



## **Math 240, Introduction to Discrete Mathematics**

**Number of Credits:** 3 credits

**Course URL:** <http://www.math.wisc.edu/~msoskova/teaching/Math240.html>

**D2L URL:** <https://uwmad.courses.wisconsin.edu/d2l/home/4014437>

**Course Designation or Attributes:** None

**Meeting Time and Location:** MWF 8:50-9:40 in Van Vleck B239

**Instructional Mode:** Face to face

**Credit hours:** The three credit hours are met by four 50-minute meetings and a minimum of six hours of out of class student work per week for 15 weeks.

### **INSTRUCTOR:**

Mariya Soskova

**Office hours and location:** MW 9:45-10:30 and/or by appointment, Van Vleck Hall 523

**Email:** [msoskova@math.wisc.edu](mailto:msoskova@math.wisc.edu)

### **OFFICIAL COURSE DESCRIPTION**

Basic concepts of logic, sets, partial order and other relations, and functions. Basic concepts of mathematics (definitions, proofs, sets, functions, and relations) with a focus on discrete structures: integers, bits, strings, trees, and graphs. Propositional logic, Boolean algebra, and predicate logic. Mathematical induction and recursion. Invariants and algorithmic correctness. Recurrences and asymptotic growth analysis. Fundamentals of counting.

### **Requisites**

Math 217, 221, or 275.

### **LEARNING OUTCOMES**

This is an introductory course on discrete mathematics. Students will learn:

- some fundamental mathematical concepts and terminology;
- how to use and analyse recursive definitions;
- how to count some different types of discrete structures;
- techniques for constructing mathematical proofs, illustrated by discrete mathematics examples.

### **Textbook and Software**

- Kenneth H. Rosen, Discrete Mathematics and its Applications, seventh Edition, ISBN 978-0-07-338309-5
- We will be using Piazza for class discussion. Find our class page at [https://piazza.com/wisc/spring2018/math240\\_001\\_sp18/home](https://piazza.com/wisc/spring2018/math240_001_sp18/home).

### **GRADING**

- Homework Assignments 20%
- Midterm I 22.5%
- Midterm II 22.5%
- Final Exam 35%

### **EXAMS**

The dates for Midterm I and II are February 28<sup>th</sup> and April 11<sup>th</sup>, respectively at 5:30-7:00PM. The final exam is on Monday, May 9<sup>th</sup>, at 5:05-7:05PM. By signing up for this course you are agreeing to take the final exam at the scheduled time by the University.

### **HOMEWORK**

Every Friday you will receive a new homework assignment. Homework will be due the following Friday at the beginning of class. Late homework will not be accepted, except in case of illness or family emergency. Homework will be graded for completeness and three problems (selected at random) will be graded for correctness. Your solution should not be just a sequence of equations and formulas, write in complete sentences.

It is okay, even encouraged, if you work on the homework in groups. If you do, please acknowledge that in your homework. The solutions you submit, have to be written by each student individually. Copying is not allowed and will be acted against.

## **RULES, RIGHTS & RESPONSIBILITIES**

- See the Guide's to [Rules, Rights and Responsibilities](#).

## **ACADEMIC INTEGRITY**

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to <https://conduct.students.wisc.edu/academic-integrity/>.

## **ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

**McBurney Disability Resource Center syllabus statement:** "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

## **DIVERSITY & INCLUSION**

**Institutional statement on diversity:** "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." <https://diversity.wisc.edu/>