

Syllabus

MA 2201 / CS 2022 - Discrete Mathematics

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E1 Term 2023

Class Materials:

The main class materials are the online lectures, the lecture summaries, and the exercises, all found on the canvas site.

Supplementary Textbooks:

There are many good discrete mathematics books. You may look up the material from any reputable source. These two below are freely downloadable, quite well written, have some nice exercises, many with worked out solutions.

Text 1: **Discrete Mathematics** 

https://www.cims.nyu.edu/%7Eregev/teaching/discrete_math_fall_2005/dmbook.pdf

Laszlo Lovasz, Jozsef Pelikan, Katalin L. Vesztergombi

Text is freely downloadable.

Text 2: **Discrete Mathematics with Algorithms** 

https://doc.lagout.org/science/0_Computer%20Science/2_Algorithms/Discrete%20Mathematics%20with%20Algorithms%20%5BA%20Albertson%20%26%20Hutchinson%201988-07-22%5D.pdf

M. O. Albertson and J. P. Hutchinson

Text is freely downloadable.

Grading

Weekly Quizzes:

Each week there will be a quiz. It will be through canvas. It is a timed quiz. Each quiz has 20 questions worth one point each.

Please note: There are NO make-up quizzes.

Homework:

Every lecture comes with exercises. The exercises are to be discussed on the weekly exercise discussion board. Your exercise discussion team is about 10 students. Your weekly participation is worth 3 points, which may be used to enhance your quiz grades.

Participation Rubric:

- 3 pts - fully engaged on all days. Posting reasonable attempts at exercise solutions. Providing hints. Reacting constructively to other's posts. Pointing out flaws, offering alternatives.
- 2 pts - engaged on on some days. Posting at least one correct solution on one day. Reacting to a least some posts.
- 1 pt - minimally engaged at least one day.
- 0 pts - Unresponsive, or giving unhelpful posts or replies.

Tutoring:

Our TAs are Guillermo Nunez(gcnunez@wpi.edu (<mailto:blgobler@wpi.edu>)) and Kevin Metzler (kjmetzler@wpi.edu (<mailto:kjmetzler@wpi.edu>)).

Office hours: TBA

Communication

Email for simple things. Zoom otherwise. Please do **not** send email directly through Canvas. Use your WPI email account. Canvas email often gets delayed or lost. I will try to respond to email within 24 hours. In particular, if I have made a comment on an assignment or a quiz, and you want to respond to it, please send a WPI email. If you push the respond button in Canvas, I may never see it.

Contents

From the Catalogue: This course serves as an introduction to some of the more important concepts, techniques, and structures of discrete mathematics, providing a bridge between computer science and mathematics. Topics include sets, functions and relations, propositional and predicate calculus, mathematical induction, properties of integers, counting techniques and graph theory. Students will be expected to develop simple proofs for problems drawn primarily from computer science and applied mathematics. Recommended background: none.

This course is recommended background for: CS2223, CS3133, CS3431, ECE3801 and most of upper-level mathematics.