Lecture 0: Introduction

Matthew Fricke

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Matthew Fricke Lecture 0: Introduction

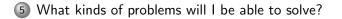
This Lecture



1 Why am I taking this course?

(2) Foundation for other courses

- Mathematical Maturity 3
- What is Discrete Math? 4



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Foundation for other courses Mathematical Maturity What is Discrete Math? What kinds of problems will I be able to solve?

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- Foundation for other courses
- Solve important Computer Science problems
- Develop "Mathematical Maturity"

Why am I taking this course?

• Algorithms and Datastructures I/II (CS361/2)

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• Proofs, Graphs, Trees, Recurrence, Sums, Sequences

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Artificial Intelligence (CS427)

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 - Logic, Sets, Functions, Relations, Proofs, ...

Why am I taking this course?

Introduction to many areas of math

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- Introduction to many areas of math
- Logic

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- Sets

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- Introduction to many areas of math
- Logic
- Sets
- Combinatorics

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- Discrete Probability

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• Not Real numbers - Mathematics of the Finite (mostly)

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- Not Real numbers Mathematics of the Finite (mostly)
- Discrete mathematical objects (binary, integers, sets, graphs)

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- Mathematics of Computers

Why am I taking this course?

• How many valid Internet Addresses are there?

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- How can I encrypt a message between two computers?

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- How can I build a circuit that adds two numbers?

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- How can I build a circuit that adds two numbers?
- How can I find the shortest path between two computers, or visit all cities in the shortest time?

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- How can I encrypt a message between two computers?
- How can I build a circuit that adds two numbers?
- How can I find the shortest path between two computers, or visit all cities in the shortest time?
- Calculate the probability of winning a lottery.