



**COLORADO STATE  
UNIVERSITY**

# CS 420

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Introduction to analysis of algorithms

# Introduction

- Instructor: Ewan Davies
- Office hour: Thursdays 11am in CSB 448
- Lectures: MFW 9am in Walnut 111 (sorry, I don't make the timetable)
- Recitation: W 3pm in CSB 425
- Teaching Assistant: Ali Bigdeli
  
- Basic information: <https://courses.cs.colostate.edu/cs420/>
- Optional textbook: [Introduction to Algorithms](#) by Cormen, Leiserson, Rivest, Stein



# Motivation

- In CS 220 we learned a lot of math
- In CS 320 we learned about algorithms
- In CS 420 we combine the two and develop a rigorous theory of some simple algorithms
  
- It will be essential that you remember enough math to keep up
  - Counting
  - Calculus
  - Proof, especially proof by induction



# New topics

- Probability theory for computer science
- Randomized algorithms
- Entropy and information theory
- Approximation algorithms
- The idea that proof can be the “currency” of our understanding: we develop ideas in enough detail that we can prove they are correct, or in some cases we avoid the details but give the general idea

# How to succeed in this class

- Attend the lectures
- Do weekly quizzes and homework assignments
- Demonstrate your understanding on one midterm and one final (in-class exams)
- Ask for help, e.g. in office hours with me or the TA
  
- Weekly quizzes: easy, short questions designed to help you keep up **10%**
- Weekly homework assignments: longer, difficult questions requiring creativity **30%**
- Midterm exam: easier than the homework **30%**
- Final exam: also easier than the homework **30%**
- Recitations will be unstructured and you are encouraged to discuss and do the homework during recitation