Quiz problems are chosen from previous homework assignments either in exactly same forms or with some modifications. It is highly recommended that a student finishes homework by him- or herself.
- No make-up is given for missed quizzes.

## Some Deadlines

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- Feb. 6: Course add and drop/delete deadline.
- Mar. 27: Course withdraw/change grade option deadline.

Note that a "Pass" grade in the "Pass/Fail" grade option does not count toward math degrees. If you are a math major, it is not advised to change the grade option to "Pass/Fail" unless you are ready to retake the course at a later time.

## Make-ups

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If you need to take a make-up, if possible, an advance request should be given. Checkable written proof to justify the request should be given.

In order to minimize the need for make-up exams and the stress of

dealing with multiple exams, within the first two weeks of the semester, all students must check the exam schedules of other courses they are taking and make sure that there is no major conflict. The exam dates may be changed accordingly only if the instructor determines necessary.

## Academic Dishonesty

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Students found cheating will be reported to the Provost Office following the academic procedure listed in the University Bulletin. Laptop and electrical communication devices cannot be used in a quiz, test or exam. Calculator in a cellphone cannot be used. Calculators are in general not allowed.

If you are used to using calculators, you should practice on homework problems without using a calculator.

## Disciplines

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No laptop usage in classroom. Text messaging should be minimal. Late arrivals, early departures, cell phone conversations, eating and drinking, etc., are inappropriate behaviors. According to the Faculty-Staff Handbook, the instructor may ask those who, in the instructor's judgment, have seriously impaired the class's ability to achieve the objectiveness of the course, to leave the classroom.

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