**Course title**: Introduction to Analysis of Algorithms

**Course code**: CS 4820/5820

**Semester**: Spring 2022

## Instructor

**Name**: Eshan Chattopadhyay

**Office**: Gates Hall 319

**Email**: Eshan@cs.cornell.edu

### Office hours

**Day**: Monday

**Time**: 10:30am-11:30am

**Day**: Thursday

**Time**: 1:30pm-2:30pm

## Lectures

### Days

Monday

Wednesday

Friday

**Time**: 9:05am-9:55am

**Location**: Uris Hall G01

**Course description**: This course develops techniques used in the design and analysis of algorithms, with an emphasis on problems arising in computing applications. Example applications are drawn from systems and networks, artificial intelligence, computer vision, data mining, and computational biology.

## Learning objectives

Identify problems solvable with different algorithm design techniques

Analyze computational efficiency of algorithms

Recognize computationally intractable problems

Apply algorithmic techniques for intractable problems

Understand and implement famous algorithms

Write proofs and analyze algorithmic runtime

## Textbooks

Algorithm Design by Jon Kleinberg and Eva Tardos

Introduction to Algorithms by T. Cormen, C. Leiserson, R. Rivest

Algorithms by S. Dasgupta, C. Papadimitriou, U. Vazirani

## Prerequisites

CS 2800

CS 2110

CS 3110

## Grading

### Components

**Component**: Homework

**Weight**: 35%

**Component**: Participation

**Weight**: 5%

**Component**: Prelim 1

**Weight**: 15%

**Component**: Prelim 2

**Weight**: 15%

**Component**: Final exam

**Weight**: 30%

**Collaboration policy**: Collaboration is allowed on problem-solving ideas but solutions must be written up independently and acknowledge collaboration.

## Late submissions policy

**Late days allowed**: 6

### Penalty structure

**Late submission hours**: 0-12

**Penalty**: 20%

**Late submission hours**: 12-48

**Penalty**: Additional 20%

**Exceptions**: Grades from a late submission count only if you have late days left.

## Academic integrity policy

**Collaboration guidelines**: Collaborate on ideas, write up solutions independently, acknowledge collaborators.

**Admissible resources**: Only course materials and discussions allowed, no external resources permitted.

## Additional information

**Typesetting requirements**: Homework must be typeset and submitted as PDF.

**Inclusiveness statement**: Respectful communication and inclusive behavior are expected from all participants.

**Accommodations policy**: Students with disabilities should request accommodations within the first three weeks of the semester.